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Metacognition in Relation to Learning Environment as Perceived by Students of Different School Types

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Abstract

The study aimed at ascertaining correlation between metacognition and perceived learning environment scores of students. Comparisons were made between students studying in different school types i.e. SSC, ICSE and CBSE schools. Results revealed that CBSE students possessed better metacognition and they also perceived their learning environment more favourably than SSC or ICSE students. A significant, direct, positive correlation was found between total metacognition and total learning environment scores. Componentwise analysis revealed task orientation component of learning environment to be a strong and significant predictor of all the components of metacognition for SSC and ICSE students. However task orientation predicted only subtask monitoring and evaluation components of metacognition for CBSE students. The study highlights the need for a conducive learning environment for supporting students' metacognition.

Keywords: Metacognition, Learning Environment, SSC, ICSE, CBSE school types.

Learners as constructors of their own knowledge must be encouraged to think and to monitor their own understanding i.e. function at a metacognitive level. When learners create their own meaning of the content, it requires them to use higher order thinking skills. As a result, learners determine what they need to learn, manage their own learning activities, and also develop greater metacognitive skills such as reflective thinking and problem solving. (McNamara and O'Reilly, 1985; Weinstein and Meyer, 1995; Reddy and Shyamala, 2003). Brown *et al*., (1983) also support the above view. They present that metacognitive skills are characteristic of effective learners, good readers and writers and strong problem solvers. Summarizing a set of educational practices that emerged from the conference on research issues in thinking and values, B.K. Passi (2002) suggests that effective education provides a context in which the learner can engage in analytical, synthetic, associative, intuitive and metacognitive thinking. Since reflective thinking and metacognitive strategies do not automatically develop in learners, learning activities need to be structured so that they teach and support the use of metacognitive skills (Von Wright, 1992). That is, learning environments that facilitate the adoption of deep or transformative approaches to learning need to be designed and implemented if such learning is to occur.

Review of literature also suggested that metacognitive awareness serves a regulatory function and is essential to effective learning because it allows students to regulate numerous cognitive skills. The use of metacognitive activity led to higher self confidence in students' ability to successfully complete a task. Thus, it can be conclusively said that metacognition is important for the development of lifelong learners. Metacognition is promoted only in a supportive learning environment. . "The environment, climate, atmosphere, tone, ethos, or ambience of a classroom is believed to exert a powerful influence on student behaviour, attitudes and achievement" (Fraser, 1995, p. 344). The second area of study, learning environment, in the present research thus emerged.

Aims of the Study

1. To study and compare metacognition and perceived learning environment of secondary school students on the basis of their school types.
2. To ascertain the relationship between metacognition and perceived learning environment of secondary school students on the basis of their school types.

Design of the Study

Descriptive method was used for the study; comparisons made between school types and correlations ascertained. Data was collected from 920, class IX students from SSC, ICSE and CBSE schools situated in the Greater Mumbai region. Due representation to types of schools was given through stratified sampling technique.

Tools Used

The Inventory of Metacognitive Self-Regulation (IMSR) by Howard et al. (2000) was used to measure metacognition. The IMSR is a 30-item self-report questionnaire, requiring respondents to rate themselves on a 5-point Likert scale (with never to always). The instrument has been reliably analyzed into 5 separate components of knowledge of cognition, evaluation, subtask monitoring, objectivity and problem representation.

What is Happening in this Class (WIHIC) by E. Margianti (2001) was used to measure perceived learning environment for the study. It also uses a 5 point response scale from never to always. The actual form of the scale was used for the study. The WIHIC measures student cohesiveness, teacher support, involvement, order and organization, task orientation, cooperation, and equity components of the learning environment.

Results

The analysis of the study is reported under the following headings:

1. Difference in metacognition scores on the basis of school types.
2. Difference in perceived learning environment scores on the basis of school types.
3. Correlation between metacognition and perceived learning environment scores.

1. Difference in Metacognition scores on the basis of school types:

No significant difference for the total metacognition scores between students of different school types was obtained. This indicates that total metacognition of students studying in SSC, ICSE and CBSE schools do not differ. Metacognition is thus an all pervasive ability. This shows that students belonging to different school types possess metacognition to the same extent.

However a significant difference was seen when the scores of SSC, ICSE and CBSE students were tested componentwise for metacognition. This indicates that SSC, ICSE and CBSE students significantly differ in their knowledge of cognition ($F=3.46$, $p=0.03$), objectivity ($F=6.43$, $p=0.00$), problem representation ($F=3.29$, $p=0.03$) and subtask monitoring ($F=4.53$, $p=0.01$). However they did not differ on the evaluation component of metacognition.

A subsequent t-test and mean scores showed that CBSE students scored better than SSC or ICSE students. In other words, CBSE students surpassed the SSC and ICSE students at objectively thinking about their learning as it proceeds (For CBSE & ICSE; $t=3.06$, $p=0.01$), understanding the problem fully before proceeding to solve it (For CBSE & SSC; $t=2.44$, $p=0.01$) and at monitoring the choice of learning strategies and completing each subtask (For CBSE & SSC; $t=2.85$, $p=0.00$ and For CBSE & ICSE; $t=2.54$, $p=0.01$). It was also clear that ICSE students were better at knowledge of their cognitive abilities than SSC students ($t=2.57$, $p=0.01$), while SSC students were better than ICSE students at objectively thinking about their learning as it proceeds ($t=2.57$, $p=0.01$).

2. Difference in Perceived Learning Environment scores on the basis of school types

A significant difference for the total learning environment scores on the basis of school types was obtained ($F=6.71$, $p=0.00$). Subsequent t-test and mean scores indicated that CBSE students perceive their total learning environment better than SSC ($t=3.56$, $p=0.00$), as well as ICSE ($t=2.31$, $p=0.02$) students. However perception of learning environment of SSC and ICSE students did not differ.

Componentwise analysis for learning environment showed a significant difference for student cohesiveness ($F=6.18$, $p=0.00$), involvement ($F=7.91$, $p=0.00$), task orientation ($F=10.94$, $p=0.00$) and equity ($F=9.88$, $p=0.00$) between SSC, ICSE and CBSE students. Analysis with t-test and mean scores indicated that CBSE students perceive student cohesiveness, involvement, task orientation and equity better than SSC or ICSE students (Table 1). The students of all the school types did not show any difference in perceiving the three components – teacher support, order and organization, and cooperation, of learning environment.

3. Correlation between Metacognition and Perceived Learning Environment: Is discussed as;

a. Correlation between total metacognition and total learning environment scores
b. Correlation between total metacognition and components of learning environment scores
c. Correlation between components of metacognition and components of learning environment scores

Table 1: t-Value for the Components of Learning Environment, on the Basis of School Types.

Component	Group	N	Mean	StdDev	t value	p value	Level of Sig
1. Student Cohesiveness	SSC	433	31.71	5.74	1.74	0.08	Not Sig
	ICSE	287	32.42	4.59			
	SSC	433	31.71	5.74	3.30	0.00	0.01
	CBSE	200	33.26	4.80			
	ICSE	287	32.42	4.59	1.94	0.05	Not Sig
	CBSE	200	33.26	4.80			
3. Involvement	SSC	433	25.67	6.15	0.58	0.55	Not Sig
	ICSE	287	25.94	5.87			
	SSC	433	25.67	6.15	3.85	0.00	0.01
	CBSE	200	27.67	5.84			
	ICSE	287	25.94	5.87	3.19	0.00	0.01
	CBSE	200	27.67	5.84			
5. Task Orientation	SSC	433	30.34	6.00	1.36	0.17	Not Sig
	ICSE	287	30.94	5.36			
	SSC	433	30.34	6.00	4.61	0.00	0.01
	CBSE	200	32.55	4.57			
	ICSE	287	30.94	5.36	3.44	0.00	0.01
	CBSE	200	32.55	4.57			
7. Equity	SSC	433	28.56	7.60	2.90	0.00	0.01
	ICSE	287	30.19	7.04			
	SSC	433	28.56	7.60	4.09	0.00	0.01
	CBSE	200	31.17	7.06			
	ICSE	287	30.19	7.04	1.51	0.13	Not Sig
	CBSE	200	31.17	7.06			

a. Correlation between Total Metacognition and Total Learning Environment scores

A significant, positive, direct and substantial relationship between total metacognition and total learning environment was obtained for SSC (r=0.607, p=0.00), ICSE (r=0.556, p=0.00) and CBSE students (r=0.510, p=0.00). No significant difference between the coefficients of correlation of total metacognition and total learning environment was obtained, on the basis of school types. Thus the relationship between total metacognition and total learning environment scores for SSC, ICSE and CBSE students does not differ.

b. Correlation between Total Metacognition and Components of Learning Environment scores

A significant, positive, direct and low to substantial correlation between total metacognition and components of perceived learning environment was obtained for SSC, ICSE and CBSE students (Table 2). Significant multiple correlations (R) for total metacognition and components of learning environment on the basis of school types was also obtained. This strongly supports the conclusion that all the components of learning environment are related to metacognition of students.

Table 2: Simple Correlation and Multiple Regression Analyses for Correlation between Total Metacognition and Components of Learning Environment on the Basis of School Types.

Components of Learning Environment	Group	Metacognition	
		r	β
1. Student Cohesiveness	SSC	.466 **	.137**
	ICSE	.284 **	-.014
	CBSE	.278 **	-.032
2. Teacher Support	SSC	.380 **	.053
	ICSE	.426 **	.133*
	CBSE	.288 **	.030
3. Involvement	SSC	.375 **	.030
	ICSE	.433 **	.143*
	CBSE	.398 **	.170*
4. Order and Organisation	SSC	.411 **	.049
	ICSE	.239 **	-.019
	CBSE	.330 **	.047
5. Task Orientation	SSC	.621 **	.431**
	ICSE	.572 **	.405**
	CBSE	.481 **	.292**

Contd.

	Components of Learning Environment	Group	Metacognition	
			r	β
6.	Cooperation	SSC	.472 **	.058
		ICSE	.375 **	.086
		CBSE	.422 **	.196*
7.	Equity	SSC	.400 **	.052
		ICSE	.358 **	.053
		CBSE	.313 **	.040
	Multiple Correlation R	SSC		.656**
		ICSE		.627**
		CBSE		.565**
	R^2	SSC		.431
		ICSE		.393
		CBSE		.319

N (SSC) = 433 N (ICSE) = 287 N (CBSE) =200
** Significant at 0.01 level. *Significant at 0.05 level.

The standardized regression coefficients (β) revealed the significant predictors for total metacognition. Significant predictors for total metacognition for SSC students are student cohesiveness and task orientation, for ICSE students are teacher support, involvement and task orientation and for CBSE students are involvement, task orientation and cooperation.

A significant difference between the coefficients of correlation of total metacognition and components of perceived learning environment was obtained for only four groups of different school types i.e for student cohesiveness [SSC- ICSE (Z=2.74 at 0.01 level), SSC-CBSE (Z=2.55 at 0.05 level)], for order & organization [SSC-ICSE (Z=2.74 at 0.01 level)] and for task orientation [SSC- CBSE (Z=2.44 at 0.01 level)]. Comparing the correlation coefficients makes it clear that for SSC students there is a stronger correlation between total metacognition and student cohesiveness, order and organization and task orientation components of learning environment; than for ICSE or CBSE students.

Table 3: Simple Correlation and Multiple Regression Analyses for Correlation between Components of Metacognition and Components of Learning Environment on the Basis of School Types.

Metacognition		Group	1. Knowledge of Cognition		2. Objectivity		3. Problem Representation		4. Subtask Monitoring		5. Evaluation	
	Learning Environment		r	β	r	β	r	β	r	β	r	β
1.	Student Cohesiveness	SSC	0.36**	.154**	0.34**	.189**	0.41**	.099	0.32**	.047	0.26**	.028
		ICSE	0.16**	.038	0.23**	.003	0.21**	-.007	0.21**	.004	0.16**	-.07
		CBSE	0.09	-.075	0.22**	.034	0.27**	.042	0.14*	-.119	0.24**	.025
2.	Teacher Support	SSC	0.19**	-.077	0.28**	.104	0.38**	.105	0.27**	.028	0.26**	.036
		ICSE	0.16**	-.044	0.37**	.196**	0.23**	-.004	0.34**	.111	0.33**	.153**
		CBSE	0.22**	.143	0.18*	.064	0.12	-.105	0.21**	-.022	0.24**	.027
3.	Involvement	SSC	0.26**	.052	0.25**	.013	0.30**	-.037	0.28**	.025	0.26**	.047
		ICSE	0.18**	.020	0.33**	.097	0.36**	.209**	0.38**	.199**	0.23**	-.01
		CBSE	0.19**	.092	0.30**	.176*	0.24**	.099	0.31**	.159	0.30**	.065
4.	Order and Organisation	SSC	0.31**	.089	0.26**	.006	0.37**	.048	0.33**	.077	0.22**	-.03
		ICSE	0.13*	.008	0.18**	-.017	0.21**	.049	0.14*	-.067	0.16**	-.01
		CBSE	0.11	-.045	0.18*	.018	0.23**	.063	0.28**	.060	0.30**	.056
5.	Task Orientation	SSC	0.43**	.283**	0.42**	.312**	0.53**	.338**	0.47**	.318**	0.40**	.315**
		ICSE	0.28**	.216**	0.45**	.319**	0.39**	.264**	0.45**	.326**	0.38**	.272**
		CBSE	0.18*	.082	0.28**	.143	0.22**	.037	0.42**	.287**	0.49**	.388**
6.	Cooperation	SSC	0.34**	.026	0.28**	-.051	0.43**	.097	0.37**	.096	0.29**	.040
		ICSE	0.21**	.069	0.28**	.051	0.28**	.070	0.24**	-.014	0.27**	.127
		CBSE	0.17*	.110	0.29**	.203*	0.35**	.214*	0.29**	.119	0.33**	.063
7.	Equity	SSC	0.25**	.040	0.25**	-.026	0.39**	.082	0.28**	.017	0.28**	.078
		ICSE	0.19**	.099	0.25**	-.031	0.20**	-.012	0.28**	.042	0.28**	.078
		CBSE	0.16*	.033	0.07	-.186	0.29**	.150	0.27**	.093	0.27**	.049
	Multiple Correlation R	SSC		.473**		.459**		.586**		.496**		.428**
		ICSE		.314**		.504**		.453**		.513**		.442**
		CBSE		.279*		.403**		.407**		.476**		.527**
	R^2	SSC		.224		.211		.344		.246		.183
		ICSE		.099		.254		.205		.263		.195
		CBSE		.078		.162		.166		.226		.277

N (SSC) = 433 N (ICSE) = 287 N (CBSE) =200 **Significant at 0.01 level. *Significant at 0.05 level.

This shows that improving student cohesiveness, order and organization of the class and clarifying the class goals would possibly affect metacognition of SSC students more than ICSE or CBSE students.

c. Correlation between Components of Metacognition and Components of Learning Environment scores

A significant positive, direct and low to substantial correlation between components of metacognition and components of perceived learning environment scores was obtained for SSC, ICSE and CBSE students (Table 3). Significant multiple correlations (R) for components of metacognition and components of perceived learning environment on the basis of school types was also obtained. This strongly supports the conclusion that components of metacognition are related to components of learning environment.

The standardized regression coefficients (β) revealed the significant predictors for components of metacognition.

For metacognition component, knowledge of cognition (understanding and utilization of one's cognitive abilities): student cohesiveness and task orientation were significant predictors with SSC students and task orientation with ICSE students. No component of learning environment significantly predicted knowledge of cognition with CBSE students. The results show that task orientation component of learning environment is a strong and significant predictor for knowledge of cognition for all the groups. The CBSE students group was an exception, possibly because very low correlation between all the components of learning environment and knowledge of cognition was seen.

For metacognition component, objectivity (thinking of one's own learning as it proceeds): teacher support and task orientation are significant predictors with ICSE students; student cohesiveness and task orientation with SSC students, while involvement and cooperation are significant predictors with CBSE students. Task orientation component of learning environment is a strong and significant predictor for objectivity for all the groups except for CBSE students. Cooperation is the strong predictor for CBSE students.

For metacognition component, problem representation (understanding the problem fully before proceeding): task orientation is a significant predictor with SSC students; involvement and task orientation with ICSE students; while only cooperation is significant predictor with CBSE students. Task orientation component of learning environment is a strong and significant predictor for problem representation for all the groups except for CBSE students.

For metacognition component, subtask monitoring (monitoring the choice of learning strategies and completion of each subtask). Task orientation component of learning environment is a strong and significant predictor for subtask monitoring for all the groups, involvement is also a significant predictor with ICSE students.

For metacognition component, evaluation (double checking of problem solving process as it proceeds): Task orientation component of learning environment is a strong and significant predictor for evaluation for all the groups, teacher support is also a significant predictor with ICSE students.

Difference between coefficients of correlation of components of metacognition and components of learning environment for different school types was significant for only certain components within some groups of students. The results showed that for the components of metacognition which differed significantly with certain components of learning environment, SSC students show a stronger correlation than ICSE or CBSE students. And between ICSE-CBSE students, the ICSE students show a stronger correlation. (Table 4)

Discussion

• For metacognition on the basis of school types

The total metacognition scores of students did not differ on the basis of school types. However students of different school types differed on the basis of components of metacognition. This is possible, as students of different school types are exposed to different learning environments and taught by different teachers. Therefore, certain components of metacognition may be favoured in some school type while not in the other.

Students of CBSE school possess better metacognition than SSC or ICSE students. The above result indicates that both SSC and ICSE schools should assess the reason for their students falling behind CBSE students in metacognition ability. Besides, many differences exist between the three school types. The researcher observed that the difference in curriculum could be important for difference in metacognition of CBSE students as compared to the other school types. Both the SSC and ICSE curriculum should be revised regularly and changes that support student's metacognition should be included. Updated syllabus and a challenging curriculum including several cocurricular and extracurricular activities mark a distinction between CBSE and SSC as well as ICSE schools.

• For perceived learning environment on the basis of school types

The CBSE students clearly perceive their learning environment to be better than ICSE and SSC students. It is possible that besides the factors of learning environment that have been considered in the present study, other factors maybe more influencing on the learning environment of SSC and ICSE students.

Componentwise analysis reveals that the extent to which students know each other, their participation in class activities, the importance of completing activities planned and the fair and

Table 4: Difference between Coefficients of Correlation for the Components of Metacognition and Components of Learning Environment on the Basis of School Types.

Metacognition	Group	1. Knowledge of Cognition		2. Objectivity		3. Problem Representation		4. Subtask Monitoring		5. Evaluation	
Learning Environment		r	Z	R	Z	r	Z	r	Z	r	Z
1. Student Cohesiveness	SSC	0.36	2.87**	0.34	1.56	0.41	3.00**	0.32	1.56	0.26	1.43
	ICSE	0.16		0.23		0.21		0.21		0.16	
	SSC	0.36	3.37**	0.34	1.51	0.41	1.85	0.32	2.20	0.26	0.34
	CBSE	0.09		0.22		0.27		0.14		0.24	
	ICSE	0.16	0.75	0.23	0.10	0.21	0.75	0.21	0.75	0.16	0.86
	CBSE	0.09		0.22		0.27		0.14		0.24	
2. Teacher Support	SSC	0.19	0.39	0.28	1.30	0.38	2.22*	0.27	0.91	0.26	0.91
	ICSE	0.16		0.37		0.23		0.34		0.33	
	SSC	0.19	0.34	0.28	1.27	0.38	3.25**	0.27	0.81	0.26	0.34
	CBSE	0.22		0.18		0.12		0.21		0.24	
	ICSE	0.16	0.64	0.37	2.26*	0.23	1.18	0.34	1.50	0.33	1.07
	CBSE	0.22		0.18		0.12		0.21		0.24	
3. Involvement	SSC	0.26	1.17	0.25	1.04	0.30	0.91	0.28	1.43	0.26	0.52
	ICSE	0.18		0.33		0.36		0.38		0.23	
	SSC	0.26	0.81	0.25	0.58	0.30	0.81	0.28	0.34	0.26	0.46
	CBSE	0.19		0.30		0.24		0.31		0.30	
	ICSE	0.18	0.10	0.33	0.32	0.36	1.50	0.38	0.86	0.23	0.86
	CBSE	0.19		0.30		0.24		0.31		0.30	
4. Order and Organisation	SSC	0.31	2.48*	0.26	1.17	0.37	2.35*	0.33	2.61**	0.22	0.78
	ICSE	0.13		0.18		0.21		0.14		0.16	
	SSC	0.31	2.44*	0.26	1.04	0.37	1.85	0.33	0.58	0.22	1.06
	CBSE	0.11		0.18		0.23		0.28		0.30	
	ICSE	0.13	0.21	0.18	0.00	0.21	0.21	0.14	1.61	0.16	1.61
	CBSE	0.11		0.18		0.23		0.28		0.30	
5. Task Orientation	SSC	0.43	2.22*	0.42	0.91	0.53	2.35*	0.47	0.39	0.40	0.26
	ICSE	0.28		0.45		0.39		0.45		0.38	
	SSC	0.43	3.25**	0.42	1.85	0.53	4.30**	0.47	0.69	0.40	1.39
	CBSE	0.18		0.28		0.22		0.42		0.49	
	ICSE	0.28	1.18	0.45	2.15 *	0.39	2.04*	0.45	0.32	0.38	1.50
	CBSE	0.18		0.28		0.22		0.42		0.49	
6. Cooperation	SSC	0.34	1.83	0.28	0.00	0.43	2.22*	0.37	1.96*	0.29	0.26
	ICSE	0.21		0.28		0.28		0.24		0.27	
	SSC	0.34	2.09*	0.28	0.11	0.43	1.04	0.37	1.04	0.29	0.46
	CBSE	0.17		0.29		0.35		0.29		0.33	
	ICSE	0.21	0.43	0.28	0.10	0.28	0.86	0.24	0.64	0.27	0.64
	CBSE	0.17		0.29		0.35		0.29		0.33	
7. Equity	SSC	0.25	0.91	0.25	0.00	0.39	2.74**	0.28	0.00	0.28	0.00
	ICSE	0.19		0.25		0.20		0.28		0.28	
	SSC	0.25	1.46	0.25	2.20 *	0.39	1.27	0.28	0.11	0.28	0.11
	CBSE	0.16		0.07		0.29		0.27		0.27	
	ICSE	0.19	0.32	0.25	2.04 *	0.20	1.07	0.28	0.10	0.28	0.10
	CBSE	0.16		0.07		0.29		0.27		0.27	

N (SSC) = 433 N (ICSE) = 287 N (CBSE) =200 r = Pearsons' Coefficient of Correlation.
Z=Difference between Coefficients of Correlation ** Significant at 0.01 level. * Significant at 0.05 level.

equitable manner in which the students are treated is perceived better by CBSE students than by SSC or ICSE students. The SSC and ICSE schools could support their environment taking this result into consideration. The curriculum transaction in schools should improve student interaction, give importance to student opinion, make every student aware of the goals of a class and give equal attention and importance to each student in class.

• For correlation between metacognition and perceived learning environment

A positive and direct correlation is obtained for total metacognition and total learning environment scores of secondary school students on the basis of school types. This indicates that improving the learning environment would improve the metacognition of the students. Thus, improving the learning environment to enhance students' metacognition is advocated.

Task orientation component of learning environment is the strongest predictor of total metacognition for students of different school types. This shows that completing planned activities and staying on subject matter is strongly related to students' total metacognition. Since the students know what they are trying to accomplish in the class, they can plan well. This planning further helps them regulate their own course of action. Thus if the students are made aware of the goals of the class, it would help in development of their metacognition also.

It is also seen that task orientation component of learning environment is the significant and strong predictor of all the components of metacognition for SSC and ICSE students. For CBSE student's task orientation is the significant and strong predictor for two out of five metacognition components, i.e. subtask monitoring and evaluation. Thus the extent to which significance is given to completing planned activities and staying on the subject matter, is important for every component of metacognition.

Task orientation emerges as a strong predictor for every component of metacognition, possibly because classrooms in India are more homework and assignment oriented. Students have to submit their work on time and weightage to internal assessments has also started gaining importance. As a result students have developed the habit of planning and regulating their own work. This habit in turn is related to the development of metacognition in students. Besides, if students are allowed to organize classroom activities, they would focus on completing the tasks. It would give them an opportunity to think and retrace their steps to get good results, thus supporting development of their metacognition. Development of conducive learning environment for students should be the focus for teachers and school authorities.

The CBSE students perceive their learning environment better than the SSC and ICSE students. They also possess better metacognition than SSC or ICSE students when compared on different components of metacognition. However the SSC students show a stronger correlation between components of metacognition and components of learning environment than ICSE or CBSE students. The CBSE and ICSE school teacher should thus try to improve the classroom condition such that their students would also perceive their classroom environment to be supportive of their metacognition development.

The SSC students show a stronger correlation between components of metacognition and components of learning environment than ICSE or CBSE students. This is possible because for SSC students the classroom serves as the only learning environment. Their dependence on school is more than ICSE or CBSE students. The ICSE or CBSE students get help from their home, parents, peers and tutors. The SSC students lack most of these, as they belong to middle class (moderate income) families. The researcher observed these differences while visiting the various schools for data collection and during informal interaction with students. The SSC school teacher and school authorities should thus try to take advantage of the trust shown by their students towards them. They should provide them with the most suitable class activities and a learning environment for development of metacognition.

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