
Eureka

I Too Am Intelligent!

CHAPTER - V

DATA ANALYSES, INTERPRETATIONS AND DISCUSSIONS

5.0 INTRODUCTION

Collection of data and their analyses is an inseparable aspect of any act of investigation. Considerable amount of planning precedes the actual act of data collection. Keeping in mind the objectives of the investigation, for the purpose of data collection, appropriate tools and techniques are first short-listed. Then having the tools and techniques selected, the process of data collection begins as per the objectives of the investigation. Data are collected. But these data are raw and by themselves dead. They would remain useless and barren information. They would serve no purpose and therefore could conveniently be ignored and discarded subsequently. In order that they become meaningful, life needs to be infused in them. And that life giving process which makes the data speak is their analyses. In this chapter therefore, the data collected by the investigator are analyzed and discussed.

5.1 DATA FROM THE CUMULATIVE RECORD CARDS

With the permission of the Principal of the school, the researcher obtained the Cumulative Record Cards, (CRCs), of the sample students from the school office. From these cards, the introductory information about the sample students, such as, their names, sexes,

age, religion, parents'/guardians' names and addresses, etc. were left out. Since the researcher's aim was to collect information from these CRCs that provided the background/contextual information about the sample students, only the relevant items from the CRCs were considered and subsequently recorded. These information then were categorized and tabulated under different headings, (**Table 5.1**).

Sl. No.	No. of Siblings	Rural/Urban	Parents' Education	Parents' Occupation	Parents' Annual Income (Rs. in thousand)	Parents' Marital Status	Students' Interest
1.	02	Rural	XII	Farming	35000	A. T.	Music Acting
2.	04	Rural	B. Com.	S. E.	50000	A. T.	Games Sports
3.	02	Rural	B. A.	U. E.	25000	A. T.	Games M. Arts
4.	05	Rural	X	Farming	40000	A. T.	Singing F. Designing
5.	02	Urban	M. A.	Teaching	144000	A. T.	Sports Acting
6.	05	Rural	X	Farming	40000	A. T.	Singing Gardening
7.	02	Urban	M. Sc.	Teaching	144000	A. T.	Games Modelling
8.	01	Urban	M. Sc.	Govt. E.	300000	A. T.	Driving M'taineering
9.	02	Urban	M. A.	Teaching	144000	A. S.	Music Gardening
10.	03	Urban	B. A.	Teaching	160000	A. T.	Painting F. Designing
11.	04	Rural	XII	Teaching	120000	A. T.	Pets Gardening
12.	04	Urban	B. Com	Business	240000	A. T.	Travelling Gardening
13.	02	Urban	B. Com.	Business	220000	A. T.	Dancing Acting
14.	02	Urban	B. Com.	Business	300000	A. T.	Painting Gardening
15.	04	Urban	B. Sc.	Govt. E.	288000	A. T.	Trecking Sports
16.	02	Urban	B. E.	Govt. E.	230000	A. T.	M. Arts Music

Table 5.1: Students' Background.

Abbreviations used:

A. T. = Alive & Together

S. E. = Self Employed

U. E. = Unemployed

A.S. = Alive but Separated

Govt. E. = Govt. Employee

Note:

The entries in the column containing the parents' annual income are in rupees rounded to the nearest whole number. In the last column containing students' interest, Music means the students' interest in playing musical instruments. Interests in track and field events have been clubbed together in Sports while that in team events like football, basketball etc. have been brought under Games.

5.2 DISCUSSION

Table No. 5.1 contains some valuable information about the backgrounds of the sample students. As could be seen, 75% of the parents are graduates and are either government-employees or self employed; the minimum educational attainment of at least one the parents in each case is matriculation. The annual incomes of the families too indicate that all the sample students come from families that are economically quite well off. Further, except one, all the other sample students have their parents alive and living together. As for the number of siblings at home, at the beginning of the year 2003, no sample student was a single child of his/her parents. As far as the exposures to the modern world of the sample students

are concerned, majority of the sample students, (62.5%), live in the urban area and hence are exposed to the facilities of the modern world.

On the basis of the above analysis, it could be concluded that the students constituting the sample of the study hailed from families that are both educationally as well as economically rather well off. Their parents are educated and hence theoretically are capable of guiding and motivating their children academically.

While analyzing the interests of the sample students according to the theory of Multiple Intelligences, it was found that they are heavily biased towards the Bodily-Kinesthetic Intelligence. While 25% of the sample students show their interests in matters related to the Musical Intelligence and Natural Intelligence, a mere 6% of them show their proclivities in things connected with the Spatial Intelligence. Although no studies have been done, the above data corresponds well with the general trend of the overall life style of the people of the place. The normal leisure activities of the youth of the place are musical and physical, like singing, playing musical instruments, karate, football, etc.. Graphically the interests of the sample students may be represented as below, in Figure 5.1:

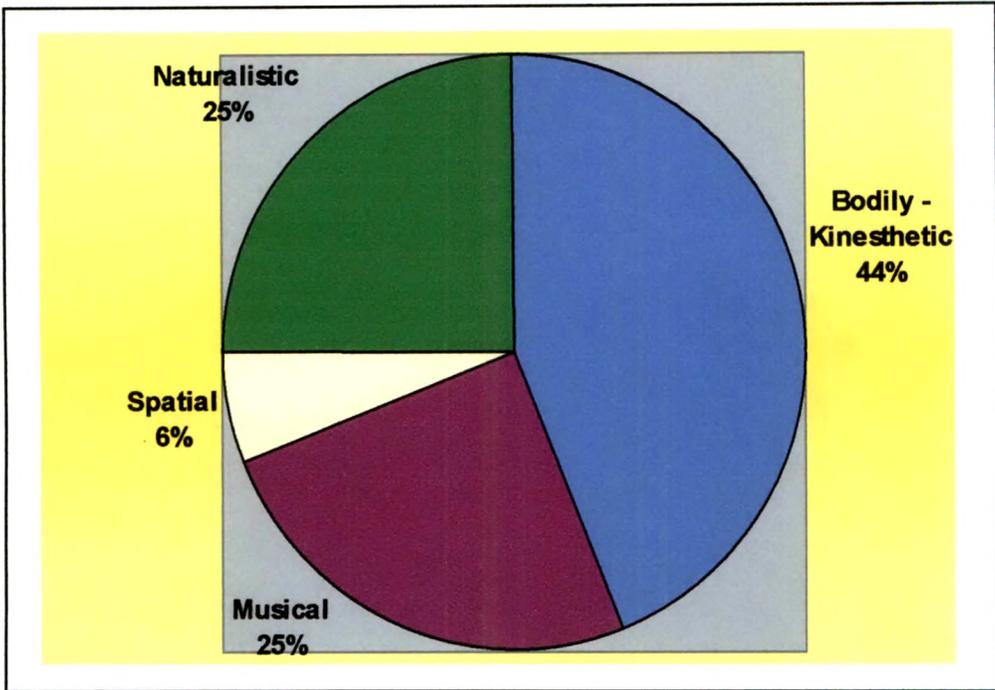


Figure 5.1: Students' interests in the MI language.

When the distribution of interests of the sample students were analyzed according to the sexes, a definite trend emerged. While the boys' showed greater interests in sports, games, martial arts, trekking, mountaineering, and music, the girls were found to be more interested in singing, dancing, gardening, fashion designing and travelling. There was only one girl who expressed her interest in music and martial arts. Figure 5.2 shows the distribution of interests among boys and girls.

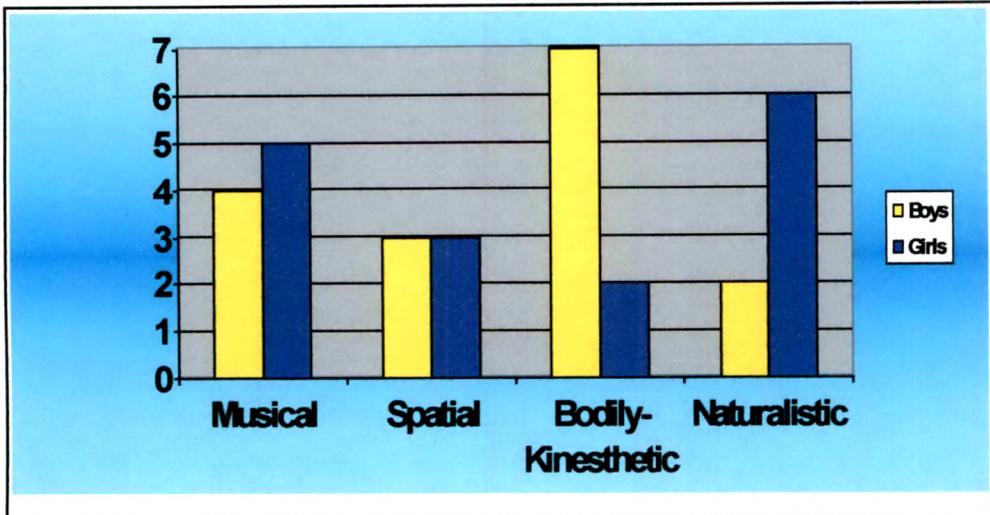


Figure 5.2 : Comparative interests of students.

5.3 MULTIPLE INTELLIGENCE PROFILE MAPPING

The Multiple Intelligence Profiles, (MIPs) of the teachers as well as those of the students were mapped with the help of two inventories. While the MIPs of the teachers were mapped with the help of the inventory by Armstrong, (refer to Appendix-E), those of the students were mapped with the help of the inventory by McKenzie, (refer to Appendix-F). Neither the teachers nor the students were informed about the theory of Multiple Intelligences at the time of administering the inventories. The sample was instructed that there was no time limit for completing the inventory forms. All they were instructed, however, was that they needed to complete the form in one sitting without any kind of consultation among themselves. If any one needed any clarification, the researcher provided them with that as and when they were sought for. The average scores, (out of

100), of the male and female teachers and the overall average scores of the teachers have been tabulated in Table 5.2 below:

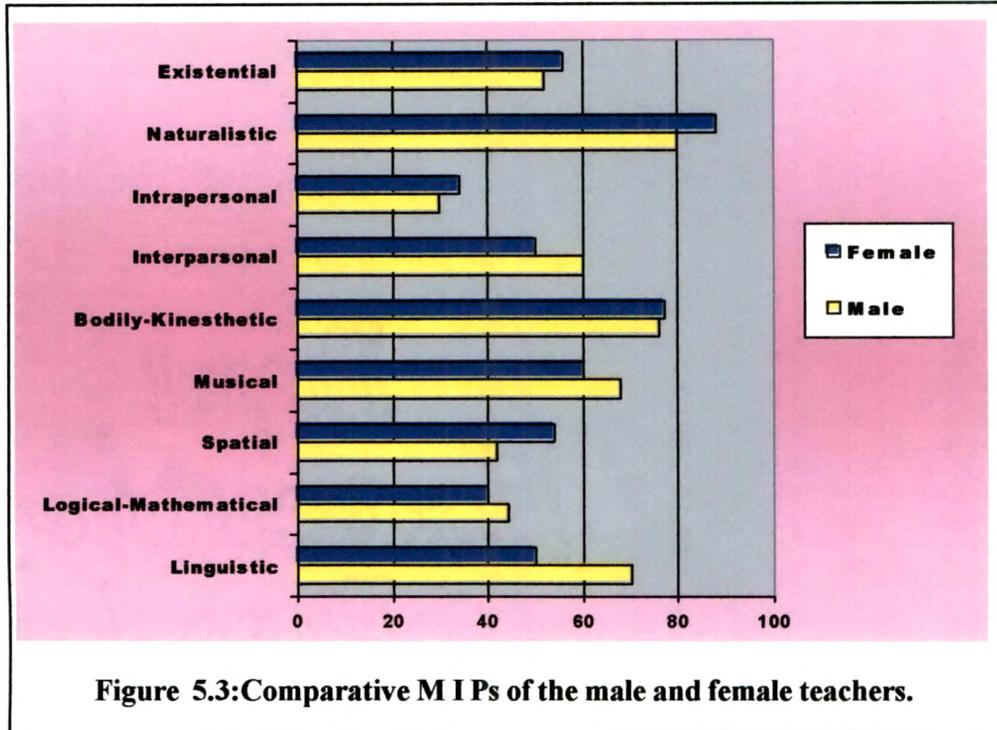
SL. NO	INTELLIGENCES	MALE	FEMALE	AVERAGE
01.	Naturalistic	80	88	84
02.	Bodily-Kinesthetic	76	77	75
03.	Musical	68	60	64
04.	Linguistic	50	70	60
05.	Interpersonal	60	50	55
06.	Existential	50	56	54
07.	Spatial	42	54	48
08.	Logical-Mathematical	44	40	42
09.	Intrapersonal	30	34	32

Table 5.2 : MIPs of Teachers.

5.4 ANALYSIS OF THE MIP OF TEACHERS

The comparative MIPs of the male and female teachers show that except for the three intelligences, namely, Musical, Interpersonal, and Logical-Mathematical intelligences, the scores of the female teachers in all other intelligences were found higher than that of their counterparts. In other words, the female teachers showed greater natural proclivities for Linguistic, Spatial, Intrapersonal, and Naturalistic intelligences than the male teachers. This implied that they were more likely to employ teaching methods related to these

intelligences more often than the male teachers did. These were their stronger preferences. Graphically the comparative MIPs of male and female teachers, (in percentage), may be shown as:



From the comparative MIPs of the teachers, it may also be inferred that the differences of the MIPs of the male and female teachers are proportional. That is to say that the scores of the male and female teachers vary proportionately. In other words, if the scores are low in a particular intelligence, then they are low for both the groups and if the scores are high, they are high for both the groups. However, in the case of the Linguistic Intelligence, it is slightly different. The comparative scores of the male and female teachers are

quite distinct and well separated. The female teachers seem to enjoy a definite edge over their male colleagues as far as the Linguistic Intelligence is concerned.

From the comparative MIPs of the teachers, a average MIP of all them emerged. Taking the average values of the scores of both the male and the female teachers in each of intelligences the common MIP of the teachers was drawn. This common MIP of the teachers has been represented graphically in Figure 5.4 below.

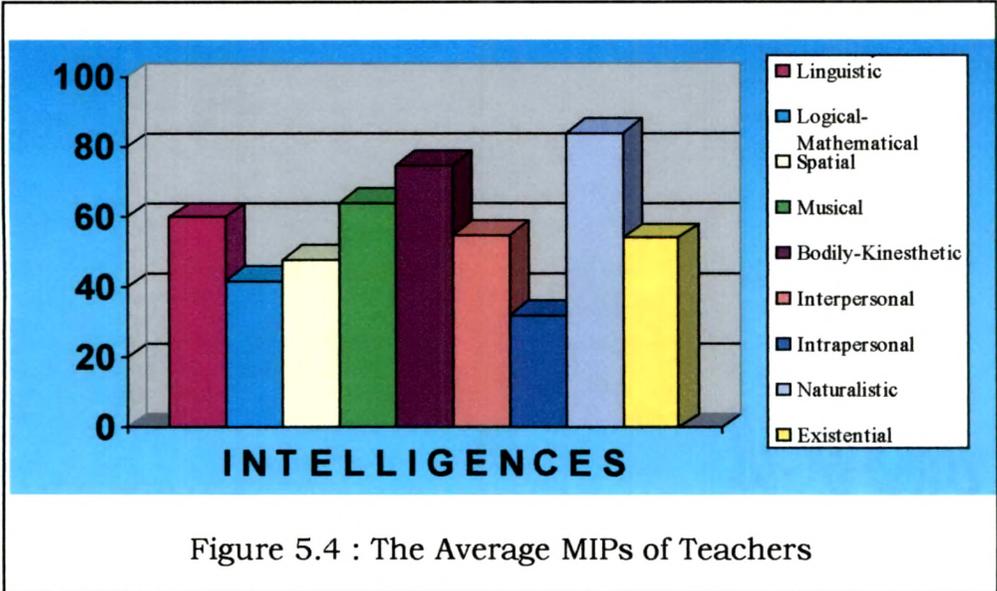


Figure 5.4 : The Average MIPs of Teachers

From the MIP of the teachers it was evident that the teachers showed natural preferences towards the Naturalistic Intelligence. The other intelligences that emerged strong among them were the Bodily-Kinesthetic and Musical. The weakest intelligence among them was the Intrapersonal. And marginally higher than the Intrapersonal

Intelligence was the Logical-Mathematical Intelligence. While the rest of the Intelligences were neither too strong nor were they too weak so as to be concerned if not disturbed about; they were average.

Further, being strong themselves in the Naturalistic, Bodily-Kinesthetic and the Musical Intelligences, it was expected that they would be making use of teaching methodologies related to these intelligences more than the others; that they would employ teaching aids related to these intelligences more naturally. However, the classroom observation and the interviews of the students prior to the intervention programme revealed quite the contrary of it. Teachers normally talked, 'lectured'. There was practically no evidence at all of any teaching activity or aid being used by them in the classroom related to either the Naturalistic Intelligence or the Musical Intelligence. The activities that found their places on the regular basis were related to the Linguistic, Spatial and Bodily-Kinesthetic Intelligences. Still further, while the Interpersonal and Existential Intelligences found their places occasionally, the Intrapersonal Intelligence did not find its place at all.

5.5 MIP MAPPING OF THE STUDENTS

Just as it was necessary to map the MIPs of the teachers for the reasons stated above, the same had to be done of the sample students for more or less similar reason. For any student it is impor-

tant to know what he/she is strong/poor at. It is important to be aware of their areas of interests, (which were found from the CRCs), their natural preferential styles of learning, their yet untapped, latent talents for the lack of awareness or opportunities etc. Therefore, the sample students were administered the MI inventory by McKenzie, (Appendix-F). The sample students were instructed to complete the first part of the inventory, that is, up to the drawing of the Bar Graph. The second part of the inventory, that is, the interpretation of the Bar Graph was deferred till everyone had completed drawing his/her Bar Graph. When all the sample students had completed entering their scores in the table and drawing their Bar Graphs, these were collected and the individual's scores were tabulated, (Table 5.3).

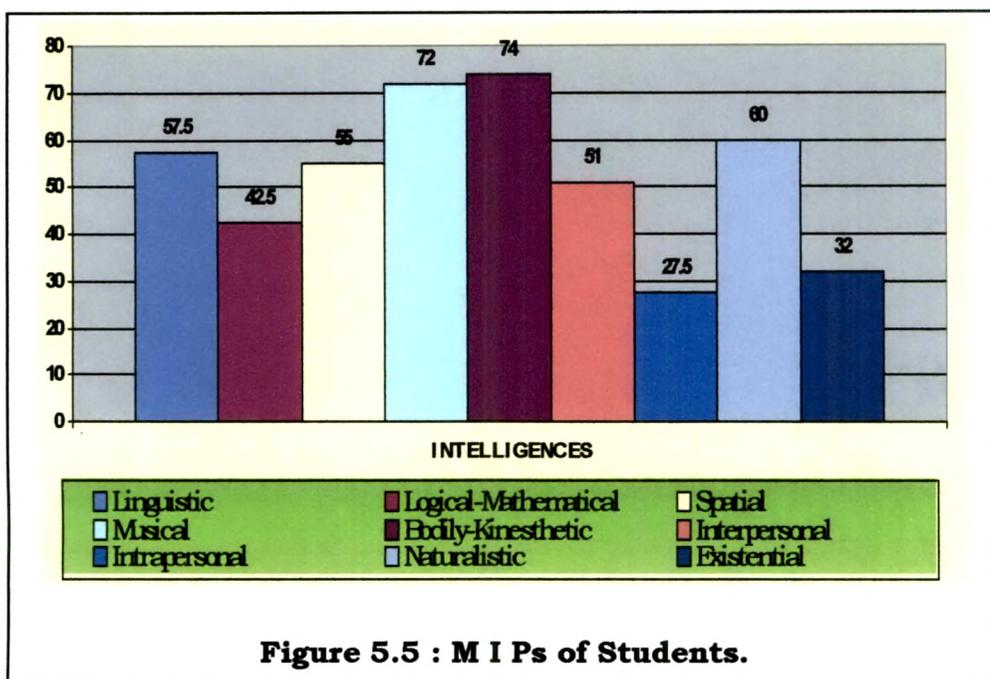
Sl.No.	INTELLIGENCES								
	A	B	C	D	E	F	G	H	I
01.	50	40	60	90	80	50	40	60	40
02.	60	30	50	70	60	60	30	70	20
03.	70	20	40	80	70	50	20	50	30
04.	60	50	50	60	80	60	30	60	30
05.	50	30	60	60	60	50	20	80	20
06.	60	50	40	70	80	50	20	60	30
07.	80	30	50	60	70	40	30	50	40
08.	30	60	60	70	80	40	40	60	50
09.	40	70	70	60	50	50	30	50	20
10.	50	40	60	70	70	70	20	60	40
11.	60	30	70	80	90	60	40	50	40
12.	70	30	70	70	80	30	20	60	40
13.	50	40	50	90	80	50	30	70	20
14.	50	80	60	70	80	70	30	50	40
15.	60	40	60	80	80	40	20	60	20
16.	80	40	30	70	80	50	20	70	30

Table 5.3: M I Ps of Students.

Abbreviations:

- | | | |
|-------------------|--------------------------|-------------------|
| A = Linguistic | B = Logical-Mathematical | C = Spatial |
| D = Musical | E = Bodily-Kinesthetic | F = Interpersonal |
| G = Intrapersonal | H = Naturalistic | I = Existential |

From the data tabulated in Table 5.3, a summary Bar Graph of the students was drawn, which is presented in Figure 5.5 here below:



5.6 INTERPRETATION OF THE MIPs OF STUDENTS

The summary MIP of the sample students indicates that the intelligences are fairly well distributed among the students. Looking at the continuum of the MIP of the students, it may be observed that the natural preferences of the students are for the Bodily-Kinesthetic and Musical intelligences. The highest preference, 74%, was for Bodily-Kinesthetic intelligence. The next significant preference,

72%, was for the Musical intelligence. More than half, 60%, of them showed their proclivity towards the Naturalistic intelligence. Preferences for the Linguistic, Spatial, and Interpersonal intelligences were in between 55 and 61 percent marginally lower than these was the Logical-Mathematical orientation of the students. The least preferred intelligence was the Intrapersonal intelligence. And the students showed just a little more preference for the Existential intelligence than the Intrapersonal intelligence.

Thus, the MIP of the students indicated that the natural preferences of the students were in favour of the Bodily-Kinesthetic, Musical, Naturalistic, Linguistic, Spatial, Interpersonal, Logical-Mathematical, Existential and Intrapersonal intelligences in that order. Hence, if the students had to learn with ease, then the instructional methods too were needed to be organized accordingly. Teachers ought to employ teaching activities/approaches that were in line with the natural preferences of the students. Also, so that the students improved upon their preferences, especially, for the Intrapersonal and Existential intelligences appropriate approaches could be adopted by the teachers. Keeping in mind the preferences of the students, the teachers ought to help students enhance their stronger preferences still further. At the same time efforts are to be made by the teachers towards providing suitable atmosphere and opportunities for the students to improve upon their weaker preferences.

5.7 CORRELATION BETWEEN THE MIPs OF TEACHERS AND STUDENTS

Having discussed the MIPs of the teachers and students separately now, the MIPs of both the groups are treated together. This is done to see if there were any correlation between the two because the natural preferential orientation is bound to affect their instructional methodologies. Further, a comparison of the two would also throw some light as to whether or not the instructional methodologies were in resonance with the natural preferential orientations of the students. The comparative study of and subsequent discussion on the average MIPs of teachers and students is presented here below, in table 5.4.

Sl. No	INTELLIGENCES	TEACHERS	STUDENTS	CORRELATION (Rank Difference)
01	Naturalistic	84	60	
02	Bodily Kinesthetic	75	74	
03	Musical	64	72	
04	Linguistic	60	57.5	0.87
05	Interpersonal	55	51	
06	Existential	54	32	
07	Spatial	48	55	
08	Logical Mathematical	42	42.5	
09	Intrapersonal	32	27.5	

Table 5.4 : Comparative MIPs of Teachers and Students

5.7.1 DISCUSSION ON THE CORRELATION OF THE MIPs OF TEACHERS AND STUDENTS

Data presented in table 5.4 indicate certain common features as far as the natural preferences/orientations among, both, the teachers as well as the students. Except for the scores, the order of the natural preferences for intelligences among the teachers as well as the students seem to be the same. While Naturalistic intelligence is the top naturally preferred intelligence among the teachers, it is the third among the students. Students' top natural preference goes for the Bodily-Kinesthetic intelligence followed by the Musical and then only the Naturalistic. Apart from this the order of natural preference of intelligences among both, the teachers as well as the students run the same course. The other change of order in the natural preference of intelligences is between the Interpersonal, Existential and the Spatial. Students score higher in the Spatial intelligence than their teachers while the teacher score higher in Interpersonal intelligence than their students. Apart from these, the order of preference remain the same. Teachers scoring higher in the Existential intelligence than the students may be due to the factors such as age, maturity, and experience. Similarly, the case of the Bodily-Kinesthetic intelligence being the top natural preference among the students may be attributed to their age.

The Rank Difference correlation between the natural preferences of the teachers and that of the students at 0.87 is indicates that there is a high degree of correlation between the two.

The commonality observed in the natural preference of intelligence among the teachers as well as the students some academic significance too. The natural preference for the Logical-Mathematical intelligence comes way down the order for both the groups. For the teachers, it is the second last naturally preferred intelligence and so it is with the students. The same trend is observed for the Intrapersonal intelligence. It is a small wonder therefore as to why the students perform poorly in Mathematics and Physical Science. These being their least naturally preferred intelligences, the teachers could hardly be expected to motivate their students in subjects like Mathematics and Physical Science. Also since the Intrapersonal intelligence is the least naturally preferred intelligence among the teachers, they could hardly involve their students in the processes whereby students could learn about themselves.

Further, the high natural preferences for the Bodily-Kinesthetic intelligence among both the teachers as well as the students could open a totally new world of classroom experience. Lots of hands-on exercises and physical activities could be used in the classroom by the teachers. Similarly, introduction of music, rhymes, rhythms etc. in the classroom would not be a bad idea at all since the students show high natural preference for the Musical intelligence and the teachers too have rather high natural preference for it.

What draws the attention here is the Naturalistic intelligence. Although it is the top naturally preferred intelligence among the teach-

ers, there is mighty little done in the classroom utilizing it. It is the third naturally preferred intelligence among the students. Therefore, it is expected that they would not be averse to class interaction characterized by the Naturalistic Intelligence. The absence of naturalistic elements in the classroom needs to be explored. Perhaps the teachers are not utilizing their best natural preference. Could it be that they are not aware of the enormous academic potential and implications of their own natural preference?

5.8 DATA COLLECTED FROM THE UNSTRUCTURED INTERVIEWS AND ANECDOTAL RECORDS PRIOR TO THE INTERVENTION PROGRAMME.

Data collected from the Unstructured Interviews and Anecdotal Records of the students have been combined together for their analysis as they were found similar, supporting, and complementing each other. While the unstructured interviews of the sample students were conducted in two phases; one prior to the intervention programme and the other during the intervention programme, Anecdotal Records were kept during the intervention programme. Data collected from these interviews were first analyzed separately and then their analysis were compared subsequently.

In the field of education, it is generally accepted that for his/her over all growth and development, a child needs not only the school, but in fact the whole society. Teachers in the school, parents at

home and neighbours in the society, all contribute to the wholesome development of a child. Apart from the physical safety and protection, Daniel (2005) claimed;

No child can grow in a vacuum. He needs all the vital elements in his environment to help him to grow, to develop, to become complete, and in short, to possess integrity... In a child's life who else but teachers and parents have the enormous responsibility of creating wholesome individuals! (P 29).

Although the purpose of the unstructured interview was to collect data so as to be able to describe the students in the M I way, it was also judged necessary to get to know their background, the context of the students. Therefore, the questions during both the interviews revolved around parents' support and encouragement, family and social atmosphere, their future aspirations and plans, problems and difficulties experienced by them, steps adopted to overcome those hurdles, school atmosphere, their self concepts, teachers' contributions in their lives, things and subjects they liked and disliked most in the school and in their teachers and why, teachers' attitude towards them, their study habits, and their attitudes towards their peers, teachers and education in general.

Data collected from the informal interviews of the students and the Anecdotal Records prior to the intervention programmes have been tabulated. The areas/items have been summarized under the titles,

Parental concerns about the education of their children, Social atmosphere, Students' aspiration, their self concepts, attitudes of the teachers and their relationships with students as perceived by the students, peer cooperations and the students' awareness of their learning styles. The responses of the students have been categorized under very good, good, average, poor and very poor. There were sixteen students in the class and all of them have been interviewed. The data prior to the intervention programme under the above mentioned items is presented in a tabular form in the table below, Table 5.5:

Students' Response Areas of study	Students' Response				
	V. Good	Good	Average	Poor	V. Poor
1. Parental concern	01	03	03	07	02
2. Social Atmosphere	00	02	08	05	01
3. Students Aspirations	01	02	05	06	02
4. Self concept	00	01	07	05	03
5. Attitudes of teachers					
i. Teaching	01	03	06	04	02
ii. Relationship	00	04	08	03	01
6. Peer Cooperation	00	02	04	08	02
7. Awareness of personal Learning Style	00	01	02	10	03

**Table 5.5: Students' Profile
Prior to the Intervention Programme.**

5.8.1 ANALYSIS OF THE DATA

5.8.1.1. PARENTAL CONCERNS

Out of the sixteen students constituting the sample of study, only one experienced the parental concern the best. He was provided with a separate room in the house for his study. His parents regularly inquired about his study, checked his home assignments, and ensured that he had a good atmosphere for his study. Rarely was he asked to help out in the household chores. That too only when it was absolutely necessary. He received constant support and encouragements from his parents. Three felt that their parental concern about their education was good while the equal number of them experienced their parental concern towards their education as average.

But as many as seven felt that their parents' concern towards their education was poor. They said that their parents hardly bothered about their education. They checked neither their studies at home nor did they ever inquire about it from the teachers in the school. So much so that they did not even bother to check the Report Cards of their children at the end of the school term end examinations.

And there were two who had nothing positive to say as far as the parental concern about their education was concerned. Except for the timely payments of fees in the school and giving of the pocket money, their parents showed no interests in their education. These two were found absent in the school regularly. And when they did

come to the school, it was reported from the school office that very often they ran away from the school before the end of the school hours.

5.8.1.1.1 DISCUSSION

With the exception of just one, all the others provided their children with a separate study room with the basic infrastructure such as lights, table and chair in their houses. The parents took care to pay the fees in the school on time and all of them gave their children pocket money. All the parents arranged for tuition classes for their children after the school hours, some of them on a regular basis while a few, (three), only just before the examinations. All the parents asked their children to help out in the household works whenever needed. The girls were more involved in the household chores than the boys.

Except four, the rest of the students said that their parents generally did not inquire about their schooling. As far as the home assignments were concerned none of the parents asked their children whether or not they were doing their home assignments regularly. In fact the students were unanimous in saying that once they were in their study room their parents did not come there at all. They said that they were left alone. None of the parents ever met the teachers of their children in the school and discuss about the education of their children with them. However they often met them

outside the school informally at different places. There were some of them who did not even bother to find out if their children went to the school at all, whether they attended classes regularly or not.

There was another common practice among the parents. Just before an examination as well as during the examinations parents did spend time with their children. They made their children study at home. They ensured that their children went out neither to play nor for any kind of socializing. Some of them even accompanied their children to the school and after the examinations brought them back home with them.

There was only one parent who spent a lot of time with the child. He spent time motivating and encouraging his child to excel. He constantly tried to instill in the mind of the child that without a good education there was no future really. This is how the student reported his father telling him; "My dear child, what is important is the solid foundation. You are provided with the opportunity now. Make the best use of it. We will do whatever it takes to provide you with the best of opportunities. We are willing to sacrifice everything for your education". This was the only child who experienced constant support and encouragement from his parents.

5.8.1.2 SOCIAL ATMOSPHERE

Exactly half of the students constituting the sample of the study felt that the general social atmosphere was just *average* as far as

providing inspiration to them for their studies was concerned. They could not say that the social atmosphere challenged them in any way for higher studies. Even the opportunities it provided did not appear to them attractive. Further these students felt that the general social atmosphere was not really conducive for personal studies at home. Frequent and numerous social gatherings/celebrations with loud music accompanying them did not help them do their personal studies at home. In fact these celebrations and gatherings with loud music often, the students felt, distracted them from their primary duty of study. Because of these, five of the students constituting the sample of study chose to label it as *poor* while one said it was *very poor*.

5.8.1.2.1 DISCUSSION

Among other things, numerous celebrations of one kind or the other right through the other, loud music all around especially in the evenings, and the availability of an easy money characterizing the general social atmosphere can hardly be a source of motivation for the students. Celebrations by themselves are fine but they do become sources of distractions for the students. Similarly, when the students see how easy money can be made, it is quite reasonable for them to neglect their study. Various kinds of government loans made available to people are undoubtedly praiseworthy but what makes the practice undesirable is that most of the time they are waved off. Students are well aware of this practice. And so, it is quite natural for them to neglect their studies. As Charles (1999)

contends, "Schools always reflect the nature of the society they serve. When society is humane, gentle, and caring, so are students in the schools. When society is hostile and uncaring, students behave in accordance." Students' ratings of the general social atmosphere are justifiable.

5.8.1.3 ASPIRATIONS OF THE STUDENTS

Only one of the sixteen students constituting the sample of the study had definite plans for future. It was clear in his mind as to why he was studying. Not only that, he also was aware of the fact that if he did not take his study seriously in the school, he would not be able to do anything worthwhile later in life. Therefore he was regular in attending classes as well as he often did more than what the teachers had asked the students to do as their home assignments. Two of the students constituting the sample of the study had future plans but not so clear as the first. Nevertheless these two too were taking their studies seriously. What marked them different from the first is that the efforts that they were making were not according to the aim/goal they had. Five of them aspired big but did not work accordingly. They said they would see to the future's plan after they had passed class X. They said, to prepare themselves when they were only in class VIII wasn't realistic. The rest of the students practically had no concrete plan. They were in the school because their parents had put them in it. Also because all other boys and girls of their age from their localities went to schools

and they did not wish not to be going to school. For them, even to have taken admission to this particular school, (the school chosen for this study) was mere coincident; their parents admitted them there because the school happened to be the nearest to their homes and it was affiliated to the Indian Council of Secondary Education, (ICSE). (To have their children study in the schools which are affiliated to the ICSE board is a matter of pride among the parents). Otherwise these students went about their education in a very much routine manner. The only visible, as it were, aspiration these students had was to pass class X somehow. Thus these students engaged themselves in study accordingly.

5.8.1.3.1 DISCUSSION

Aspirations of the students in general are rather very low. This could be seen as the cumulative effect of the poor parental concerns and the absence of any serious motivating force from the society. As has been discussed in the earlier two sub sections (para. 5.8.1.1 and 5.8.1.2) students seem quite content with the now and the future is too far to plan for! The low aspiration also snowballed in the low academic achievements of the students. Students do not feel the need of hard work. In order to lift the levels of aspiration among the students, it is felt by the researcher that the parental concerns towards the education of their children would have to be improved. Parents would need to instill in the minds of their children that they are interested in their education. In other words, parents would

need to provide the basic motivation to their children. Secondly, even the societal atmosphere would need to become more challenging. A sense of competition would need to be made visible to the students. This would sow the seed of urgency in the minds of the students; this probably would help reduce the prevalent mind set among the students of general callousness.

5.8.1.4 SELF CONCEPT OF THE STUDENTS

Data represented in table 5.5 indicate that only one student from the sample of the study had 'good' self concept. One less than half the sample said that their self concept was just about average. Five of them expressed it as poor while three of them rated their self concepts as very poor.

5.8.1.4.1 DISCUSSION

Students appeared quite puzzled when asked about their self image, and self knowledge. Concepts like self discipline, self image/ understanding, self knowledge, self confidence etc. sounded quite new to them. Some of them were uncomfortable even talking about themselves. Only one of them spoke quite confidently about his strengths and weaknesses. And he was both sure of and consistent about what he was speaking. Over the years he had a fairly good knowledge of himself. And he invested his energy in the tasks that he knew he was good at and avoided wasting his energy in the tasks he knew he was poor. His areas of interests matched his

strengths. Even his dreams and aspirations were in consonant with his strengths.

As many as seven of them out of sixteen somewhat knew their strengths and weaknesses. However, they were a little confused as their dreams and aspirations did not often match with their strengths and weaknesses. Even their dreams and aspirations were not in accordance with their academic performances. For example, a few of these said that they would like to be doctors in future, but in reality they disliked Science and Mathematics. Two of these said they wanted to be Actors in films. But till date they had neither participated in any public performances, nor had they acted/danced/sung in any of the school programmes. These expressed their self-confidence differently: "I have no difficulty or problem performing on a stage, either singing or dancing or acting for that matter. I feel very comfortable doing such things. In fact, I enjoy doing such things"; "I am not ashamed of my hair style or dressing"; "I hardly think of what others might say about me" etc. Whereas, observations revealed they conducted themselves very confidently so long as they were in a group consisting of the same caste. As soon as they were among the heterogeneous caste group, their self diffidence was obvious; they were subdued and behaved meekly.

The rest of the students constituting the sample of the study had practically no clarity about their strengths and weaknesses. Their

self-confidence too were poor and very poor. Although some of these sang extremely well, (when they were among themselves), they did not come forward for any public performance. Whenever they were offered with the opportunities, they declined the offer instead. They often fell sick just before the examinations. May be they suffered from the examination phobia!

5.8.1.5 ATTITUDES OF THE TEACHERS

Data collected from the unstructured interviews of the students on the attitude of the teachers towards them have been categorized into two parts, namely, according to their teaching and according to their relationships with the students. These data are the attitudes of their teachers as perceived by them.

5.8.1.5.1 TEACHING

While rating the quality of teaching, the parameters kept in mind (questions asked) were, the art of explanation, handling of students' interventions, classroom management, creating opportunities for students' involvement, use of teaching methodologies/aids, creativity by the teachers in the classroom in transacting the lessons, their main concerns, focussing, and their general preparations for the class. Students expressed their opinions about the teaching of their teachers in two different categories. About the Language, Arts, and Mathematics teachers they said that once in the classroom, they beat around the bush. Their teachings were monotonous and

boring most of the time. Only once in a while were they creative involving the students as much as was possible. They were almost all the time concerned about completing the syllabus. When asked some questions by the students, they invariably tended either to evade or defer them for the next day. This was even more glaring, when the students sought clarifications on matters not clear to them. Most of the time they repeated what they had already said or re-read the lines from the textbooks. These teachers, in general, took questions and interventions by the students as something disruptive.

Whereas, about the teachers teaching Geography and Biological Science, at least three of them said that those teachers were good. They taught well. Their explanations of the subjects were good. The way they explained the topics made it quite easy for them to understand. They hardly got angry with them when students asked them to explain the topics again. They appeared before the students quite relaxed. Students felt that their teachers were at home, both, with them as well as with the subjects. When asked as to what could be the reason for such a difference among those teachers, students replied that those teachers were trained whereas the others were not. Those teachers were punctual and helpful to the students. One the students said clearly that he did not hesitate at all in approaching these teachers for help and clarification even outside the classrooms.

Statistically, (refer to table 5.5 on page 137) when the overall responses of the students about the art of teaching of their teachers were categorized, it was found that only one student was of the opinion that the teaching of his teachers was very good, three of them preferred to rate their teaching as good, whereas six of them said it was average. Four of them felt that their teaching was poor and two of them said that it was very poor.

5.8.1.5.2 TEACHERS' RELATIONSHIP WITH STUDENTS

Keeping in mind their availability to them during and after the school hours, their helpfulness in matters both academic and non-academic, their concerns for them, their approachability, and their overall rapport with them, students were unanimous on one point that the relationship of their teachers with them wasn't *very good*. On the whole, four of the students said that the relationship of their teachers with them was *good*. They were friendly and helpful. But they were quick to add that none of teachers liked being approached after the school hours for any kind of academic matters. Exactly half of the students were of the opinion that the relationship of their teachers with them was *average*. There were four students who were of the opinion that their teachers' relationship with them was *poor*. Whereas there was at least one who said that the teachers' relationship with students was *very poor*.

5.8.1.5.2.1 DISCUSSION

There are many factors, such as, intellectual maturity of the stu-

dents, relevancy and presentation of the subject matter etc., that lead to the effective teaching-learning process. Relationship of the teachers with their students is one of them. Depending upon the kind of relationships/attitudes teachers have towards their students, students would learn from them accordingly. A cordial and caring relationship/attitude of the teachers towards their students would go a long way towards the effective learning of the students. By showing concerns for their students, teachers can definitely motivate them for higher learning. Teachers can also create such atmospheres wherein the students would naturally feel drawn for higher learning. As the data in table 5.5 indicate the teachers' relationship with their students as average. This could not be said to be an encouraging and motivating force for the students.

5.8.1.6 PEER-GROUP COOPERATION

Peer-group cooperation was evaluated based on the responses of students constituting the sample of the study on matters of group/team works, sharing of class notes, clarifications from the peers, group discussions, and helping each others. As the data in table 5.5 show, none of the students was of the opinion that their peer-group cooperation was *very good*. Only two of them said that it was good and four of them preferred to rate it as average. Exactly half of them (08) said that it was *poor*, while two of them outrightly said it was very poor. Those of them who said that the peer-group cooperation was either poor or very poor accused their teachers saying that they

did not provide them with opportunities for group works. At the same time they acknowledged that even they did not take initiatives in group learning. Except for the activities that naturally demanded group cooperation, like various competitions, students did not engage themselves in any kind of group discussion in or sharing of academic matters. Each one was concerned about him/herself. Even a thing as small as sharing of class notes with their companions was non-existent. Students expressed their lack of awareness about the merits of group discussion and cooperative learning. Group discussion was considered by most of the students as useless and a waste of time. Most of the time even the small group projects were not appreciated by students.

5.8.1.6.1 DISCUSSION

Peer group cooperation among the students was seen to be low in general. The main reason for this being low was the lack of awareness of the merits of the peer group/ cooperative learning among the teachers themselves. And so, being unaware themselves, the teachers could not really show their students the merits of cooperative learning. They hardly engaged their students in any form of peer cooperations. Therefore, for the poor peer-group cooperation among them, the students could not be blamed. Teachers would need to take the initiative in fostering the spirit of peer group cooperation. Also it is the teachers who would need to create atmospheres and situations where the students would naturally feel the need of peer group cooperation.

5.8.1.7 AWARENESS OF THEIR LEARNING STYLES

Majority of the students showed poor and very poor awareness of their learning styles. They were not even aware of how they learnt best. As the data in table 5.5 show, only one of the students was aware of his learning style. Two said their awareness of their learning style was *average*. Whereas, as many as ten of them said they were not sure how they learnt best. Three of them went on to say that they did not know about learning styles in general nor were they aware of how they learnt in particular.

5.8.1.7.1 DISCUSSION

Lack of awareness of their learning styles could be attributed to the fact that although the MIPs of students' prior to the intervention programme, (refer Sec. 5.5) suggested that the students' preferential orientations were towards Bodily-Kinesthetic, Musical and Naturalistic, in that order, they did not reflect on their learning styles. Further, they were not exposed to various of learning situations. Teachers were content with the normal "lecture method" of transacting their lessons. Lack of initiatives from the teachers in introducing other methods of learning deprived the students of coming to know their natural preferential styles of leaning. Introduction of other teaching methods by the teachers, use of better teaching aids etc. could make the students think about their preferential styles of learning. In other words, probably the exposure aspect could lead to the awareness of personal styles of learning among the students.

5.8.2 ANALYSIS OF THE DATA AFTER THE INTERVENTION PROGRAMME

During the intervention programme, together with the Unstructured Interviews of the students, Anecdotal Records, and Participative Observations were used for the purpose of data collection. Responses of the students as well as the data from the Anecdotal records and Participative Observation of the researcher during and after the intervention programme have been collated under five point scale of very good, good, average, poor, and very poor. Having collated them under the above mentioned five scales, they are presented cumulatively here below in a tabular form, (Table 5.6).

Students' Re- Areas of study	V. Good	Good	Average	Poor	V Poor
1. Parental concern	04	05	04	02	01
2. Social Atmosphere	01	04	08	02	01
3. Students Aspirations	02	07	03	02	02
4. Self concept	00	04	07	03	02
5. Attitudes of teachers					
i. Teaching	03	09	02	02	00
ii. Relationship	02	06	05	02	01
6. Peer Cooperation	04	05	04	02	01
7. Awareness of personal Learning Style	01	08	04	03	00

Table 5.6 : Students' Profile After the Intervention Programme.

5.8.2.1 PARENTAL CONCERN

Data indicating the Parental Concerns as perceived by the students after the Intervention Programme have been presented in table 5.6 above. Four of the students responded to the question on Parental Concerns as very good while five of them said it was good. There were four who perceived their parental concerns as average. But there were two who said it was poor and one could not say anything positive about his parents' concerns towards his education. Without any trace of hesitation he said it was very poor.

5.8.2.1.1 DISCUSSION

Although the parents were not directly involved in the intervention programme the data indicate that they were indeed affected by the intervention programme. Growing concern among the parents for their children's education was probably due to the change of behaviours among the students. The sudden change in the over all behaviours of the students first intrigued the parents. But when the parents saw their children taking their studies seriously, they grew curious. Some of them even inquired from the school authorities about the changes in the behaviours of their children. And when the school authorities shared with them about the modified instructional strategies being employed in the school, they felt relieved.

As the data indicate, after the intervention programme, as many as thirteen out of sixteen students constituting the sample for the

study experienced average and above average parental concerns. These students were able to perceive quite clearly that their parents showed a great deal of interests in the education of their children. Practices of the parents such as spending time with their children in the evenings, talking about the activities in the school, taking keen interests in their project works, and ensuring that their children had conducive atmospheres for personal studies etc. enabled the students to say that they were now enjoying parental concerns that were quite good. In this light, the fact that there was one student who expressed his parental concern as very poor and two who said that it was poor need to be taken with a pinch of salt! It is quite natural to have a few exceptions. Also the fault need not be of the parents alone. Perhaps these students too were to be blamed. For, in general, when the children do well in their studies, their parents do recognize their efforts. Ideally, therefore, the researcher should have explored this aspect. Unfortunately, however, due to the lack of opportunities, the researcher could not explore into this.

5.8.2.2 SOCIAL ATMOSPHERE

Responses of the students about their perceptions of the social atmosphere after the Intervention Programme have been tabulated in table 5.6. Data indicate that while exactly half of them, (08), perceived the social atmosphere as *average*, one each perceived it as *very good* and *very poor* respectively. Four of them said it was *good*

whereas two of them expressed it as *poor*. They said that the social atmosphere was conducive in the least for their study. Also they could hardly call it motivating them for study. However, there was found an appreciable difference in the responses of the students as far as the social atmosphere was concerned. The comparative data collected before and after the Intervention Programme have been presented in Table 5.7.

5.8.2.2.1 DISCUSSION

Social atmosphere is what the people in general create. To a large extent, both, parents as well as the students are responsible for creating the social atmosphere. As may be seen in the data, thirteen of the students expressed the social atmosphere as average and above. Just as certain behavioural modifications, like completing their home assignments, doing their projects well, enthusiasm for going to schools etc., among the students after the intervention programme affected the parents and initiated behavioural modifications in them, perhaps the combined behavioural modifications of the students and parents also affected the others. Business community, which some of the parents were part of, was definitely affected as it had begun stocking in its stores materials needed for the project works of the students. Further, some of the shopkeepers refused to sell items such as cigarettes and to serve beverages to the students. Glimpses of such a collected responsibility and social consciousness among the parents and business community of assisting the students in their educational activities may be attrib-

uted to the potential *contagious* effects of the intervention programme!

5.8.2.3 STUDENTS' ASPIRATIONS

As the data represented in table 5.6. indicate there were two each who expressed their levels of aspirations as *very good*, *poor*, and *very poor*. A little less than half, (07), of them said it was *good* whereas three of them rated it as *average*.

5.8.2.3.1 DISCUSSION

From the data indicating the Aspirations of the students it can be said that the students seemed aware of what they aspired for. Twelve of them rating their aspirations average and above suggests that they were not aimless at least. They were aware why they were studying and how they needed to prepare themselves for what they aspired. And the four whose level of aspirations were rated as poor and very poor respectively perhaps needed more time to realize their own responsibilities as students. It may also be that they did not receive enough motivation from their parents. It was possible that these students did not experience challenges or for that matter some shock treatments from the society in general! "Sweet contentment" may have lulled their aspirations.

5.8.2.4 SELF CONCEPTS OF STUDENTS

Students' responses weighed heavier in favour of those who expressed it as *good* and *average*, (refer to table 5.6). There were four

of them who said that their self concept was *good* while seven of them called it as *average*. Three of them preferred it to call *poor* while two outrightly called it as *very poor*. However, there was none who could say that his/her self concept was *very good*.

5.8.2.4.1 DISCUSSION

Of course there was a definite modification observed in the understanding of their self concepts among the students. They had begun to acknowledge their strengths and weaknesses. Yet it was observed that they appeared very confident when they were among other students who belonged to the same tribe/caste. In other words, as long as the interactions were in the homogeneous group their levels of self confidence was high. But when they had to interact with students who belonged to different tribes/castes their levels of confidence dropped down. When this observed fact was pointed out to them they readily accepted it. Thus it was seen that their self concept was not so pure, free from cultural and racial factors. Moreover, students did not have much exposures to and interactions with the people of other regions. Perhaps with the increased exposures to and interactions with people of different castes and regions the present scenario might be different!

5.8.2.5 ATTITUDES OF THE TEACHERS

Like prior to the Intervention Programme, data on the attitudes of

the teachers are being presented under two headings, namely their teaching and their relationships with the students as perceived by the students as well as observed by the researcher.

5.8.2.5.1 TEACHING

As many as nine of the sixteen students constituting the sample for the study said that the teaching of their teachers was good while three went on to state it to be very good. There were two who rated the teaching of their teachers as average. But there were two others who confidently said that the teaching of their teachers was poor. However, there was none to rate the teaching of their teachers as very poor. Those of them who said that the teaching of their teachers was poor did so because they found their teachers rather biased towards the brighter students of the class. According to them, their teachers did not pay sufficient attention to their needs, especially when they sought more clarifications on matters not so clear to them.

5.8.2.5.1.1 DISCUSSION

Data in Table 5.6 indicate that most of the students, (12 out of 16), found the teaching of their teachers good (09) and even very good (03) after the Intervention Programme. This indicates that after the Intervention Programme teachers were transacting their lessons in manners that were more according to the natural orientations of learning of the students. To be able to rate the teaching of their

teachers as good and very good, students must have found the classes interesting, clear and within their comprehension. Further, they would have found their teachers in the class addressing their needs and providing them with adequate clarifications to their queries whenever sought, thus paying individual attention to them. It is also possible that their teachers were better prepared for their classes which helped them employ instructional strategies that were creative. The two of them who found the teaching of their teachers 'poor' could mean either that they themselves did not come prepared for the class, or that they were slow in learning, or that they were being over critical of their teachers. Whatever be the case, although the opinion of these could not be ignored altogether, neither could they be taken as decisive, that is, that the teaching of their teachers was poor.

5.8.2.5.2 THEIR RELATIONSHIP WITH STUDENTS

As the data tabulated in table 5.6 indicate, ratings of the relationship of the teachers with students as perceived by the students varied from very good to very poor. There was one student who had no hesitation at all in stating that in his perception the teachers had a very poor relationship with the students. At the same time there were two of them who perceived the relationship of their teachers with students as very good. As many as seven of the students constituting the sample for the study found it to be good while five others called the relationship of the teachers with students as av-

erage. There were two of the students who preferred to rate the relationship of their teachers with students as poor.

5.8.2.5.2.1 DISCUSSION

Looking at the data it is quite difficult to arrive at any kind of conclusive opinion about the relationships of the teachers with their students. Although the opinions tend to swing in favour of the teachers, opinions as *poor* and *very poor* cannot be ignored. At the most what can be said is that the relationship of the teachers with their students was not really bad. However, this was an area they definitely needed to look into.

5.8.2.6 PEER-GROUP COOPERATION

Parameters considered in rating the peer group cooperation were two by two sharing, small group discussions, sharing of class notes, small group project works, seeking help from each other, and preparations of wall posters. Tools used for collecting data for the peer group cooperation were the Unstructured Interviews, class Observations, and Anecdotal records. Data recorded in table 5.6 indicate that four of the sixteen students constituting the sample for the study expressed that the peer group cooperation was *very good*. Five of them said it was *good* while four of them rated it as *average*. There were two who called it as *poor* and there was one who preferred to rate it as *very poor*. On the whole, those rating it as average and above numbered fourteen whereas just three of them rated it poor and very poor.

5.8.2.6.1 DISCUSSION

Data related to the Peer Group cooperation after the intervention programme as presented in table 5.6 suggest that the students had realized that none of them was self sufficient academically. Each one needed the help and cooperation of the other. Further, the data indicate that the students had begun to enjoy group learning. Group learning further highlighted the fact that each one of them recognized the strengths and weaknesses of the other. And while the strengths of individuals were utilized optimally, students tried to compliment the other in such a manner that no one was either sidelined or discriminated because of his or her weaknesses. In fact students helped each other in overcoming their weaknesses. Group learning also brought to light another very important aspect in the academic life of the students, namely that they had to begun to realize that they could achieve much higher goals by working in groups. Furthermore, since the students enjoyed learning in groups, shared their class notes with each other, selfishness among them had decreased.

Thus, it could be said that incorporation of the theory of Multiple Intelligences in the instructional strategy not only helped students in joyful learning in groups but it also helped remove selfishness from among them. Further, the instructional strategy incorporating the theory of Multiple Intelligences helped students in self-learning through projects. Achievements through the project works

and group discussions enhanced their self esteem and self confidence. The reality that no one individual can be intelligent in every field as each one is unique and differently intelligent and hence can contribute towards the achievement of the set goals in his/her own unique way can be driven home to the students. It also has inculcated among the students the spirit of sacrifice for the sake of the group. It can make the students more involved and focussed in their learning.

5.8.2.7 LEARNING STYLES

After the intervention programme the level of awareness of their personal learning styles had changed. Data tabulated in table 5.6 indicate that fifty percent of the students said that the awareness of their personal learning styles was *good*. One of them expressed it as *very good*. While four of them said that it was *average*. There were three who rated it as *poor*. But there was none who said it was *very poor*.

5.8.2.7.1 DISCUSSION

Being aware of one's preferential styles of learning undoubtedly has many advantages. It helps students in using their individual learning resources optimally. It also guides students in investing their resources effectively so that wastage of their precious time as well as energy may be reduced. Situations which otherwise normally would lead to frustrations has been minimized. With thir-

teen out of sixteen students reporting their awareness of their preferential styles of learning as *average to good* and *very good*, it may be concluded that they learnt more effectively now. And that in turn lead to their better academic achievements in the school, (See Table 5.8). Further, it helped reduce the instances of students' "misbehaviours" and students' indiscipline thereby help promote better discipline in the class and in the school in general. Students became active and responsible learners in the class.

5.9 COMPARATIVE REPRESENTATION OF THE STUDENTS' PROFILE

Having discussed the students' profiles based on their responses during the Unstructured Interviews before and after the intervention programme separately, it was felt appropriate that a combined discussion of the data were presented. Therefore, for an easy and quick reference to the students' profiles before and after the intervention programme, the combined data gathered before and after the intervention programme are now being represented here below in **table 5.7**.

Students' Response Areas of study	V. Good	Good	Average	Poor	V. Poor
1. Parental concern	01 (04)	03 (05)	03 (04)	07 (02)	02 (01)
2. Social Atmosphere	00 (01)	02 (04)	08 (08)	05 (02)	01 (01)
3. Students Aspirations	01 (02)	02 (07)	05 (03)	06 (02)	02 (02)
4. Self concept	00 (00)	01 (04)	07 (07)	05 (03)	03 (02)
5. Attitudes of teachers					
i. Teaching	01 (03)	03 (09)	06 (02)	04 (02)	02 (00)
ii. Relationship	00 (02)	04 (06)	08 (05)	03 (02)	01 (01)
6. Peer Cooperation	00 (04)	02 (05)	04 (04)	08 (02)	02 (01)
7. Awareness of personal Learning Style	00 (01)	01 (08)	02 (04)	10 (03)	03 (00)

Table 5.7 : Students' Profiles Before & After the Intervention Programme

Note: Figures in the **parenthesis** represent the data **after** the Intervention Programme.

5.9.1 DISCUSSION

A comparison of the data before and after the intervention programme shows that the instructional strategy incorporating the theory of Multiple Intelligences had brought about changes in the attitudes of the parents towards their children's education. And this change in the attitudes of the parents towards their children was attributed to the change in attitudes in the students. The fact that some of them had begun assisting their children in their works (home assignments and projects) on a regular basis, something which they hardly did prior to the intervention programme, showed that they had begun to show their concerns about the education of

their children. A graphical representation of the Parental Concern before and after the Intervention Programme has been shown below in Figure 5.6.

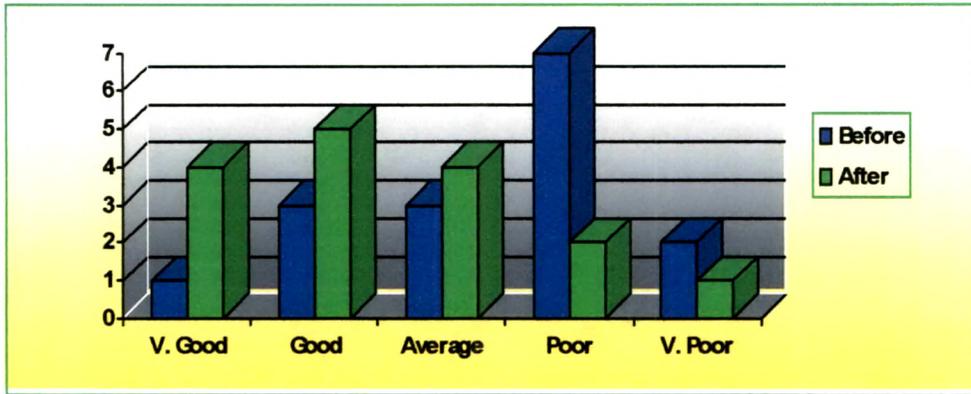
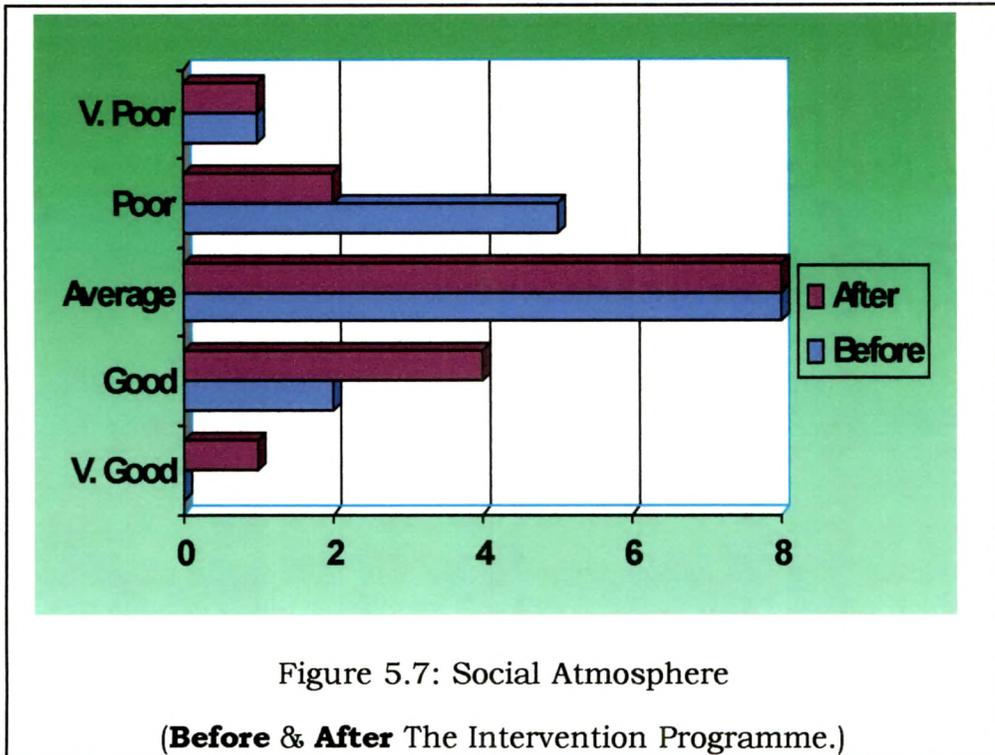
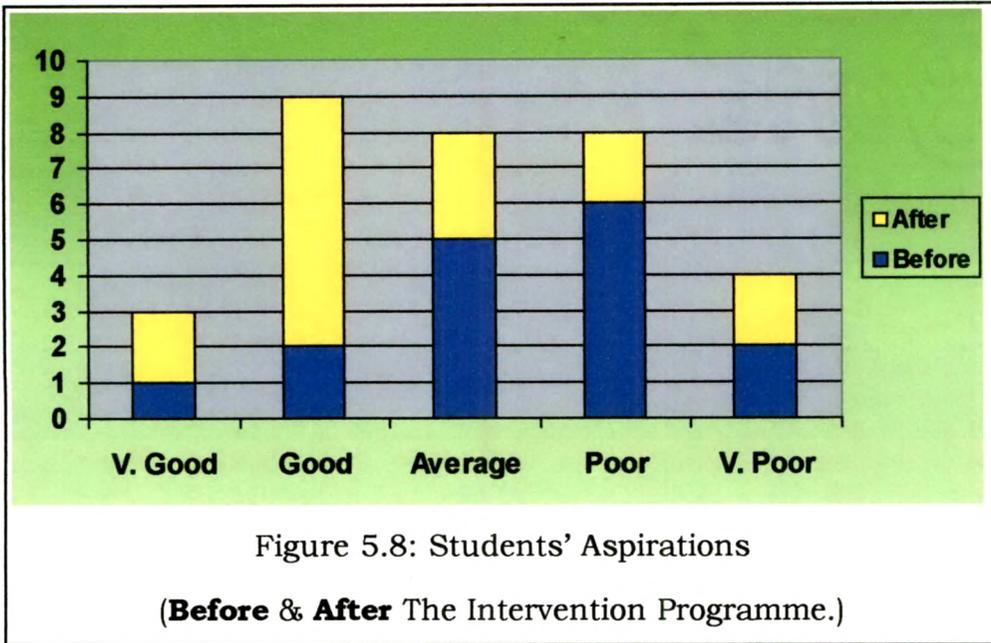


Figure 5.6 : Parental Concern
(**Before & After** The Intervention Programme.)

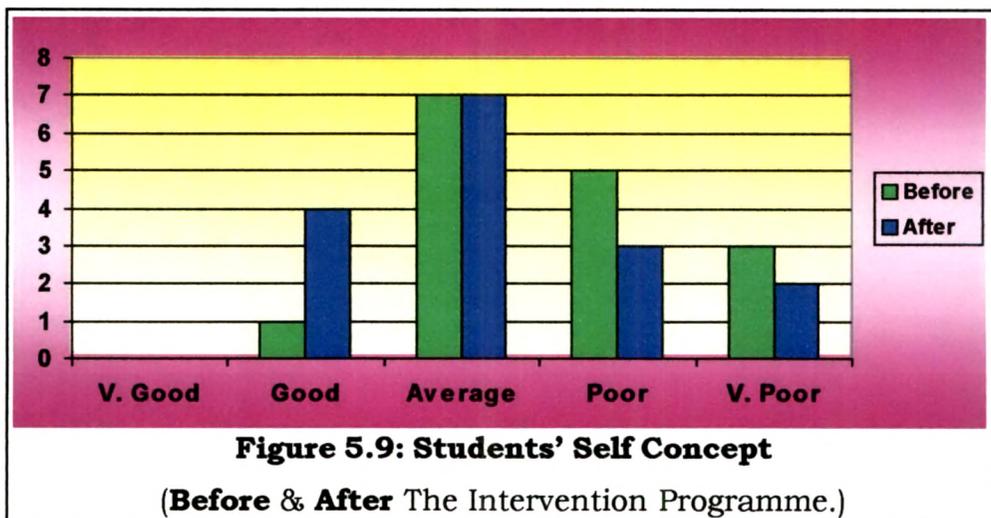
The general social atmosphere too had changed. The society had begun to appreciate the efforts of the children. This was evident from their changed concerns towards the students. Less noise in the evenings between five and seven o'clock in the society indicated that the society had become aware of its responsibility towards the education of its children. In the market too, though it definitely benefitted the shopkeepers, but at the same time it was beneficial to the students as well when they started providing articles needed for the project works. Graphical representation of the Social Atmosphere before and after the Intervention Programme is presented below in Figure 5.7.



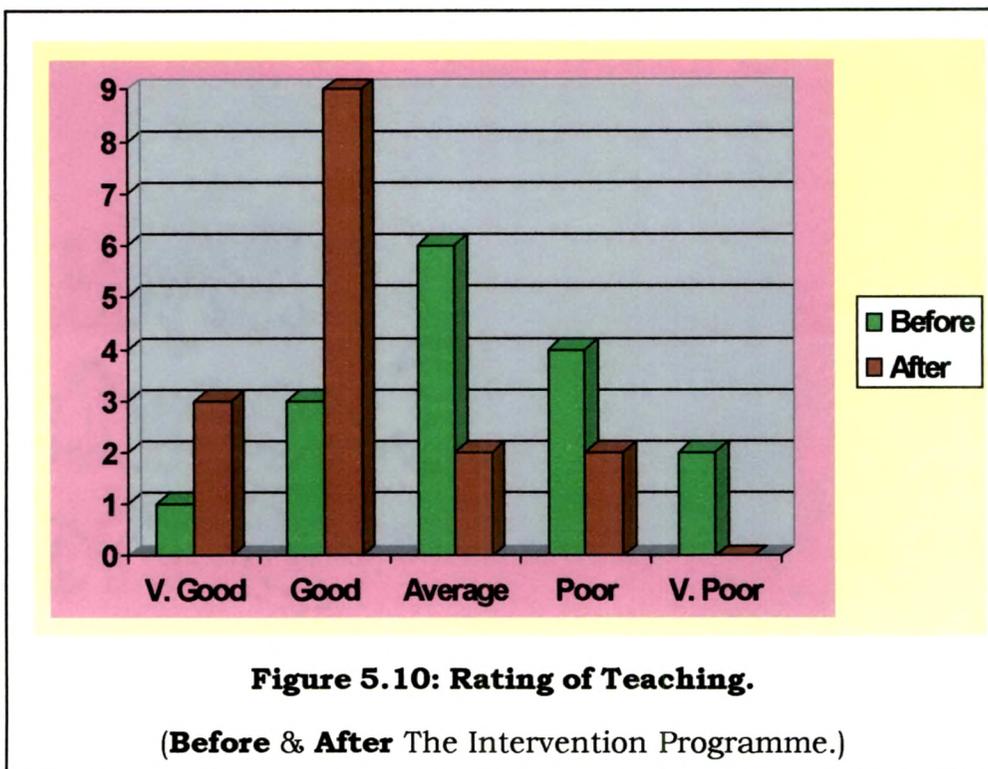
The aspirations of the students too had improved. They appeared now after the intervention programme a little more realistic about their future plans and hence their academic activities were focussed. They took their academic duties such as preparations for the class, their general attendance in the school, completion of home assignments etc. more seriously. Instead of waiting for class X, they had already begun to some extent planning their future and prepare themselves accordingly. A graphical representation of the Students' Aspiration before and after the Intervention Programme has been presented here below in Figure 5.8.



After the Intervention Programme, students seemed to be better aware of their strengths and weaknesses. Hence, they were in a better position now as to where they ought to invest themselves- their time and energy- fruitfully and effectively. A graphical representation of their Self Concept before and after the Intervention Programme is being presented here below in Figure 5.9.

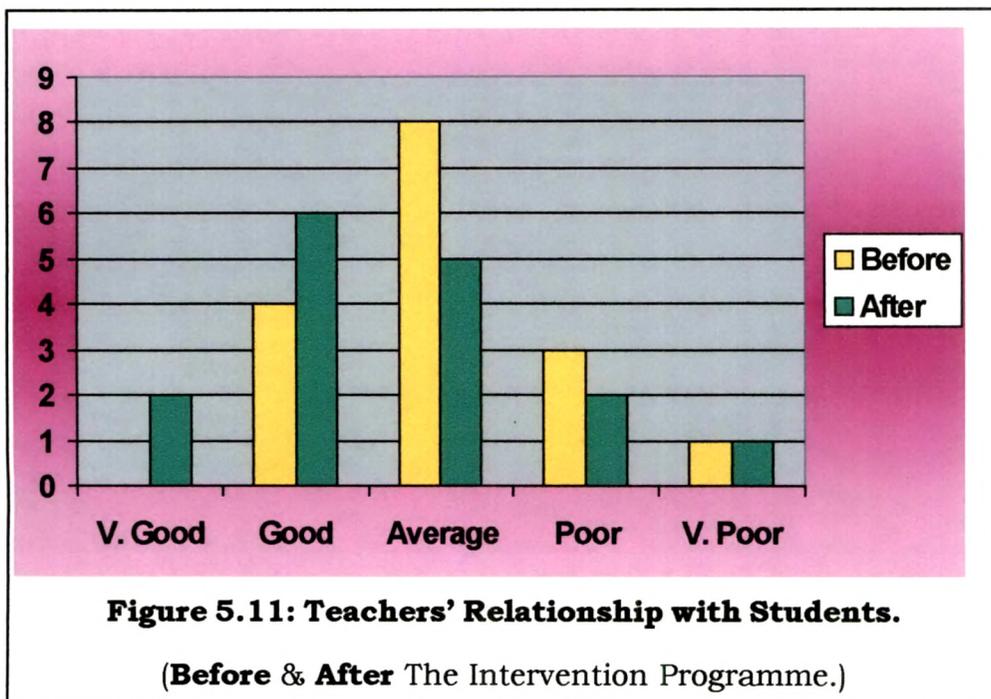


As the result of the introduction of the instructional strategy incorporating the theory of Multiple Intelligences, the teaching methodologies adopted by the teachers too had changed. Their teachings were planned and focussed. It was observed that there were more involvements of students in the teaching learning process. Students too participated quite actively in the class. When students were asked and guided to discuss certain topics in groups of four or more they were clear in their expressions. They discussed and shared their opinions with the group members freely. They seemed to enjoy one to one sharing among themselves. In the process of being able to express their ideas and views and to share what they had learnt and what they had not, students experienced themselves being more focussed in the class. Some of the hands-on exercises that the teachers engaged them in proved to be eye-openers to them. They confessed, "Whatever topics we learn through these exercises seem to be engraved in our minds". In fact, during the intervention programme as the teachers employed a variety of teaching methods, such as, hands-on exercises, group discussions, one to one sharing, role plays, demonstrations, real life objects being brought to the classroom, charts and models preparations by the students etc., these had opened totally a new world of experience for the students. The rating of the teaching of their teachers by the students before and after the Intervention Programme is presented graphically in Figure 5.10 below.



Further, the teachers appeared to be more concerned about the students. They often stopped during the class to find out whether or not the students had followed what they were teaching. Occasions of teachers getting angry with the students when the students asked questions or sought clarification were minimum. Even the manner and quality of presentations of the home assignment had changed. Teachers no longer asked the same old stereotyped questions. They were more creative and imaginative in giving home assignments. As a result, students too did their home assignments whole heartedly. All this resulted in giving a new academic atmosphere to the classrooms at the end of the year. The classroom walls were filled with creative and imaginative presentations of the

subject matter by the students in the forms of sketches, poems, charts, lyrics etc. which they had prepared as part of their home assignments. Apart from being colourful, these undoubtedly were rich and informative too. Teachers' relationship with the students as perceived by the students before and after the Intervention Programme is graphically presented below in Figure 5.11.



As the teachers engaged the students in small group decisions during the class more and more students expressed that they felt comfortable sharing their ideas freely with their companions. They not only shared during the group discussions in the class but they were also seen discussing outside the classroom. Most of the times they discussed about their project works. Students were also seen

sharing among themselves their class notes. When they were engaged in one to one sharing they shared with each other what they had understood and also what they had not understood quite clearly and sought help from each other on matters not so clear to them . Most of the time they were seen asking their friends for ideas for their project works.

The ones who volunteered to teach small subtopics in the class tried their best in giving extra information on the sub-topics that they taught which were not there in the text books. They said that seeking help from their companions was often better than seeking help from their teachers as they felt their companions understood their problems, struggles and difficulties better than their teachers. They said that seeking clarifications from their companions during the group discussions in the class was helping them a lot. Whenever there was any group project assigned to them they exchanged their views and ideas quite openly and freely. They often said that they wanted *their groups* to do well in the projects. The overall effect of the Intervention Programme on the Peer Group cooperation among the students was quite apparent. Data showing the effect of the Intervention Programme on the Peer Cooperation have been presented in Table 5.7. Graphically they are presented here below in figure 5.12.

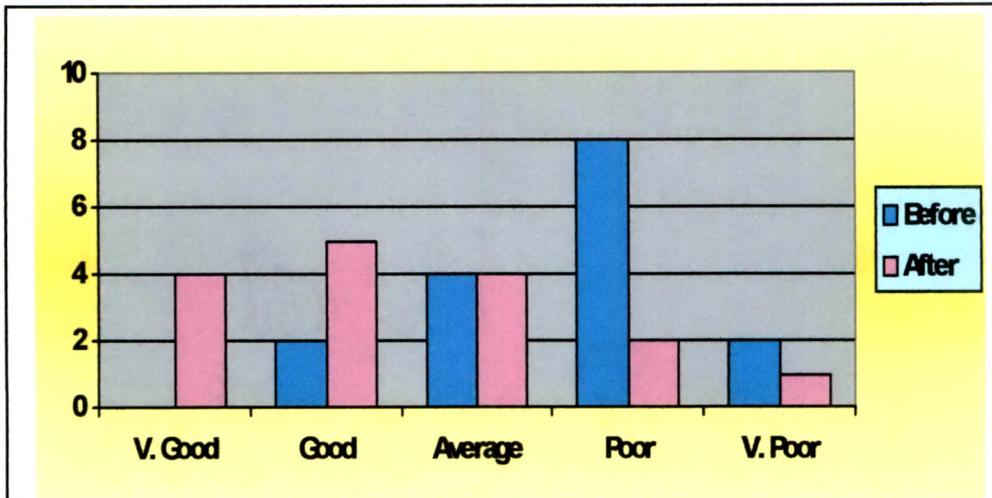


Figure 5.12: Peer Cooperation.

(**Before & After** The Intervention Programme.)

As the data in Table 5.5 indicate, students became better aware of their personal leaning styles after the Intervention Programme. Students' awareness of their personal learning styles before and after the Intervention Programme has been presented below in Figure 5.13.

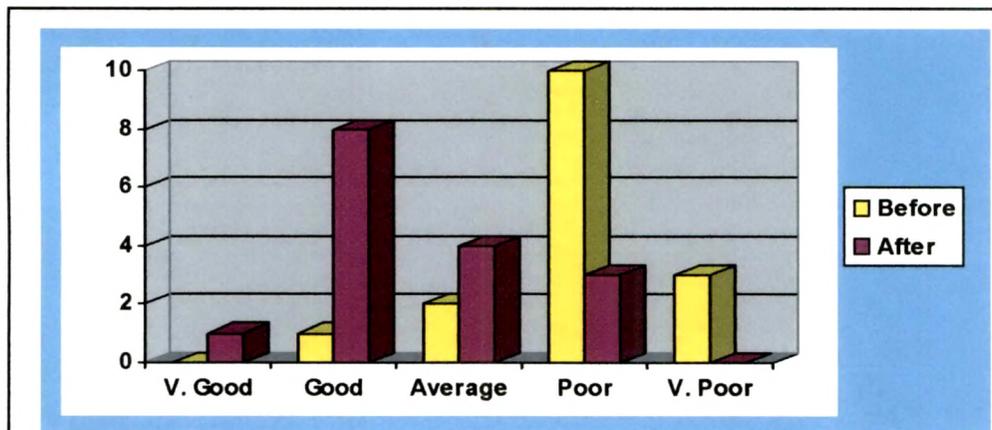


Figure 5.13: Students' Awareness of their Learning Styles.

(**Before & After** The Intervention Programme.)

5.10 ANALYSIS OF DATA FROM THE ACHIEVEMENT TESTS

Although the study wasn't a true experimental one, to assess the quantitative effect of the intervention programme, the scores on the final examinations at the end of standard VII and those at the end of standard VIII have been compared. The scores at the end of standard VII are treated for convenience as they are before the intervention programme as the pretest scores though technically speaking they are not. Similarly, those at the end of standard VIII are treated as the posttest score, as they are after the intervention programme though again technically speaking they are not. The terminologies Pretest and Posttest have been used here purely for the sake of convenience and their easy representations. These are not to be understood as per their terminologies. Further, t-test have been carried out to see if the implementation of the theory of Multiple Intelligences in the instructional strategy would affect the scholastic achievement of the students, (Research question No. 03). The quantitative data from these two tests have been tabulated below in Table 5.8. (All Scores are out of a maximum of 1000).

From Table 5.8 it is clear that except two students the rest of them have scored significantly higher in the Posttest than in the Pretest. On conducting t-test on the two sets of scores, it was found that the calculated value of the t score, t_c , is significantly higher than the table values, t_r , at both .01 as well .05 levels of significance.

SI No.	Pretest Score	Posttest Score	t_c	t_T at	
				.05	.01
1.	889	912	4.20	2.13	2.95
2.	674	801			
3.	661	743			
4.	689	801			
5.	482	494			
6.	589	601			
7.	734	773			
8.	798	880			
9.	490	481			
10.	845	860			
11.	594	690			
12.	587	600			
13.	491	485			
14.	604	644			
15.	687	712			
16.	740	794			

Table 5.8 : Achievement tests Scores.

While assessing the achievement of the students following instructions in the M I way, (Objective No. 3), it was found that achievement of the students following instructions in the MI way is significantly higher. But as the study was not a typically experimental one, and as the sample was not really divided into the Control and the Experimental groups, it might not be possible to attribute the higher achievements of the students purely to the instruction in the MI way. At the same time the higher achievements of the students following instructions in the MI way might not be rejected.

The study was carried out with the research question whether there would be any significant contribution of the theory of MI in the teaching learning process, (Research question No. 3). The answer to that question was found to be in the affirmative, that is, there was a significant contribution of the theory of MI in the teaching learning process.

The scores on the pretest and the posttest have been graphically represented below in Figure 5.14.

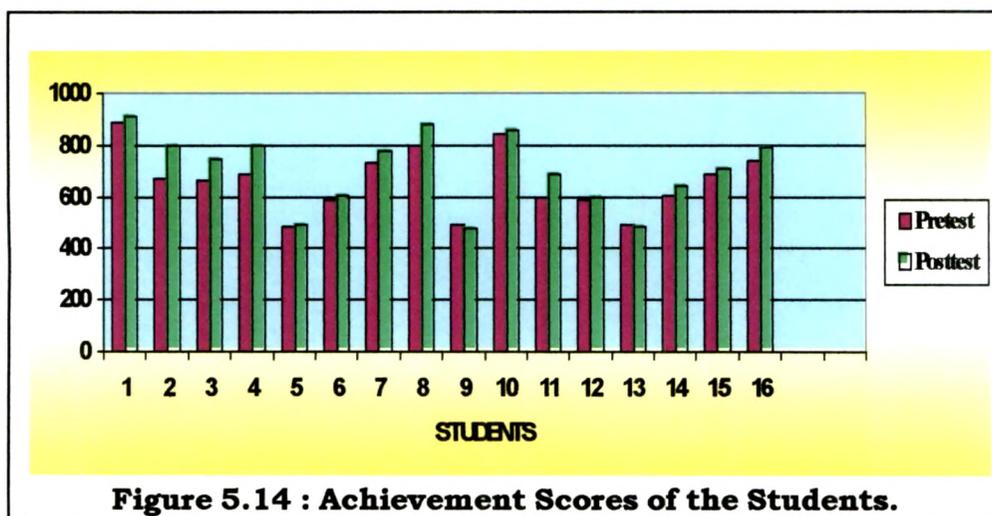


Figure 5.14 : Achievement Scores of the Students.

5.11 ANALYSIS OF DATA FROM THE MOTIVATION SCALE

In order to assess the motivational levels of the students, the adapted version of the Motivation Scale constructed and standardized by

Rathore and Panwar, (refer Appendix D), was administered to them twice. The first administration of the Motivation Scale was prior to the intervention programme and the second was at the end of the intervention programme. Data collected from these two administrations of the motivation scale have been tabulated in Table 5.9.

Sl No.	First Administration	Second Administration	t_c	t_T at	
				.05	.01
01	35	64			
02	40	58			
03	45	56			
04	42	62			
05	64	83			
06	48	56			
07	44	48	8.81	2.13	2.95
08	42	51			
09	40	55			
10	41	60			
11	36	42			
12	30	38			
13	28	46			
14	32	47			
15	39	53			
16	47	5			

Table 5.9 : Motivation Levels of Students.

The scores as presented in Table 5.9 show that prior to the intervention programme only one student scored 60 and above. That is to say, that only one student was motivated. Also there was one

who scored below 30. In other words, there was one who was fairly well motivated and one least motivated. The rest of them fell in the range between less motivated and motivated. All others scored in the range between less motivated and motivated. All others scored in the continuum between little and somewhat motivated. The result thus corresponded well with that of the CRCs and the Unstructured interviews of the students prior to the intervention programme. As revealed by the CRCs (sec. 5.1), students' interests and aspirations were pretty ordinary devoid of any higher aspirations prior to the intervention programme. Also as revealed by the Unstructured Interviews prior to the intervention programme, (Sec. 5.8.1.1 and 5.8.1.2), students' did not receive much motivation either from their parents or from the society in general.

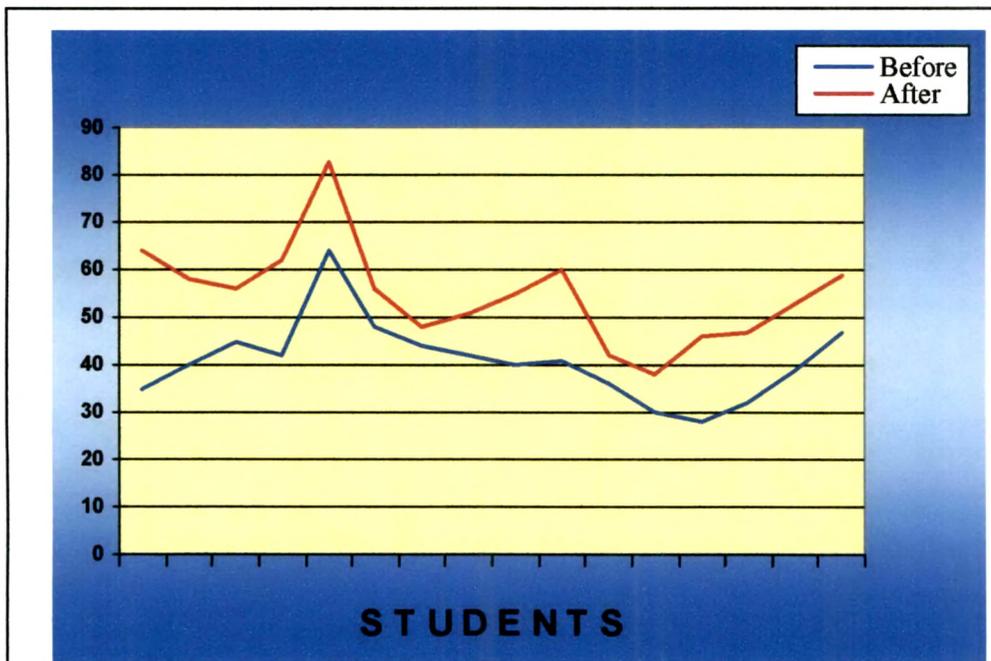


Figure 5.15: Motivation Levels of Students.

The scores after the intervention programme indicated a marked improvement in the motivation levels of the students. There was only one who fell in the 'little motivated' bracket. Otherwise all others scores well even to the extent of one of them falling in the 'highly motivated' group. The comparative motivational levels of the students prior and after the intervention programme is represented graphically above (Figure 5.15).

The graphical representation of the scores on motivation scale clearly shows that the post intervention programme scores were much higher.

To evaluate the improvement level in the motivation levels of the students due to the instructional strategy incorporating the theory of MI t-test was conducted on the scores of students in the Motivation Scale. The calculated value of 't' was found to be 8.81. This was tested at both .01 as well as at .05 levels of significance. As the figures in Table 4.5 show, the Table values of 't' at .01 and at .05 levels of significance are 2.95 and 2.13 respectively. The calculated value of 't' is greater than the two Table values of 't'. Hence, it is concluded that the motivation levels of the students improved significantly with the intervention programme.

5.12 PERCEPTION AND MOTIVATION OF TEACHERS

Data collected from the Unstructured interviews of the teachers,

Participative Observation of the classes, and Case study of three of the teachers were analyzed to assess the self perception of the teachers and their levels of motivation as teachers.

5.12.1 BEFORE THE INTERVENTION PROGRAMME

Prior to the workshop, wherein they were familiarized with theory of MI and its educational implications, the teachers saw themselves as “9.00- 3.30” employees. They came to the school just before 9.00 a.m. and carried on with the teaching till 3.30 p. m.. And with that their responsibilities were over. In the class too it was a one way traffic. They taught as a matter of routine. As they did that, they hardly bothered to find out if the students understood or not what they taught. Whether the students learnt anything or not that did not seem to be their concern. Of course they were friendly to the students, yet the progress of the students did not matter much to them. Their main concern was to complete the syllabus anyhow. They perceived themselves as mere employees of the school. To teach was their duty and that they fulfilled. To guide students, for example, they understood as not one of their prerogatives.

Another of their main preoccupation was their rights. Constantly they demanded from the school administration whatever they thought was due to them irrespective of whether they deserve them or not. The idea that the students were placed under their care, most of them somehow did not accept. What they scrupulously fulfilled was the teaching. They neither suggested anything to the

school administration for the overall improvement of the school nor did they point out areas that needed attention of the administration. Their participation in the general administration of the school was minimal. Except two of the senior teachers (who were close to the Principal), others did not really care for the school. The non-committal attitude of the teachers was so glaring that one would hardly miss that.

Sharing of various responsibilities among the teachers in the school too was bare minimum. Whatever little that they shared, they did that rather grudgingly. When it came to spend a little extra time after the school hours they showed their displeasures quite openly. Any activity to be done after the school hours meant lack of cooperation from the teachers. Exchange of constructive ideas and expertise among themselves was practically nonexistent. They interacted with each other at rather superfluous level. A few expressed even fear of tail-bearing to the Principal. Hence they preferred to be out of any discussion among themselves. Further, since most of them had joined the school rather recently they preferred to play the safe game. Even if they had good ideas and which they were definitely able to execute, the younger members preferred not to suggest them either to their senior colleagues or to the Principal. It was observed that the overall atmosphere among the teachers was one of suspicion.

As most of the teachers were young, fresh graduates, they had plenty of enthusiasm when they joined the school. But their enthusiasm died out within weeks of their joining. Their motivation too took a nose dive within no time. They neither felt committed to the students nor to the school. Thus, the overall motivation level of the teachers was rather low.

5.12.2 AFTER THE INTERVENTION PROGRAMME

Then came the workshop on the theory of MI. During the workshop their MIPs were mapped (refer to Figure 5.4 on page 127). And that was a big eye opener to them. They realized their natural preferences, their strengths and weaknesses. As they were being familiarized with the theory of MI, how students could be intelligent in different ways, how students would learn differently according to their natural proclivities, how students could excel when guided according to their MIPs in one field or the other, how teachers needed to complement each other in bringing the best out their students, they began to look at their vocation as teachers differently. Their attitudes towards each other, the students, and the school itself took a new orientation. They began to realize that their perception of themselves as teachers had to changed. Further, they realized that their attitudes towards teaching needed modifications. Their teaching approaches needed reorientation so as to be able to meet the needs of the students with individual differences. Also, being aware of their own MIPs they realized that they needed to be con-

stantly on their guards so as not to impose their own preferences on to the students.

First, from being “9.00-3.30” teachers, they perceived themselves as guides to the students. They got involved in the life of the school in general. Along with teaching various school subjects they said they needed to teach their students for life; they had to take care of the whole person. And to work for the development of the whole person they said that they needed to cooperate with each other, put their expertise together, so that the students learnt not only the subjects but also the secrets of excelling in life. However, they were not clear on the ‘secrets’ that they spoke of as no one would articulate them clearly .

Second, the teachers began to talk of their duties and responsibilities in educating children brought under their care. Even as they remained conscious of their rights they had also grown in consciousness of their duties and responsibilities. During the intervention programme, it was observed that they were more forthcoming in organizing various cocurricular activities in the school. In the events of some teachers being absent, others accepted the substitution classes more willingly. Even during special occasions like the preparations leading to the Independence Day celebration, Parents’ Day celebration, School Annual day celebration, Inter-House quiz and singing competitions etc., the same teachers, who, once used to

grumble against the school administration for keeping them late after the school hours, now stayed back in the school because they wanted quality celebrations and performances.

Third, teachers wanted their students to learn with ease. So unlike prior to the intervention programme, when they used to be monotonous and boring, they were more creative in presenting their subject matter. Their MIPs had helped them realize that their strengths were Naturalistic, Bodily-Kinesthetic, Musical and Linguistic intelligences. Hence, their teaching activities too revolved around these intelligences. They were creative and imaginative. There were plants and stones and mud, lots of activities, singing and talking in the classroom. Consequently, at times, the classroom atmospheres did appear really chaotic and out of control. But at the same time joys on the faces of the students could not be missed. Teachers and students alike, all were seen deeply involved in the process of joyful learning. It was no longer 'teacher talk students listen' situation.

Fourth, the atmosphere among the teachers was not marked with suspicion but with cooperation. They were often seen interacting freely with each other. In the staff-room, they were observed sharing and exchanging their ideas and views quite openly. The atmosphere there was cordial. They were not afraid of any tail-bearing. In fact, one of junior members of the staff quite openly declared

that they used to be *once upon* a time, not any longer. The same tone was echoed by others as well.

Thus, it could be concluded that the instructional strategy incorporating the theory of MI had definitely brought about changes in the perception and motivation of the teachers. They seemed more committed to their vocation of teaching. Also it had made them aware of their strengths and weaknesses, personal limitations, and hence the need of mutual cooperation among themselves. It had also made them conscious of their duties and responsibilities as teachers. More importantly now they had begun to be concerned about the overall development of their students. And to achieve this they needed help and cooperation of each other. They had begun to realize that one's limitations could be complemented by another's expertise. In all, their perception of themselves and the level of their motivation had changed markedly as a consequence of the instructional strategy incorporating the theory of MI .

5.13 DISCUSSION ON THE STUDY

Discussions on the data above throw lights on quite a number of issues pertinent to the field of education. Issues that have been touched upon in this study are parental care and concern, general social atmosphere, students' motivations and aspirations, their self concepts, attitudes towards studies and their teachers, their awareness of their learning styles etc.. For ensuring the optimal utiliza-

tion of the educational resources in the field of education today, the 'context' of students cannot be taken lightly. Knowledge of their familial, social and economic backgrounds is of great importance, especially their interests and hobbies, (which was found with the help of their CRCs) . Information such as the educational and economic backgrounds of the parents too would put the teachers on a vantage point in their efforts to understand the students. Many of the difficulties faced by the students in schools could be understood better thereby minimizing to a great extent the stress and anxieties of the students.

But more significantly, for the optimal use of the educational resources as well as for ensuring effective and joyful learning among the students, there are a few things that must be paid attention to. What is of utmost importance is the knowledge of their preferential styles of leaning. This may be obtained through the MIPs of the students. The teaching fraternity needs to bear in mind that every individual has his / her own preferential style of learning. When the instructional methodologies correspond with their natural preferential styles of learning there is a resonance. That is to say, students vibrate in unison with instructional methodologies with a much greater amplitude. When that happens, stress and frustrations among the students are minimized.

Further, while being aware of the preferential styles of learning of the students, it is equally important to realize that the teachers too

have their own natural preferences, which may be found with the help of their MIPs. Thus being aware of their natural preferences, teachers may do well paying attention to their natural proclivities. For, it is quite natural that the teachers would adopt instructional methodologies that come naturally to them. In doing so, the danger is that they might impose their own preferences on to their students which may not go well with the students. And if the teachers remained stuck to their own natural preferences their instructional methodologies might not be effective.

Hence, looking back at the analyses of and the discussions on the data done in this chapter, a few issues emerge that seek our attention. First of all, in spite of most of the parents being educated themselves, how did they fail to motivate their children? One could not cite economics as the answer to this question as their financial conditions were not poor. What could have been the reason(s) for their failure in motivating their children? Secondly, the teachers adopted instructional strategies that were not in line with the natural preferential styles of learning of their students. In other words, in spite of knowing that their students were intelligent differently and hence learnt differently, how is it that the teachers invariably almost all the time continued to treat them as standard students? They instructed them in a standard manner. This was bad enough; they even evaluated them in a standard manner. In general, how is it that they failed to persevere with the instructional strategy that could meet the needs of the differently as well as differentially in-

telligent students? Thirdly, even though the teachers constituting the sample of this study were introduced to the theory of Multiple Intelligences and its potential contributions in the teaching-learning process, and also had their MIPs mapped, still they failed to utilize the most naturally preferred intelligences, (Bodily-Kinesthetic and Naturalistic) in their instructional methodologies. Being intelligent Bodily-kinesthetically and Naturally, it was expected that they would utilize these two at their maximum. But it was not so. Instead, they tended to continue to rely on their Linguistic Intelligence. What could have been the reasons for such a choice? Although the instructional tools are a plenty according to the theory of Multiple Intelligences, teachers were not really at home with them.

5. 14. INVESTIGATOR'S REFLECTION ON HIS OBSERVATIONS DURING THE STUDY

The investigator observed that when the theory of Multiple Intelligences and its educational implications were introduced to the teachers constituting the sample of this study, the teachers welcomed and received them with great enthusiasm and fascination. They seemed more than just convinced that with the implementation of the instructional strategy incorporating the theory of Multiple Intelligences there will be a transformed classroom interactions. They would be able to reach out to most of the students. Consequently, students would learn better, faster and with greater ease. They believed that it would bring in a lot of creativity and novelty in the

class. Thus the monotony in the class would be a thing of the past. Further, they foresaw that it could generate a lot of enthusiasm among the students too which in turn would minimize frustrations among them. They also realized how incomplete and deficient each one of them was. At the same time they realized how each one of them was tremendously intelligent in different fields. Therefore, they saw the enormous possibilities of making the school environment rich by cooperating with each other. They realized how each one of them could compliment the other in numerous different ways. Thus immediately after the workshop they were seen full of enthusiasm. It seemed that a floodgate of energy had been just released in them. They sincerely remodelled their lesson plans in the Multiple Intelligences way and transacted them in their classes. These were received well by the students which further encouraged the teachers. The school administration too was very pleased with the commitments of its staff.

However, as the days and weeks passed by, the initial bursts of enthusiasm and energy among the teachers began to retard. They began to show signs of premature saturations; they found the daily remodelling of their lesson plans a bit too much! And so, although the cooperations among them still continue, their preparations for the classes gradually began to revert to their old styles. They began to be preoccupied with the concerns of “completing/covering” their prescribed syllabii. They began to entertain the idea that if they

continued the pace with which they were going, they would never be able to “cover” the syllabii. Thus there seemed to be a tension between the new found instructional strategy and preoccupation of covering the syllabii. In spite of seeing the transformations among the students after the implementation of the instructional strategy incorporating the theory of Multiple Intelligences on the one hand, on the other they found themselves struggling with its demands. As soon as the investigator perceived this mental struggle among the teachers, he offered them his help and assistance to persevere with the recently adopted instructional strategy. He kept encouraging them citing the observed transformations among the students, which was quite obvious to them too, as the example. And thus they carried on implementing the instructional strategy incorporating the theory of Multiple Intelligences till the investigator stopped his observations at the end of that academic year.

From the above observation what emerges is that the instructional strategy incorporating the theory of Multiple Intelligences is undoubtedly a demanding one. Teachers would need to realize that “covering” the syllabii is not their prerogative. Instead, in the words of Dr. A P J Abdul Kalam, the President of India, what they actually need to be preoccupied with is “igniting the minds” of their students. They need to show them how things can be learnt. They need not deal with all the topics in the class. Instead, they need to initiate among the students the curiosity to learn, encourage them

for self-learning by assisting them as and when it is required. Admittedly, it demands a lot of commitments from the teachers. Even though the teachers accepted it intellectually to be effective, they found it difficult to persevere with it. Hence, in order to realize its maximum efficacy, a longer period of time is needed so that the teachers assimilated it without any external pressure. For, till it became a part of the normal teaching-learning process among the teachers, its efficacy can be seen only partially. Whatever might be the case, it would always keep challenging the teachers in general.

5.15 CONCLUSION

In this chapter, the data collected from various tools have been analyzed and discussed. As the data were of two types, namely, qualitative as well as quantitative, these have been analyzed accordingly. The CRCs revealed that neither the home nor the social atmosphere was motivating enough for the students. Even the teachers prior to the intervention programme failed to inspire and motivate students. The MIPs of the students revealed that their natural preferences were in favour of Bodily-Kinesthetic, Musical, and Naturalistic intelligences, whereas that of teachers showed that their natural orientations were in the line of Naturalistic, Bodily-Kinesthetic, Musical, and Linguistic intelligences.

Further, with the introduction of the instructional strategy incorporating the theory MI, it was found that the self perception and the level of motivation of both, the students as well as the teachers

improved appreciably. The lessons were transacted better. Consequently, the academic achievements of the students too improved. And on the whole the atmosphere in the school improved. And finally, some reflections and a few issues have been raised as a consequence of the analyses and discussions on the data.

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