An Inefficient Carpenter

Almost Always Blames His Tools!

CHAPTER - III
METHODOLOGY

3.0 INTRODUCTION

The present study is concerned about the development and implementation of an instructional strategy incorporating the theory of Multiple Intelligences. There are three main aspects of this study, namely, the theory of Multiple Intelligences, development of an instructional strategy, (teaching as well as evaluation of learning), incorporating this theory, and its implementation. In Chapter-I, the theory of Multiple Intelligences and the instructional strategy have already been discussed in detail. Now, the sample, tools and techniques of data collection and their analysis, and the development of an instructional strategy incorporating this theory and its implementation is being discussed below.

3.1 DESIGN OF THE STUDY

The present study is a Qualitative Study and its design is Quasi-Experimental. The design is Quasi-Experimental because the group of students constituting the sample for the study is neither divided in to the control and experimental groups nor are they matched in anyway. The quantitative data and their analyses are carried out only as part of the qualitative study. Therefore, even though at least two separate t-tests were conducted on the data while analyzing them, the study was not designed to be an Experimental study. At

best the study was a qualitative study which followed a quasi-experimental design.

3.2 THE SAMPLE

Having identified the problem of the study, the next essential task before the researcher was the selection of the Sample of the study. The sample of the study consisted of two parts: the teaching staff and the students. For the first, after a careful consideration of various practical aspects, like the geographical location of the school, its availability, the willingness of the school administration etc., the entire body of the teaching staff, (twenty one of them), of a secondary school at Namchi (New Light Academy, Namchi), south Sikkim was purposively chosen. The entire body of the staff was chosen because it was assumed by the researcher that it was not just the class teacher but the entire staff interacted with the students in one way or the other and affected their learning

For the second part of the sample, that is, the students, all the students of class VIII, (sixteen of them) were taken. Students of class VIII were chosen because the researcher assumed that with their level of intellectual maturity they would be in a better position to appreciate the theory of Multiple Intelligences. There was yet another reason for selecting students of Class VIII, the practical aspect. Since the students have to appear for the Board Examinations at the end of Classes VII and X, the school authorities showed

their reluctance and displeasure in allowing any kind of studies to be conducted on them as that would, in their opinion, disturb them; they would not be able to prepare themselves for the Board Examinations. Class IX was not considered for the present study because the school administration was of the opinion that it was class IX that set the tone for the next Board Examination at the end of class X. And so the school payed extra attention to the students of class IX. Therefore, the administration was willing to offer only class VIII. Keeping these constraints in mind the researcher selected Class VIII for his study.

3.3 THE TOOLS

Apart from the teacher made achievement tests and the Cumulative Record Cards of the students, the researcher made use of the following tools for the study: Participative Observation, Unstructured Interviews, Anecdotal records, Motivation scale, the Multiple Intelligence Inventory and the Teacher made Posttest which incorporated the theory of Multiple Intelligences.

3.3.1 CUMULATIVE RECORD CARDS

The school office maintained cumulative record cards for all the students of the school (Appendix A). These record cards contained all the basic information of the students like their age, sex, family background, the financial and economic information of the family, educational qualifications of their parents, the previous scholastic

achievements of the students, their areas of interest, their special achievements, information about their physical health, etc. These information helped the researcher understand the students better during the course of his study.

3.3.2 THE PARTICIPATIVE OBSERVATION

The researcher made use of the Participative Observations, (Appendix B), while the remodelled lesson plans were being executed in the class by the teachers. Teachers and the students alike were aware of the fact that they were being observed by the researcher. Yet that did not bring in any kind of artificiality in them as the researcher observed the classes over a period of one academic year. Although initially during the first few classes they did try to behave artificially, as the days passed by, their responses in the classroom and as well as their over all behaviours in the campus appeared quite natural. The researcher kept records of the behaviours, levels of attention and interest, students' participation, and the responses that he observed in the classroom.

3.3.3 THE UNSTRUCTURED INTERVIEWS

The unstructured interviews of the teachers as well as the students were conducted. Instead of the structured interviews the researcher preferred to conduct unstructured interviews of the teachers and the students because he always met and talked to them informally outside the school campus when they were more relaxed. During

those conversations it was easier to get to the details even to topics personal to them. Teachers as well as students alike shared freely. The researcher interviewed the whole sample.

3.3.4 THE ANECDOTAL RECORDS

While observing the transactions of the remodelled lesson plans, and during the unstructured interviews the researcher noticed certain behaviours and responses among the sample which were somewhat different from the normal. The subjects of the study too sometimes shared matters, incidences and experiences which were revealing and hence of special interest to the researcher. The researcher recorded these anecdotes in the Anecdotal Record Card, (Appendix C). During his year long association with the sample, the researcher observed certain definite patterns in these anecdotes which the subjects of the study had shared with the researcher.

3.3.5 THE MOTIVATION SCALE

The modified and adapted version of the Motivation Scale, (Appendix D), constructed and standardized by **Dr. O. S. Rathore & Dr. Panwar,** Department of Extension Education, Rajasthan College of Agriculture, Udaipur, Rajasthan was chosen to study the motivation of the sample. Adaptation and modification of the scale were necessary because the motivation scale in its original version is meant for the students of agriculture only. While adapting and modifying the scale, however, care was taken that the meanings of

the statements as in the original were maintained. Only certain words and phrases were modified so as to suit the sample. A few of the statements in the original Motivation Scale were irrelevant for the school children. Hence they were replaced with more or less similar statements. This adapted version of the Motivation scale was administered to the sample students twice, first at the beginning of the implementation of the intervention programme and again at the end of it..

3.3.6 THE MULTIPLE INTELLIGENCE INVENTORY

To map the Multiple Intelligence Profiles, (MIPs), two Multiple Intelligences Inventories were chosen. The first one was the *Multiple Intelligences Inventory for adults*, (Appendix -E), developed by Armsrtong (2000). The second was the *Multiple Intelligences Survey*, (Appendix -F), developed by McKenzie (1999). With the help of these two inventories the MIPs of the sample was mapped. And while the sample teacher were told about their MIPs, the sample students were not.

3.3.7 THE TEACHER MADE ACHIEVEMENT TESTS

The teacher made achievement tests were of two kinds. The first (Pretest) was the usual teacher made achievement test. The second was the teacher made achievement test according to the theory of Multiple Intelligences, (refer to pages). These tests contained test

items that tested not only the usual Linguistic and Logical mathematical intelligences but also the other intelligences. The techniques of preparing these teacher made achievement tests were taken up during the development of the intervention programme.

3.4 DEVELOPMENT OF THE MI INSTRUCTIONAL STRATEGY

The researcher developed a set of study materials on the theory of Multiple Intelligences. This set consisted of the overall introduction to the theory of Multiple Intelligence, its educational implications, and the manner in which the theory can be used in the instructional system. This set of study materials was then given to the teachers constituting the sample of the study during two workshops of one week each. During the first workshop, (May 23-28, 2003) the researcher familiarized those teachers with the theory of Multiple Intelligences and its educational implications and with the techniques of preparing lesson plans incorporating the theory of Multiple Intelligences. Having done that, the researcher then assisted them in remodelling of the lesson plans according to the theory of Multiple Intelligences. While remodelling the lesson plans the researcher particularly spent time on writing the specific objectives as everything else in the lesson plan centred around them. According to the specific objectives, the remodelled lesson plans included a wide range of activities like acting/role modeling, singing,

group discussions, drawing and sketching, a minute of quiet personal reflection, hands on exercises etc. The subjects chosen for remodelling of the lesson plans were Mathematics, Science and Language. For the other subjects those teachers remodelled the lesson plans on their own since they themselves taught them and by then they knew how to do that.

The second workshop, (October 20-25, 2003) was more like a revision of the first workshop. This time the teachers constituting the sample of the study shared their difficulties and constraints in the preparation and execution of the lesson plans which incorporated the theory of Multiple Intelligences.

3.4.1 THE MI LESSON PLAN

An instructional strategy consists of two components. First, the act of teaching; second, the act of evaluation. The act of teaching is generally carried out with the help of lesson plans. Therefore, for the Multiple Intelligences instructional strategy, first a lesson plan had to be developed incorporating the theory of Multiple Intelligences. Armstrong (2000), outlines the procedure of preparing such a lesson plan. To prepare such a lesson plan he suggests the following five steps:

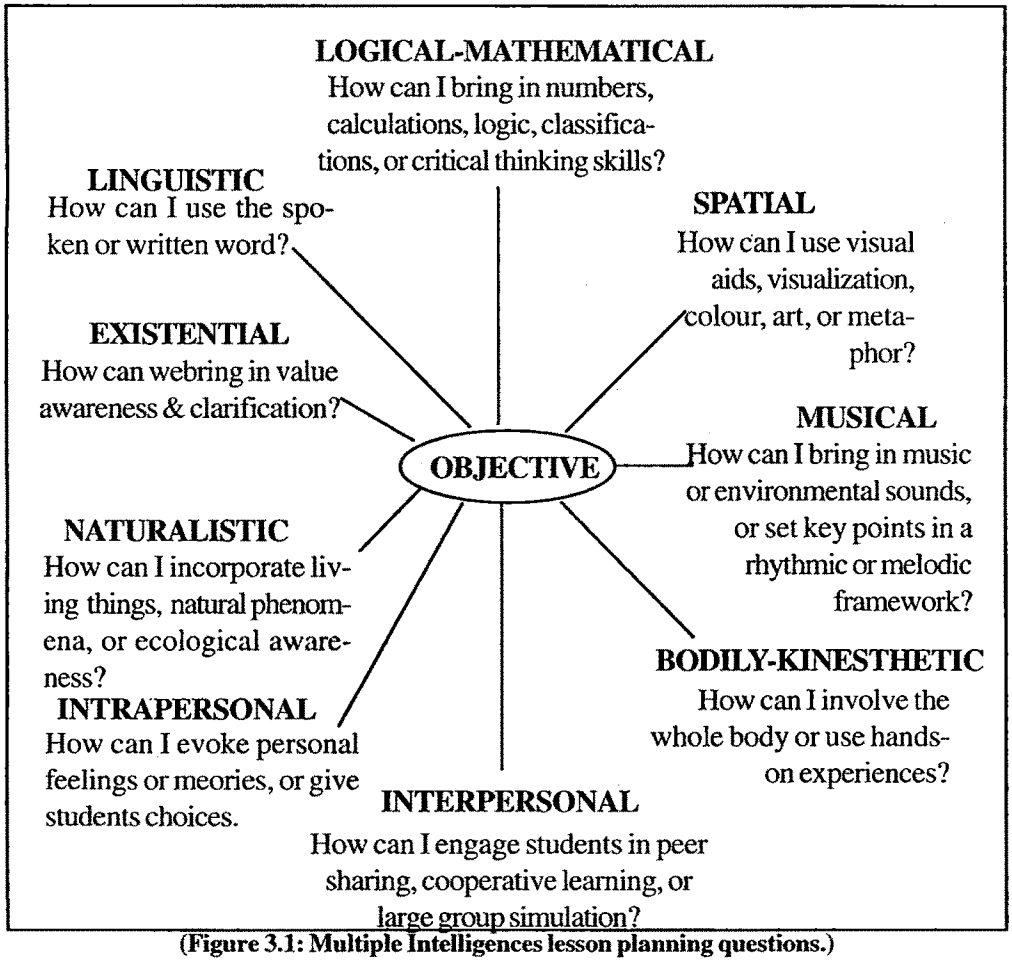
3.4.1.1 Focus on a specific objective or topic

In preparing a lesson plan incorporating the theory of Multiple Intelligences, it is important that the focus on the specific objective

is maintained. To do this, the specific objective of the lesson is to be written down at the centre of the page symbolically suggesting that everything else revolves around that. Then various intelligences are to be written around that.

3.4.1.2. Ask key Multiple Intelligences questions

Keeping the focus on the objective, certain specific questions need to be asked and written down under each of the intelligences. These questions would obviously further intensify the focus on the objective. At this stage the plan would appear something like the figure 3.1 below:



(Figure 3.1: Multiple Intelligences lesson planning questions.)
(This is taken from Armstrong, (2000) page 45.)

3.4.1.3 Consider the possibility

There are numerous approaches in executing a lesson according to the theory of Multiple Intelligences, (Armstrong, 2000, 40-43). For each of the intelligences a teacher could adopt one or more of them as it may deem appropriate and necessary. Therefore, for a given topic and the objective thereof one needs to consider one or more approaches according to its/their feasibilities in a particular classroom situation. While thus considering the approaches, one further needs to bear in mind that the approaches selected are naturally fitting to the topic and in no way do they appear forced creating an artificial atmosphere. Also that in a class all intelligences need not be considered.

3.4.1.4. Brainstorm

Along with the approaches appropriate activities/aids also need to be considered. It is better therefore to brainstorm and list all the activities/aids that come to mind. These activities and aids then are to be stated clearly. For example, if as the result of the brainstorming, one of the activities listed is a *game* under the Bodily-Kinesthetic Intelligence, then the nature, rules, duration etc. of the game have to be clearly stated. Similarly, if a *video* is listed under the Spatial Intelligence, then "video about what" needs to be stated explicitly. The concern here is that whatever activity one chooses, the activity or aids must be clearly stated. Nothing must be taken for granted or left ambiguous.

3.4.1.5 Select the most appropriate approach and activity

Not all approaches and activities would be suitable and feasible. Therefore, from the lists of approaches and activities only the best suitable and appropriate under each of the Intelligences are selected. Again, there could be just one approach and one activity per Intelligence or there could be more than one. The number is not important. What really matters here is that the selected approaches and activities must facilitate the act of teaching with optimum efficacy. They must aid the act of teaching. Also while selecting the particular approach and activity one needs to examine whether these may not turn out to be sources of distraction to the students in some way. Finally, while the selection of the approaches and activities are being made, it must be borne in mind whether or not the teacher is comfortable executing them. Otherwise, no matter how good the approaches and activities may be in themselves, they will not elicit the desired result.

Finally, a sequential plan of the entire process of implementing such a lesson plan is to be drawn. Only then the lesson plans thus created should be implemented.

3.5 INTERVENTION PROGRAMME

The first and the core aspect of the intervention programme was the preparation of the remodelled lesson plans. Once the teachers of study were found confident in remodelling their lesson plans

incorporating the theory of Multiple Intelligences, they were left on their own as far as the transactions of those lesson plans were concerned. As a part of this intervention programme, the researcher also mapped the MIPs of each of the sample of teachers with the help of the the Multiple Intelligences Inventories. The mapping of the MIPs of each of the sample teachers was judged necessary prior to their going to the classroom because the individual's natural preferences affect the modes of transacting the lessons in the class. For example, if one is found to be linguistic, his/her natural preferential mode of teaching would also be predominantly linguistic. In that event, the other intelligences, in all probability, might not find their places in his/her act of teaching.

The second aspect of the intervention programme was the preparation of the teacher-made achievement tests which incorporated in them test items which tested not only the usual linguistic and logical mathematical intelligences but the other intelligences also. These teacher-made achievement tests were administered to the sample students at the end of the academic year.

3.6 IMPLEMENTATION OF THE MI LESSON PLANS

The third aspect of the intervention programme was the implementation of the remodelled lesson plans and the teacher made achievement tests in the classroom. The sample teachers transacted the remodelled lesson plans on their own in the

classrooms during the full academic year and the researcher observed them thrice a week for a half academic year from June 2003 to December 2003.

3.7 DATA COLLECTION

The process of data collection began during the first workshop. The MIPs of the sample teachers were mapped with the help of the Multiple Intelligences Inventory for Adults. And the sample teachers were informed about their MIPs subsequently. Immediately thereafter, before the intervention programme in the school, the over all percentages secured by the sample students in their previous year (Class VII), school final examinations were collected from the school office.

During the implementations of the intervention programme following data were collected with the help of the tools and techniques mentioned earlier, (Para. Nos.3.3.1 - 3.2.7). Following were the tools administered for collecting the required data:

i. Participative Observation Schedule.
ii. Unstructured Interviews with students and teachers.
iii. Cumulative Record Cards of students.
iv. Anecdotal Records (of students).
v. Motivation Scale.
vi. Multiple Intelligences Inventory.
vii. Teacher made Achievement Tests.

3.8 ANALYSIS OF THE DATA

Except for the Quantitative data, all the rest were analyzed qualitatively. The quantitative data from the Teacher made achievement tests and the Motivation scale were analyzed using t-test with the levels of significance set at 0.01 and .05. These indicated the scholastic achievements and the levels of motivation of the students.

The qualitative data collected with the help of the Participative Observation, Unstructured Interviews, Anecdotal records, and Motivation Scale were analyzed with the following themes in mind;

i. Parental Concern
ii. Social Atmosphere
iii. Students' Aspirations
iv. Students' rating of the teaching of their Teachers
v. Teachers' relationship with students
vi. Students' peer group cooperations
vii. Students' awareness of their learning styles.

3.9 CONCLUSION

The present chapter outlined the methodology of the study. It contained the design, and the procedure of sampling, selection of tools and techniques of data collection and their analysis. It also detailed the development and implementation of the instructional strategies incorporating the theory of Multiple Intelligences.

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