CHAPTER V

FEASIBILITY OF THE MULTIMEDIA INSTRUCTIONAL STRATEGY

As it has been already pointed out in Chapter I, an aspect which gains importance in studies dealing with development of instructional strategies is the feasibility of the developed strategies. The strategies developed, if to be absorbed into the school system as a regular instructional programme, have to satisfy not only the criterion of effectiveness but also that of feasibility; feasibility with respect to time and cost required for its regularisation. With the study of the effectiveness of the developed multimedia instructional strategy in the earlier two chapters, an attempt has been made in the present chapter to examine its feasibility. The objective in respect of this aspect has been stated as follows:

> 'To study the feasibility of the strategy in terms of (a) time, and (b) cost'.

Specifically, the strategy has been examined for its feasibility with respect to aspects such as (1) whether the strategy can be regularised by accommodating in the regular school schedule without causing undue disturbance in the working of the school system; and (2) whether the cost that would be incurred for its regularisation is manageable

by the school.

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How the objective has been fulfilled in the investigation is presented in what follows.

DESIGN

For studying the feasibility of the strategy in terms of time, a detailed account of the time needed for the implementation of the strategy was to be obtained. This necessitated maintaining a record of the total number of periods utilized for implementing the strategy. Besides, an attempt was also made to examine whether carrying out certain activities in the strategy requires additional teaching time on the part of the teachers. For this, the tasks involved in carrying out such activities in the strategy were to be considered. For studying the feasibility of the strategy in terms of cost, details related to expenditure such as labour charges for stencil cutting and duplicating learning materials, stationery, etc., were to be collected, and the total cost that would be incurred for regularising the strategy was to be worked out.

DATA COLLECTION

During implementation of the strategy (refer Section II of Chapter III), data in respect of the time required to administer learning material for each of the unit in the course along with the various tests were

maintained in terms of the number of periods utilized. Each period comprised of 30 minutes. For working out the cost, from the learning materials and tests utilized during the implementation of the strategy, the total number of stencils and other stationery required for duplicating them were calculated. Details in respect of the labour charges for stencil cutting and duplicating the learning material and tests, stationery required for this purpose, etc., were obtained. The rates obtained are as they stood in September, 1981.

FEASIBILITY OF THE STRATEGY IN TERMS OF TIME

The total number of periods utilized for administering the learning materials along with the tests are presented in Table 5.1. The number of periods utilized for administering the intelligence test, reaction questionnaire, etc., have not been taken into account as they do not form parts of the instructional strategy.

TABLE 5.1

From Table 5.1, it can be made out that in all, a total of 76 periods have been utilized to implement the strategy. As a matter of fact, a total of 16 periods have been utilized in addition to the total of 60 periods allotted in the school time-table by the State Department of Education, Gujarat, for teaching Biology at std.VIII level. It may be

TABLE 5.1

Number of Periods Utilized for Administering Learning Materials and Tests

Sr. No.	Units	No.of periods utilized for		Total
		teaching	administering the tests	
1.	Unit 1	4		4
2.	Unit 2	9	2 (ut)*	11
3.	Unit 3	10	2 (ut)	12
4.	Unit 4	6	2 (ut)	8
5.	Unit 5	8	2 (ut)	10
6.	Unit 6	8	2 (ut)	10
7.	Unit 7	6	2 (ut)	8
8.	Unit 8	4	1 (ut)	5
9.	Comprehensive test-I		2	2
10.	Comprehensive test-II		2	2
11.	Scientific Attitude Test (Pre-test + Post-test)		2 + 2	4
	Total	55	21	76 Periods

(ut)* = unit test

mentioned that a total of 180 periods are allotted in the school time-table for teaching the course General Science, with 60 periods each for Physics, Chemistry and Biology. Out of the 180 periods, the number of periods allotted for evaluating students' progress is only 12 periods; 4 periods each for first term, second term and annual examination.

These examinations include portions of Physics, Chemistry and Biology, as these subjects are taught as one course under the heading 'General Science'. Subtracting the number of periods allotted for evaluating students' progress from the total of 180 periods, the allotment of number of periods for teaching each of Physics, Chemistry and Biology would be 56 periods. It may be noticed from Table 5.1 that of the total of 76 periods utilized for implementing the strategy, a total of 21 periods have been utilized exclusively for administering criterion tests and scientific attitude test. The actual number of periods that have been utilized for teaching is only 55. Considering the total number of periods utilized in the strategy exclusively for teaching, which is well within the total number of periods allotted in the school time-table for teaching Biology (being 56 periods), it can be said that the developed strategy can be successfully accommodated in the school schedule with the provision for evaluating students' progress as prescribed in the school time-table, i.e., at the end of first term, second term and the academic year. However, since a continual evaluation of students' progress and providing feedback for further improvement forms an important component in the instructional process, these tests cannot be avoided to fit the strategy into the regular school time-table. This only implies that either some provision should be made in the school time-table

for conducting these tests, or some additional measures may have to be devised to accommodate these tests in the regular instructional schedule. A few such measures have been discussed below.

Observing Table 5.1 once again, it may be noticed that 4 periods; 2 periods each have been utilized for administering comprehensive tests-I and II. And similarly, 4 periods have been utilized for administering scientific attitude test. As the school conducts class tests at the end of first term, second term and at the end of the academic year, a separate provision for comprehensive tests-I and II can be avoided. The class tests and the annual examination serves for summative evaluation purposes. It may be mentioned that in addition to the regular class tests and annual examination conducted by the school authorities, in the investigation, comprehensive tests-I and II were administered, as students' achievement on these tests were considered as an additional index for validating the strategy.

As regards administering scientific attitude test, a total of 4 periods have been utilized; 2 periods each for pre-test (at the beginning of the academic year) and post-test (at the end of the academic year). As these tests are not serving as inputs in the strategy and requiring only 4 periods (two periods in the beginning and two periods at the end of the academic year), free periods that arise due to reasons such as absence of teachers, etc., can be made

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use of for its administration.

With the above provisions for accommodating comprehensive tests and scientific attitude test, the total number of periods that would be required as extra to accommodate the strategy along with the provision for continual evaluation of students' progress would be only 10. This total of 10 periods, which would be additional to the ones allotted in the time-table, could be easily accommodated in the regular school schedule by taking a few extra periods. Actually, when this adjustment of 10 periods in the regular school schedule is to be made over a period of 9 months (normal functioning of the school), it amounts to taking almost one extra period in a month. This could be accommodated by making use of such periods as library periods, from periods that arise due to absence of teachers, etc.

As regards additional teaching time required on the part of the teachers in implementing the instructional strategy, it may be mentioned that organizing instruction through many of the components of the strategy do not require teachers to spend more time in addition to what is expected of them. However, organizing instruction through certain components such as team teaching, discussion and conducting laboratory experiments do require teachers to spend more time, even though carrying out activities through these components are not taking in terms of time. With the learning experiences to be provided through these components being already developed with

specific instructions for carrying them out, the additional time required on the part of the teachers for organizing instruction through these components would be in planning their teaching schedule and in getting acquainted with the components. However, this would not be an additional teaching time for those teachers who are already familiar with, and are practising such type of activities in their regular instructional work. In the instructional strategy with many criterion tests, exercises and assignments, the correction of these for assessing students' progress and for providing feedback would, apparently, require more time from teachers. However, this does not pose many problems since teachers would be relieved from such tasks as planning and writing lesson-plans, preparation of class tests, etc. The time saved on these activities could be utilized for correcting test papers, exercises and assignments, and also on more important tasks such as providing individual feedback and organizing remedial instruction, etc.

From the discussion presented so far, what could be discerned about the feasibility of the strategy in terms of time is that the developed strategy is feasible in terms of time as it could be accommodated in the school schedule without causing undue disturbance in the regular functioning of the school system.

FEASIBILITY OF THE STRATEGY IN TERMS OF COST

The cost that would be incurred if the strategy

9 is to be regularised in a school has been presented in Table 5.2. It may be mentioned that the cost that has been calculated is for preparing 100 sets of learning material, as schools usually will have two sections of std.VIII with about 40 to 50 students in each.

TABLE 5.2

Expenditure that would be Incurred for Preparing 100 Sets of Learning Material and Tests

Sr. No.	Stationery/Labour charges	Total Rs. P.
1.	Stationery items	
	(a) 380 stencils @ Rs.60/- per packet of 48 stencils	480=00
	(b) 19,000 sheets of cyclostyling paper (for 100 copies of learning material and tests) @ Rs.33.50 for 500 sheets	1273=00
	(c) Eight tubes of duplicating ink (1 tube for 50 stencils) @ Rs.20/- per tube	160=00
	(d) Cellophane sheets - 3 mts. for preparing 280 over head transparencies 6" x 6" @ Rs.4/- per metre	12=00
	Total for stationery	1925=00
2.	Labour charges	
	(a) Labour charges for cutting 380 stencils @ Rs.1=50 per stencil	570=00
	(b) Cutting 280 diagrams on the stencils, approximately 0.75 rupees per diagram	210=00

contd...

Table 5.2 (Contd.)

Sr. No.	Stationery/Labour charges	Total Rs. P.
	(c) Preparing 280 transparencies @ Re.1/- per transparency	280=00
	(d) Duplicating charges (100 copies) @ Re.1/- per stencil	380=00
	Total for labour charges	1430=00
	Nett expenditure that would be incurred (stationery + labour charges)	3355=00

It can be seen from Table 5.2 that the total cost that would be incurred for regularising the instructional strategy would be Rs.3,355=00 (this amount is as per the rates obtained in September, 1981). The cost that would be incurred for the duplication and preparation of 100 sets of learning material (to be supplied to students) alone would be Rs.3,063=00. This amount does not include the cost of purchasing cellophane paper and preparation of transparencies, as these will not be supplied to students. The charges for preparation of transparencies will be for only one set of 280 transparencies, as it would be utilized by the teacher for the purpose of explaining the ideas. Thus, the amount that would be incurred for preparing one set of learning material would be Rs.30.63.

Eventhough the amount of Rs.3,355=00 is not very big, in the beginning stage of regularising the strategy,

11 a school may find it difficult to allocate funds for this, as funds from all other heads may have to be channelised for the purpose of regularising the strategy only (it may be mentioned that schools in Gujarat State receive a grant of Rs,6,000/- for printing and stationery from the State Department of Education. This amount of Rs.6,000/- is to be divided for three levels, viz., VIII, IX and X standards. The sum of Rs.2,000/- at each level is to be utilized for printing and purchasing stationery for various subjects taught at that level). A few measures through which schools can manage this expenditure have been discussed below.

One way could be through seeking aid under special heads such as 'aid for installing an innovation' from the State Department of Education, Gujarat. As a matter of fact, it should be the responsibility of the State Department of Education to consider such innovations and provide necessary funds for regularising them in schools.

A second way could be that the schools can collaborate themselves with funding agencies such as National Council of Educational Research and Training (NCERT) which provides funds for encouraging research activities specially at the school level and installing them.

Another way could be through collecting the amount of Rs.30.63 which would be incurred for the

12 preparation of one set of learning material from students (100 students) at the rate of Rs.3=40 per student along with the fees for 9 months. This expenditure which is recurring could be minimised if the learning material is provided in reusable form - providing learning material in the form of printed hard bound books. If the material is provided in reusable form and the cost that would be incurred for regularising the strategy is spread over a number of years, the amount, to be collected from students towards learning material would turn out to be still lesser. To illustrate this, suppose, if the learning material could be utilized for a minimum of 3 years, the cost of preparing the learning material would be shared by 300 students (since each year 100 students would be utilizing the same material) rather than 100 students. It amounts to collecting Rs.10.21 from each student in all the three years towards the learning material. It would be collecting just a rupee more in addition to fees, for over a period of 9 months (normal functioning of the school in a year). Thus, when the cost that would be incurred for regularising the strategy is seen in terms of the utilization of the learning material over a period of years, it appears to be manageable by the school.

On the basis of the above arguments, it can be said that the strategy is feasible in terms of cost. In other words, the expenditure that would be incurred in the preparation of instructional materials will not come in the way if the strategy is to be regularised in a school.