

C H A P T E R I I

T H E P R O B L E M

The present chapter gives an account of the problem under investigation, objectives of the study, hypotheses formulated and the delimitations of the study.

2.00 T H E P R O B L E M

The present problem is being reproduced below for the convenience of readers. It is specifically stated as:

"Relationship between Patterns of Teacher Classroom Behaviour and Pupils' Attainment in terms of Instructional Objectives".

The rationale, need and justification of the study has already been given in the first chapter of introduction. Nevertheless, the need of the study has been justified for three reasons, namely, the needed studies on teacher effective^{-ness}ness, studies with pupil achievement as the criterion variable with further specifications in terms of instructional objectives and the need for studying these two independent and dependent variables in experimental conditions.

Before the objectives of the study are specified it is necessary to understand the two key concepts embodied in the statement of the problem - (i) patterns of teacher classroom behaviour and (ii) pupils' attainment in terms of instructional objectives. The following presentation attempts to describe the two concepts.

2.10 PATTERNS OF TEACHER CLASSROOM BEHAVIOUR

Flanders (1970) has defined teacher behaviour as acts which occur in the context of classroom interaction. A pattern has been defined as a short chain of events that can be identified, occur frequently and can be given a label (or name) since this often facilitates thinking. In this context, the patterns of teacher classroom behaviour means those chains of events (shortest possible act that a trained observer can identify and record) that a teacher shows while teaching in the classroom. This definition of patterns of teacher classroom behaviours has been accepted for the present investigation. On the basis of the reviewed research literature as reported in first chapter of Introduction, four patterns, namely, (i) narration, (ii) open questions, (iii) narrow questions, and (iv) narrow questions with feedback were specified as the treatment variables for the present investigation.

Narration (Pattern I): It has been operationally defined to designate such pattern of teacher behaviour which embodies 'explaining' by the teacher. The teacher is expected to plan the lesson according to the selected instructional objectives (details follow in caption 2.20) in such a way that the necessary sequencing of the material can be executed without any active involvement of the pupils. In terms of FIACS, it means continuous use of only category 5, throughout the whole lesson.

Open Questions (Pattern II): In this study open questions refer to all such questions which may be answered in a number of ways and these allow pupils to introduce their own experiences and feelings. The content is so sequenced in relation to the selected instructional objectives as to follow a pattern of 'narration - open question - pupil response, - teacher feedback - open question or narration'. However, in certain cases the teacher is allowed to ask a few comparatively more structured questions before inviting the pupil response to a minimum structured question. As mentioned above, the pattern provides for the feedback by the teacher. The feedback has been structured in terms of teacher's positive and corrective responses only. The positive feedback implies a teacher's \times reaction to the correct responses of the pupil. He may praise the pupil for it or

and use pupil ideas in his own explaining. This type of teacher response to pupil answers is represented by category 2 and category 3 of FIACS. The corrective feedback implies a teacher's response to an incorrect answer given by pupil, where he does not outrightly reject the pupil. The teacher encourages the pupil to give correct answers by giving 'prompts'. The term 'prompt' means giving hints for further information. The corrective feedback also implies the use of 'extension moves' which Church (1971) has defined as calling for further or better information without giving any prompts. Teacher's use of redirection of the question to another pupil or himself answering it when a pupil fails to reply has been minimized. In terms of FIACS, it implies a pattern - 5, 5, 5, 4, 8, 8, 9, 2, 2, 3, 5, 5, 5, 4, 8, 8, 7, 7, 6, 8, 8, 5, 5,....

Though in FIACS, category 4 implies only questioning without differentiating between any type of question, in the present study, it implies open questions when used for this teacher behaviour pattern (Pattern II). Category 6 means here the academic direction or address move by teacher and category 7 means corrective feedback.

Narrow questions (Pattern III): This pattern implies a teacher's asking highly structured questions as opposed to open questions. These questions are in close context of the lesson contents. No feedback is to follow

pupil response. In terms of FIACS, it implies:

5, 5, 4, 8, 8, 4, 8, 8, 5, 5, 4, 8, 5, 5,

As opposed to pattern II, here the use of category 4 designates the use of narrow questions.

Narrow Questions with Feedback (Pattern IV):

This pattern envisages the use of narrow questions as for pattern III along with the use of feedback as described for pattern II. In terms of FIACS, it can be presented as: 5, 5, 5, 4, 4, 8, 8, 2, 2, 4, 8, 2, 3, 3, 5, 5, 4, 8, 6, 8, 7, 8, 5, 5, Here, the category 4 implies narrow questions and the interpretation of categories 2, 3, 6 and 7 is same as for pattern II.

The patterns of teacher behaviour as described above are illustrated with the help of diagrams given below. Pattern I has not been presented through diagram, as it refers to only one type of teacher behaviour - explaining or narrating.

DIAGRAM I

Flow Chart of Pattern II

INFORMING STATEMENT

OPEN QUESTION(S)

PUPIL RESPONSE(S)

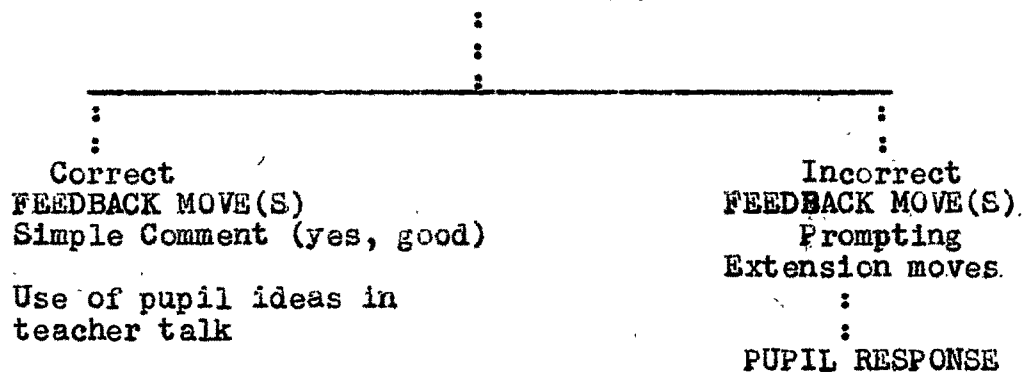


DIAGRAM II

Flow Chart of Pattern III

INFORMING STATEMENT

NARROW QUESTION(S)

PUPIL RESPONSE(S)

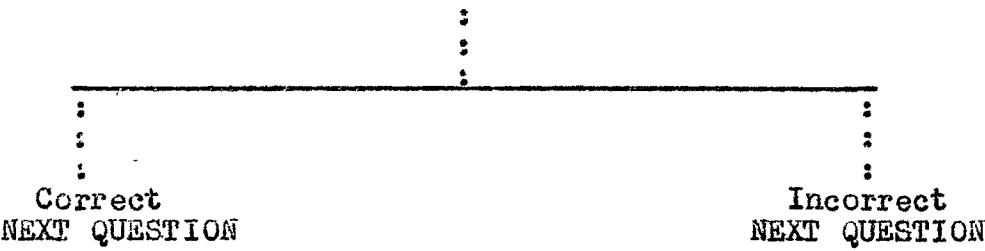


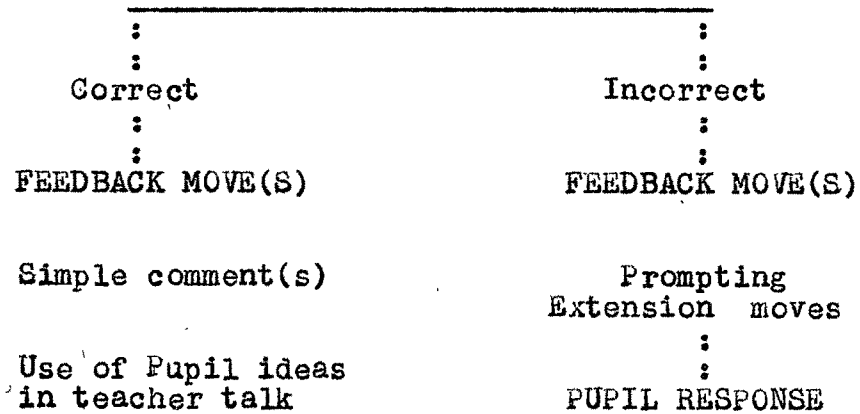
DIAGRAM III

Flow Chart of Pattern IV

INFORMING STATEMENT

NARROW QUESTION(S)

PUPIL RESPONSE(S)



The following excerpts provide examples of two types of questions - open and narrow and also of the strategies used for dealing with correct and incorrect pupil responses.

Excerpt from Pattern II

(Having introduced the caste system of Aryans, the teacher tries to develop the concept of the rigidity of their caste system as compared to the present times).

Teacher:	What are the functions of the Brahmin community today?	Open question Academic direction or Address move
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Rani:	They teach, they work as priests, as lawyers, doctors..	Pupil response
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Teacher:	That is correct, now-a-days Brahmins are doing different jobs.	Positive feedback
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	Now Kamala, what do you feel, is the caste system rigid or flexible at present as compared to Aryan period?	Open question
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Kamala:	I feel, it is still rigid.	Pupil response
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Teacher:	No, your answer is ⁱⁿ correct as still we follow caste system but rigidity is reduced. In the times of Aryans, they could only perform the religious duties and engage in teaching but not in other professions as is the case today.	Corrective feedback
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Excerpt from Pattern III

(Having introduced the caste system of Aryans, the teacher tries to develop the concept of the rigidity of their caste system as compared to the present times).

Teacher: (i) To which country did the Aryans originally belong to? (ii) Geeta.

(i) Narrow question
(ii) Academic direction or Address move

Geeta: Afghanistan

Incorrect answer

Teacher: To which western countries did they go?
Reeta.

Teacher poses next question without giving any remarks.

Reeta: Germany, Iran.....

Correct answer

Teacher: From which direction did they enter India?

Teacher does not praise, accept or reject but puts next question.

Excerpt from Pattern IV

(Having introduced the caste system of Aryans, the teacher tries to develop the concept of the rigidity of their caste system as compared to the present times).

Teacher: (i) To which country did the Aryans originally belong to? (i) Narrow question
(ii) Academic direction
(ii) Geeta.

Geeta: Afghanistan Incorrect answer

Teacher: It is a fact that they stayed for sometimes in Afghanistan but we cannot say that Afghanistan was their motherland. They originally belonged to Central Asia or Eurasia. To which western countries did they go? Reeta. Corrective feedback

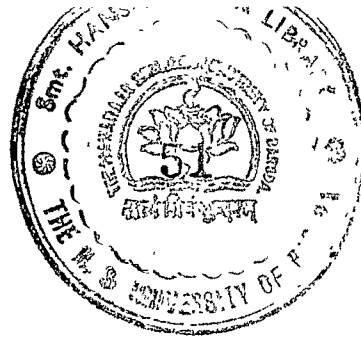
Reeta: They went to Germany, Iran, Egypt..... Correct answer

Teacher: Yes, that is right. Positive feedback
Now let us learn something more about Aryans. Teacher talk

2.20 PUPILS' ATTAINMENT IN TERMS OF INSTRUCTIONAL OBJECTIVES

The next concept involved in the statement of the problem is of pupils' attainment in terms of instructional objectives. It implies the achievement scores of the pupils on a post-treatment achievement test constructed specially according to the three selected instructional objectives.

The American Educational Research Association (1952) attempted to prepare a scheme in which criteria for teacher effectiveness have been arranged on a priority basis. The pupil variables as criteria of teacher effectiveness top the list. The pupil variables have further been divided into (i) pupils' achievement and success in life, (ii) pupils' achievement in subsequent schooling, and (iii) pupils' achievement of current educational objectives. For the present study, the pupils' attainment of current educational objectives has been taken as the criteria for the effectiveness of the four patterns of teacher behaviour (patterns described in caption 2.10) because of two reasons: (a) it is easy to define these objectives in behavioural terms, and (b) these can be objectively and easily measured as compared to other pupil variables. The selection of current educational objectives (referred to as instructional objectives) has been done on the basis of Bloom's (1956)



Taxonomy of Educational Objectives.

Bloom et al. (1956, 1964) have produced two taxonomies of educational objectives, one in cognitive domain and another in affective domain. The cognitive domain refers to such objectives which involve the mental processes of recalling, recognizing, comprehending, analysing and evaluating. The affective domain refers to such objectives as involve the feelings of appreciation, values or such other emotional expression. Out of the objectives in these two domains, the affective domain implies long-term evaluation as feelings and emotions cannot be developed immediately. This is one reason for which the instructional objectives for this study have been selected from cognitive domain and not affective. The second reason is of the subject content used for teaching purposes. A unit in History serves as the subject content. This discipline is more concerned with the processes involved in cognitive domain than affective. Hence, the three instructional objectives have been selected from the cognitive domain.

Bloom (1956) has divided cognitive domain into two major categories - (i) knowledge, and (ii) intellectual abilities and skills. The second category, namely, intellectual abilities and skills have further been divided into five sub-categories, namely, comprehension,

application, analysis, ^{synthesis} and evaluation. According to Bloom (1956) there is a hierarchy of these objectives with knowledge at the bottom and evaluation at the top. Sanders (1966) who has developed a taxonomy of classroom questions in cognitive domain corresponding to taxonomy of educational objectives by Bloom (1956) is of the opinion that every upper category is dependent on the one lower to it. For example, in order to comprehend one must know it. Skill of analysis requires the mastery of all two skills lower to it plus the knowledge of the relevant content. Hence, the objectives and corresponding classroom questions are hierarchical in nature. It was not possible to consider the whole taxonomy of educational objectives for specifying pupils' attainment mainly due to practical limitations. As such, the study is limited only to first three levels of the hierarchy for the specification of instructional objectives and consequently as the variables for measuring pupils' attainment, namely, knowledge, comprehension and application.

The knowledge category of the taxonomy implies knowledge of specifics, ways and means of dealing with specifics, and knowledge of universals and abstractions in a field. Knowledge category involves the mental processes of recalling and recognizing. Only the knowledge of specifics and terminology have been taken as the instructional objective pertaining to knowledge.

The level of comprehension is further divided into two parts - translation and interpretation. The task involved in translation amounts to acquiring the ability to move a communication into other language, using other terms or forms of communication. Interpretation includes a task involving the ability to translate as well as to perceive relationship between parts. Both these parts of comprehension have been specified as the instructional objective of comprehension.

Application is at a higher level than comprehension. It involves the ability of applying the knowledge in novel situations. Comprehension ensures the ability to apply but at application level, the learner actually applies it. For the present study application is defined as the ability to apply the gained knowledge in new situations.

A special test has been constructed incorporating questions for all these above mentioned three objectives to measure pupils' attainment in terms of instructional objectives (details of the questions according to items is given in caption 3.74).

2.30 OBJECTIVE OF THE STUDY

The study is an attempt to see the relationship between the process (four patterns of teacher classroom

behaviour) and product (pupils' attainment in three instructional objectives - knowledge, comprehension and application).

The general objective of the study is to see the relative effectiveness of the four different patterns of teacher classroom behaviour, namely, (i) narration, (ii) open questions, (iii) narrow questions, and (iv) narrow questions with feedback, upon the pupils' attainment for the instructional objectives of knowledge (k), comprehension (c) and application (a) belonging to cognitive domain of educational objectives.

The basic assumptions involved in the study are:

- (i) There are certain patterns of teacher classroom behaviour which teacher should create in the classroom.
- (ii) Teachers can be trained to produce these patterns.

The first assumption is the outcome of the reviewed research as reported in the previous chapter. The research studies on teachers' use of pupil ideas, criticism and approval on one hand (see caption 1.20) and teachers' ability to explain, question, prompt and give feedback (see caption 1.30) have helped to identify certain possible behaviour patterns (details given above).

Such findings which have shown positive relationship between certain characteristics of teacher classroom behaviour and pupils' attainment make it possible to label certain patterns though tentatively at this stage, which a teacher should be able to create in the classroom. It leads to the first assumption that there are certain patterns of teacher classroom behaviour which teachers should create in the classroom for improving classroom learning.

The second assumption can be justified in the light of the research designs employed by past researchers as well as the existence of training programmes of teachers. If teachers cannot be trained to behave in a certain way, the very existence of training programmes is challenged. Secondly, the past researches show (see caption 1.20) that teachers have been trained to produce treatment behaviours. As a matter of fact, the use of systematic observations now make it possible to train the teachers to produce certain behaviour patterns in the classroom and later on the validity of these patterns can be checked by observing the teacher using a relevant observation system suiting the purpose of the investigator.

These two assumptions lead to the very objective of the study - are there identified ^{able} teacher behaviour patterns related to pupils' attainment? As already stated

in the rationale of the study (caption 1.00), the investigator has attempted to go deep into this relationship by specifying pupils' attainment in terms of three objectives in cognitive domain.

2.40 HYPOTHESES

Keeping in view the above framework resulted from the critical review of related literature, the problem and the objectives, some of the following research and null hypotheses have been formulated:

- (i) There will be no difference in the attainment scores for knowledge, when the pupils are being taught by either of the four patterns.
- (ii) There will be relatively low attainment for comprehension and application objectives when the pupils are being taught through pattern I as compared to other three patterns.
- (iii) There will be comparatively high achievement for application objective when the pupils are being taught through pattern II.

The testing of these hypotheses is limited to fortyeight VII grade boys' and girls' classes of Municipal

Corporation schools of Baroda city. Only four patterns of teacher classroom behaviour are to be studied with respect to attainment of these instructional objectives in a selected unit of History. The results of the study may be studied and interpreted taking these limitations into consideration. The next chapter deals with the methodological aspects of the study.