# CHAPTER I

## INTRODUCTION

INTRODUCTION

CONCEPT OF INTERACTIVE DECISION

DEFINITION OF INTERACTIVE DECISION

FEATURES OF TEACHING DECISIONS

TYPES OF TEACHING DECISIONS

SEQUENCE OF TEACHING DECISIONS

CONCEPT OF QUESTIONING FOR FEEDBACK

NEED FOR THE PRESENT STUDY

STATEMENT OF THE PROBLEM

DEFINITION OF THE TERM

SCOPE, LIMITATIONS AND DELIMITATIONS

ASSUMPTION

SIGNIFICANCE OF THE STUDY

OBJECTIVES OF THE STUDY

HYPOTHESES

CHAPTER SCHEME OF THE REPORT

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## CHAPTER I

## INTRODUCTION

Teacher educators have frequently been questioned about the effectiveness of the teacher education programme. Researches have not yet given a big helping hand to them, but a few innovative alternatives, viz: role playing, microteaching technique, competency/performance based teacher education, etc. have emerged to strengthen teacher education programme in recent years.

Microteaching is one of the most recent influential innovations. It evolved as a partial solution of some of inadequacies of traditional teacher training programme. Microteaching was developed in the Centre for Research and Development at Stanford University, U.S.A. in 1960s, as a part of its teacher education programme. During the period between 1963 and 1967, microteaching technique was considerably refined and widely applied in a variety of educational settings in U.S.A. and the other countries.

Microteaching is a training setting for
the student teacher where complexities of the
normal class-room teaching are reduced. It is
a technique which belongs to a set of new
departures based on analytic approach to teacher
training. It helps teacher trainees acquire
teaching skills, one after another. In essence,
microteaching consists of a short teaching
period, with a small class and a small unit, a
follow up systematic feedback and re-teach
session with similar class using improved course
of action which has been planned after feedback
session.

In short, it is a technique of training
basically used to enable the trainees to acquire
discrete units of teaching, viz: teaching skills.

The microteaching techniques have now
become an integral part of teacher education in
Maharashtra. As a part of microteaching
programme, each student-teacher in College of
Education, takes practice of four or five
general teaching skills. The number of general
teaching skills exceeds ten.

Some of general teaching skills are as
follows:

1. Set Induction

2. Explanation

3. Questioning (Basic)

4. Questioning (Open/Closed)

5. Questioning for Feedback

6. Reacting

7. Reinforcement

8. Stimulus Variation

9. Black-board work

10. Use of Aid

11. Class-room Management

12. Closure.

As given in the list, questioning for
feedback as a general teaching, has direct bearing
upon interactive decisions of teachers and student
teachers as well.

CONCEPT OF INTERACTIVE DECISION

Interactive decisions are those decisions
that are taken by the teachers during the process
of teaching, and those decisions determine the
actual teaching behaviours of a teacher in the
class-room setting (Eggleston 1979).

Hence, changing interactive decision
behaviour of a prospective teacher becomes a

legitimate task of any teacher education

programme. However, the present practices of

teaching training pay emphasis only on overt

behaviour rather than covert thinking. Secondly,

there are hardly few teaching skills which have

potentiality to change covert thinking behaviour

of a teacher and his potentiality too, is not

tapped so far by the researchers. This is mainly

because of the present techniques of teacher

training which are more influenced by

Behaviouristic Psychology.

The recent trend in teacher education

indicates that the wave of Behaviourism is

diminishing in teacher education and the new

techniques are emerging having their origin in

Cognitive Psychology. These techniques are

useful to study and modify the thought processes

of a teacher. However, there is also a need to

explore the link between covert thought processes

and overt teaching behaviour.

In initial stage, those teaching skills

that have direct bearing on thought process can

be selected for this purpose. As stated earlier,

'Questioning for Feedback' is one of such skills.

The skill 'Questioning for Feedback' is useful for a teacher to test:

1. Assumptions of previous knowledge of pupils.

2. Understanding of recently taught content and

3. To change or mooify the course of action as per the demands of the situation which requires appropriate decision making as the part of teacher's thought processes.

Peterson and Clark (1978) suggested that teachers' decision making during interactive teaching involved teachers considering two or more alternative courses of action when they observed that the lesson was not going well. This conceptualization was based on Snow's (1972) description of teacher thinking during class-room instruction. It is cyclical process of observation of student behaviour followed by a judgement of whether student is within desirable limits, in turn, by a decision to continue the teaching process unchanged or to search memory for alternative teaching behaviour that might bring

student behaviour back within the limits of tolerance. If no alternatives are available in memory, the teacher would continue the class-room behaviour as previously; if the search yielded a plausible alternative, the teacher might decide to act on that alternative by changing the course of instruction or might ignore the alternative and continue as before.

The influence of 'Questioning for Feedback' upon decision making behaviour of the teacher is, therefore, a domain worth investigating and same is the aim of the present research study. In short, 'Questioning for Feedback' might have direct bearing upon interactive decision of teachers and student-teachers as well.

The concept of 'Interactive decision' is, therefore, discussed thoroughly here in this context.

The dictionary meanings of word 'Decision' are as follows:

1. The action of deciding,

2. Settlement, conclusion, judgement, resolution,

3. The quality of being decided,

4. Making up one's mind,

5. The choice of a course of action,

6. The choice arrived at after comparing served
   courses of action.

$$\begin{pmatrix} \text{J.Sutcliffe and R.Whitfield,} \\ \\ \text{Pp 9,1979} \end{pmatrix}$$

From the given list, it can be said that all
human activities involve decision making including
teaching.

## DEFINITION OF INTERACTIVE DECISION

Some of the important definitions of decision
making available in the literature are as follows:

1. Sutcliffe and Whitfield (1979) defined a decision
   as a conscious act that occurs when at least two
   alternatives are available the choice to change
   behaviour and the choice not to change the
   behaviour.

2. Marland (1977) defined a decision as a conscious
   choice but then he used a more restrictive
   operational definition of an interactive decision.

He coded a teacher's report of interactive

thinking as an interactive decision only if it

includes all the following:

(a) Implicit reference to consideration of

alternatives.

(b) Evidence that the teacher made a selection

and committed to one of the alternatives and

(c) Evidence that the teacher followed through

in the lesson with the choice of alternatives.

In short, it is categorized as 'Deliberate

Act' which appears to reflect more closely

to be conscious choice.

3. Similarly, Wodlinger (1980) defined 'Interactive

Decision' as consisting statements or units in

which teachers' thoughts were focussed upon the

delivery of instructional material or student

learning. Wodlinger indicated that the teacher

must have reported a deliberate act/choice to

implement a specific new action.

(As cited by Peterson and Clark 1986)

4. Shroyer's category of 'Elective Action' also

fits into the above definition of teachers'

interactive decision. Shroyer first identified

what she called 'Student occlusions'. She
defined it as a student's difficulty or
unexpected student performance in the class-
room. She then argued that when confronted
with a student occlusion, a teacher elects
to respond with same action. She used the
term for it 'Elective action'. What she
meant by a decision because decision has
traditionally implied the consideration of
alternatives, a process for research on
interactive teacher  thought which has found
little support.

To summarize the above definitions,
interactive decision has some significant
characteristics. They are as follows:

Interactive decision is:

(a) Conscious choice

(b) Deliberate act

(c) Elective action

Shavelson (1973) also puts forth similar
features of decision making as given below:

## FEATURES OF TEACHING DECISIONS

The first feature of a decision involves

the choice of a teaching act from 'alternative acts'.
Alternatives might be individual teaching acts,
sequences of teaching acts or microteaching methods,
and macroteaching methods. The teacher may choose
probing questions from a repertoire of teaching
acts that might have included positive verbal
reinforcement, factual questions and silence.

A second feature, 'States of nature', refers
to environmental conditions, which are not directly
under the teacher's control but which influence the
effectiveness of a particular course of action.
These influences arise in or out of the class-room.
The most important states of nature are the
students' cognitive, affective and social states.
The teacher might think it more probable that the
student had completed and understood his home work
(one possible state of nature) than that he had
not understood the home work (other possible
state).

The third and fourth features are the
outcome and utility for the teacher of a particular
course of action under a particular state of nature.
The outcome feature means that at least one outcome
can be identified for each combination of a course

of action with a state of nature. For example,
the student may have learned to do his home
work, to avoid rising his hand to answer a
question and to dislike the teacher.

The fourth feature, utility, a measure
of outcome can be transformed to correspond to
the teacher's subjective interpretation. The
probing questions are probably valued highly by
the teacher to help his student 'discover'.

A fifth feature is the goal or set of
goals, the decision is intended to help
attain. These goals may cover the domain of
educational goals. The teacher's goal may be
perhaps to have his student 'discover' something.

Sutcliffe and Whitfield classified the decision in the different types. They are as follows:

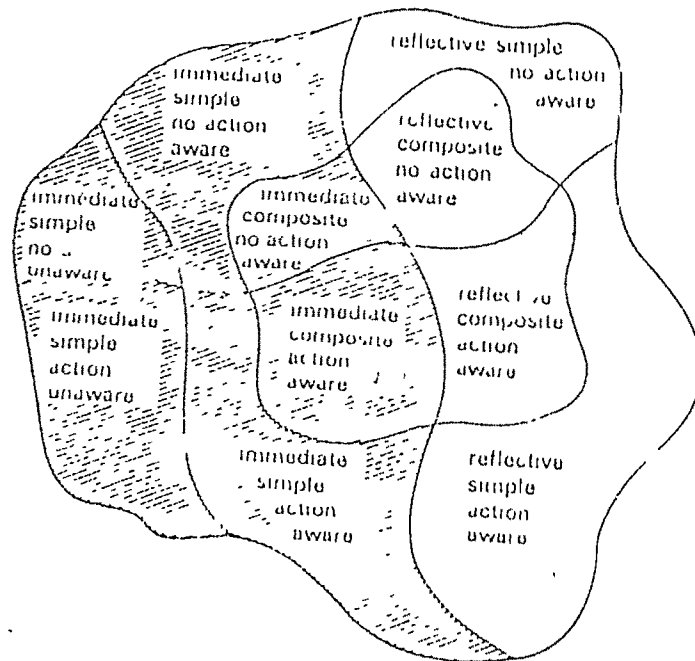TYPES OF TEACHING DECISION/TEACHER DECISIONS



Fig. 1 : A map of some categories of
class-room teaching decisions.

As shown in the figure, the classification of teaching decisions is necessary in order to describe, analyse and interprete teaching behaviour.

In such a classification, a first
dichotomy is 'immediate and reflective'.
A category consisting of 'Null' decisions.
This gives rise to a second dichotomy
dependent upon whether the decision
manifests itself as an act or not. Such
poles of this dichotomy are known as
'action' or 'no action' (null). A third
dichotomy involving the awareness or lack
of awareness of the whole or part of the
decision process by the teacher.

Consider a decision by the teacher
to summarise verbal information by means
of a written test on the blackboard.
(This might be an out-of-lesson reflective
decision or a within-lesson immediate
or on-the-spot decision). Such school

lessons have revealed the need for a
fourth dichotomy. Having decided to
form such a list, each addition to it is
interpreted not as a separate decision
but rather as continuing steps in the
execution of the original decision.
However, the teacher's decision continued
addition to the list over time is an
example of a 'composite' decision, which
is to be contrasted with a 'simple'
decision in which there is no repetitive
element or temporal extension.

To summarise, therefore, the
basic distinction between immediate and
reflective decisions, the primary concern
of initial researches has been with

the immediate decisions. Those decisions which occur in response to observable environmental stimuli and which are perceived by the teacher as requiring an immediate response. It is the pupil's interactive behaviours, giving rise to the environmental stimuli within the class-room.

Immediate decisions may be consciously monitored or there may be no conscious awareness of the process by the teacher. Immediate decisions give rise to an observable act by the teacher or there may be no change in the ongoing observable teacher behaviour. Also, immediate decisions may be of the composite kind.

The figure 1 illustrates the relationship among ten subsets of decisions formed by the four dichotomies. The dichotomies shown in the figure are:

1. Immediate/reflective
2. Aware/unaware (of the decision process)
3. Action/no action by the teacher (no change,
   'null' decision)
4. Simple/composite (the decision gives rise to
   one or more similar actions,
   separated in time)

In addition to the classification, the content of the decision itself gives rise to another classification system, as follows:

i) Immediate decisions associated with the subject matter, the lesson content.

ii) Immediate decisions associated with apparatus and other aids, appropriateness of illustrations, timing of introduction.

iii) Immediate decisions associated with pupils' behaviour.

    a) Isolated individuals:   Verbal behaviour
                                         behaviour involving objects, materials or property.

    b) Interactive pupil-
       pupil              : Verbal behaviour

       Interactive pupil-
       teacher          : Physical behaviour

iv) Immediate decisions by the teacher associated with the amendment of the teacher's behaviour.

(Sutcliffe and Whitfield 1979)

Apart from the classification, another important aspect of decision is the sequence.

## SEQUENCE OF TEACHING DECISIONS:

To describe the sequence of decisions by the teacher, each decision can be represented as a node on a decision tree. One possible representation of a decision tree/sequence of teaching decision is given in figure No.2. The figure No.2 shows the temporal sequence of teacher decision making during a lesson. The nodes on the tree are decision points; the dotted lines indicate alternative teacher options perceived by the teacher or an observer which were not selected/chosen at the time. Thus, the continuous line depicts what may be termed the teacher/lesson vector.

On either side of the nodes are, respectively, perceptions/recognitions of a decision situation resulting from some stimulus and action arising from choice and/or decision.
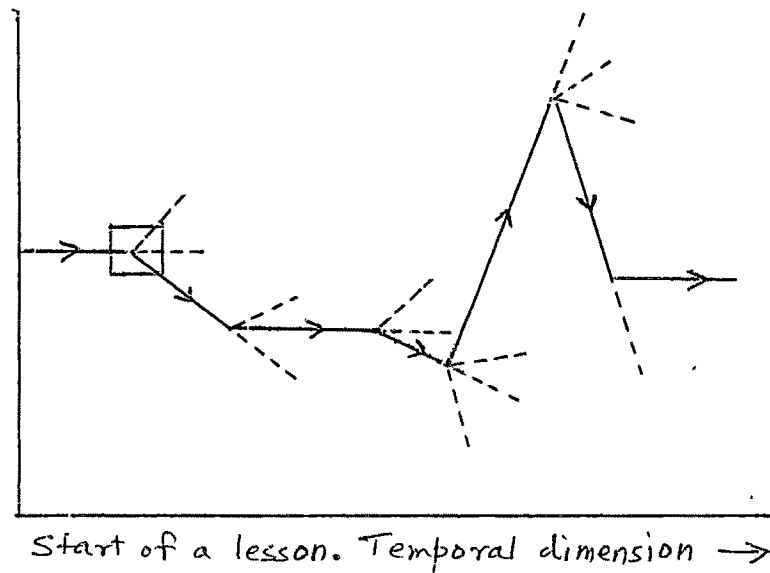
Start of a lesson. Temporal dimension →

**Fig. 2: Decision tree representing the sequence of a teacher's decisions.**

Another scenario demonstrating a sequence of teaching/instructional decisions may help in understanding this kind of analysis of teacher's decision making. This sequence of decisions can be also characterized as Test-Operate-Test-Exit sequence, or a TOTE unit. Shavelson's concept of a TOTE unit can be applied to any common teaching episode as follows:

The teacher begins by testing (T) whether the student has sufficient information available

to group instances of a concept, for example,
information available versus information needed.
If the result is incongruity, that is, the
information available is less than the information
needed, the teacher moves to the operate (O)
component. Here, the teacher readjusts the
subjective probabilities with respect to the
student's learning state; he determines the
optimal basic skill (teaching act) and then
exercises that skill. At least four operations
are carried out at the (operate) (O) component.
It is a better representation of this component
which is a hierarchy of TOTE units.

Again, the teacher tests (T) whether the
student has sufficient information. If the test
result is congruity, that is, the information
available equals or exceeds the information needed,
the teacher exits (E) the phase, and moves to the
next. The progress from phase to phase can be
characterized as the teacher's plan (the decision
tree).

Majority of the decision making nodes are
related to the questioning behaviour of the teacher

in the class-room teaching. Questioning for
feedback is one of the important skills which is
likely to influence the decision making behaviour
of the teacher.

## CONCEPT OF QUESTIONING FOR FEEDBACK

The term, 'Questioning for Feedback' may be
studied in the light of the meaning of the feedback.
The meaning of feedback is as below:

Feedback is communicating to a person or
group about how his/their behaviour has affected us
or other people. This communication can be in the
form of a spoken word, a gesture or an action.

The functions of feedback follow the
definition of feedback.

The functions of feedback are:

(1) To make a person aware of the effects of his
behaviour on the other people so that he may
change or discard ineffective modes of
behaviour, or support certain kinds of
behaviour that are effective.

(2) To know a person where he stands in the group

and how he is seen by other members.

(3) To help a person answer the question, 'Who
   am I ?'.

(4) To help a person evaluate his progress towards
   his goals and how closely his behaviour is
   related to his intentions.

The feedback is of two types:

(1) Receiving feedback and

(2) Giving feedback.

To be useful to the person receiving the
feedback, the giver should be able to

1. describe his own reaction to the behaviour,

2. describe the specific behaviour or incident
   that evoked the reaction,

3. give the feedback as soon as possible after
   the behaviour occurred and

4. take into consideration the needs of the
   person on the receiving end of the feedback.

It is useful to think about destructive
versus constructive feedback. Feedback is
destructive when it is given only to hurt or to

express hostility without any goal of improving
the communication between people. It may also be
destructive when only derogatory or extremely
critical statements are given without any balance
of positive evaluation.

Therefore, feedback is useful to a person
when:

1. It describes what he is doing rather than
   placing a value on it.
2. It is specific rather than general.
3. It is directed towards behaviour which the
   receiver can do something about.
4. It is well-timed.
5. It is asked for rather than imposed.
6. It is checked to ensure clear communication.

The teacher should be able to receive
feedback given by pupils during class-room teaching
and make use of the same for changing his teaching
behaviour.

## NEED FOR THE PRESENT STUDY

As stated earlier, the skill for Questioning
for Feedback helps teacher to elicit feedback from

pupils. The feedback that teacher receives has direct bearing upon teacher's interactive decision making which further leads to change of course of action. Thus, this particular teaching skill may directly influence teacher's thought processes and decision making.

The researcher intended to explore the influence of 'Questioning for Feedback' upon interactive decision making of the teacher-trainees.

The statement of the problem is as follows:

## STATEMENT OF THE PROBLEM

"A STUDY OF AN EFFECT OF TRAINING IN QUESTIONING FOR FEEDBACK UPON INTERACTIVE DECISION MAKING OF TEACHER-TRAINEES".

## DEFINITION OF THE TERM

(1) Questioning for feedback:

It is defined as a skill of asking questions to test assumptions of previous

knowledge and pupil's understanding
of learning material in order to
change the course of action as per
situational demands.

(2) <u>Interactive Decision making:</u>

(A) It is defined as the 'conscious
choice' by the teacher during the
class-room instruction.

(Shevelson, 1973)

(B) It is also defined as 'a conscious
act' that occurs when at least two
alternatives are available -
the choice to change behaviour and
the choice not to change behaviour.

(Sutcliffe and Whitfield, 1979)

(C) The term 'interactive decision making' is defined as 'deliberate act' whenever a teacher saw the need for some action or response but considered only one course of action and then stated the reason for doing so.

(Marland, 1977)

(D) Similarly, it is defined as consisting of statements or units in which the teacher's thoughts were focussed upon the delivery of instructional material or student learning and in which the teacher mentioned the consideration of choice behaviour.

(Wodlinger, 1980)

## SCOPE, LIMITATIONS AND DELIMITATIONS:

In this study, as a part of its training, treatments included the development of the self-instructional material on 'Questioning for feedback'. It would be useful with little modifications to all teacher-trainees, both pre-service and in-service teachers.

Hence, the scope of this study was large and it had relevance to teacher education programmes at all levels.

However, the study had the following
limitations which should be made explicit here.

1. This study was restricted only to the
   population of pre-service student-teachers
   admitted in Vasantrao Naik College of
   Education, Dist: Kolhapur.

2. The study was conducted on a sample of twelve
   teacher-trainees of B.Ed. selected randomly
   from the students enrolled in Vasantrao Naik
   College of Education, Dist: Kolhapur.

   This would impose limitations generally on
   the findings of this study.

Delimitation:

There were seven types of decisions that
teacher took in the class-room. The teacher had
to take decisions about lesson content, teaching
style, the motivation of the class, the incentives
or disincentives to apply, the resources to use,
the moments to change the course or pace. Due to
the time and other constraints the study was
delimited only to four types of decisions, viz:
lesson content, teaching style, the incentives or

disincentives to apply, the moments to change
course or pace.

The study was based on the following
assumptions:

## ASSUMPTIONS

1. When a teacher reports the content of short
   term memory he/she currently attending, it
   generates the valid and reliable data of his/
   her thought processes. This assumption is
   essential because of the method of inquiry
   used on this study.

2. Decision making behaviour is amenable to
   change.

3. The teacher-trainees try to take the
   appropriate decisions during teaching in the
   class-room when they are trained to do so.

## SIGNIFICANCE OF THE STUDY:

1. This area is still unexplored and the present
   study should be treated as one of the early
   attempts to explore it.

2. There is no self-instructional material

available on 'Questioning for Feedback' in
Marathi. Therefore, it will cater to the
longstanding need of teacher-trainees in
Colleges of Education in Maharashtra.

3. The use of this material will be more
economical with respect to money and time
especially on the background of scanty
duration of teacher-training programme in
Maharashtra.

4. The one year B.Ed. programmes and B.A.B.Ed.
(Integrated) programmes in Shivaji University
have been recently changed. The revised
programmes are heavily loaded with practical
work. Therefore, use of this self-instructional
material will reduce the burden of teacher-
educators.

5. The study will highlight the relation between
overt behaviour and covert thinking of
teacher-trainees.

6. In the light of the findings of this study,
effective techniques of changing the teacher
thought process can be developed which can
be incorporated in teacher education programme.

The objectives of the present study are
as follows:

## OBJECTIVES OF THE STUDY

(1) To develop self-instructional material on the
skill of 'Questioning for Feedback' for the
purpose of training.

(2) To investigate decision making behaviour of
teacher-trainees.

(3) To study the effect of training in 'Questioning
for Feedback' on decision making of teacher in
the class-room instruction.

(4) To study the effect of training in 'Questioning
for Feedback' upon General Teaching Competency
and the related component of teaching skills.

This study will be focussed on the following
hypotheses:

## HYPOTHESES

(1) There is no change in decision making of student
teachers before and after receiving the
training in 'Questioning for Feedback'.

(2) There is no change in general teaching
competency of student-teachers before and
after receiving the training in 'Questioning
for feedback'.

(3) There is no change in the performance
related to 'Questioning for Feedback'
before and after receiving the training in
the skill.

The thesis consists of the following
chapters.

CHAPTER SCHEME OF THE RESEARCH

(1) Introduction

(2) Review of related literature

(3) Preparation of self-instructional material

(4) Research procedure or design

(5) Analysis and interpretation of data

(6) Summary, conclusions and recommendations