CHAPTER- I
INTRODUCTION

1.1 BACKGROUND

The seeds of civilization may have been sown in the mind of human being with the birth of first question. The birth of question must have led to the process of thinking and reasoning to unfold the unknown of nature around him. The question, of course, might have made the man hearty. Probably, he could not content himself with one question alone. Each succeeding question must have added to his fund of environmental secrets loaded with germs of civilization. The unending questioning-answering chain, the mother of the present culture and civilization, is still on. It will continue to be so in the times to come as it is the key to cultural enrichment and growth of civilization.

The process of questioning-answering as the key to enculturation and encivilization is best illustrated by the developmental mode of the child. As soon as the child lands into new environment, the varied stimuli raise a stream of questions in his mind. He looks and swindles around to seek answers to these streams of questions. He explores the mother, the life giving object, her geography particularly the resource of milk. Gradually, he explores further-her voice, gestures and movements etc. The process continues with other persons and objects surrounding him through different sensory observations and corresponding reactions to these observations. The life of the child, rather the man himself, can be best described as an never-ending questioning-answering chain exemplifying the seeker in him which leads to self actualization through cumulative learning. Questioning-answering is a powerful means of learning for the human beings, the real key to civilization certainly. Thus it is clear that questions
are potential sources of learning process. Classroom questioning is an instructional tool in use since times immemorial. One can recall the use of questions as a tool of teaching in ancient discourses between the ‘Guru’ and ‘Shishya’ as well as planned ‘Shastrath’. The use of questions as means of teaching was also used very effectively by Socrates. This has given the classical method of teaching known as the Socratic Method. One does not find any time in the history of teaching when questioning has not occupied significant position.

It is clear that question is an instrument of informal education right from the inception of human civilization. A question is a verbal utterance that seeks a response from the person to whom it is directed. It is a means of finding out and interpreting data. However, it is more than a logical grouping of words punctuated by question mark. It’s most important offering is its value for stimulating and directing thinking and reasoning. ‘Questioning is an effective stimulus and it is readily available to classroom teachers’. A well-developed understanding of the components of questioning behaviour as well as skill in using it effectively and judiciously, becomes one of the most valuable tools with which the teacher can assume his responsibilities as a manager of teaching-learning. Effective questioning is not an innate talent that only a few possess; it is a skill that can be developed with continuous practice. It is one of the teacher's basic tools of communication skill.

Realizing the significance of questions, the first formal teacher might have laid his hand on this powerful tool of learning. The story of great teachers in different cultures bears evidence to this fact. They raised curiosity of the child to explore, discover and invent with the aid of carefully designed teaching-learning situations. They led the children to criterion responses through well designed teaching-learning situations in which questioning constituted the main ingredient. Questions, therefore, provide powerful
means of learning, more so in specifically designed formal instructional situations in the classroom.

1.2 CLASSROOM SETTING

Setting is used as a broad term covering all aspects of the chronological and institutional context in which any particular classroom is to be found. The usage, which follows Strauss (1964) could be seen as equivalent to an ‘ecological’ approach to the interaction (Eggleston, 1977). Thus, it comprises chronological aspects of classroom, the formal organization of the school, the social and educational context and the physical surroundings in which they take place.

1.2.1 Chronological Setting

Classrooms can only be understood when it is accepted that they are situated in time. They are never static. Traditional educational research, both inside and outside classrooms, has neglected this crucial point. Any individual classroom encounter between a teacher and class can be conceived as an intersection of pupils’ careers and the teacher’s career. Now, it can be argued that, given the conceptualization of classroom life as the generation of shared meanings, a chronological understanding of the development of such meanings is an essential prerequisite for the understanding of much of what one observes in the classroom.

1.2.2 Physical setting

Three aspects of the physical setting of classroom encounters may usefully be distinguished: the spatial relationship between the classroom and the rest of the school, the location of the school, and the lay out and decoration of the classroom. The location of any particular school will of course have important outcome for the nature of the classroom talk.
The spatial relationship between classrooms and their surrounding school can have far-reaching repercussions for teaching and learning. The use of material on the lay out and decoration of the classrooms provides assessment to the interactions going on inside them.

1.2.3 The Institutional Setting

The term ‘institutional’ refers to the classroom’s background – the whole school. All schools have a set of rules and policies concerning the pupils’ conduct - the sphere of discipline. The four walled classrooms with a door have distinct sphere of discipline as compared to the open classrooms. There is difference between the private province of the teacher and the public field of the wider classroom where behaviour is visible. If the three aspects of the teacher's role, custodial, bureaucratic and “Knowledge imparting” are separated, it is clear that the two former are usually visible to associates while the third is not. All three aspects can be pertinent when studying classroom interaction, but only the first two are normally important in the wider organization. Beecker (1953) holds that the individual teacher's support of the “authority system” is the crucial element in his relationships with associates. In contrast, the academic content of the teacher-pupil relationship is generally unseen and non-accountable.

1.2.4 The Educational Setting:

The classroom has to be seen against a background of an ongoing educational system operating at school, local and national levels. Educational policies relate to such issues as the choice of curricula, forms of assessment, provision of appropriate texts and other resources and ‘proper’ qualifications for staff members. All such policies must be understood in relation to the school’s location in a grid of classifications and frames, pertaining to all subjects included in the school’s work.
Michael Bassey (1986) points at two major faults of conventional research in classroom: it is wordy and it is general. If one is truly interested in action in the classroom, doing something about something, then the briefness of a report is at a best. Given briefness, busy teachers can be practically encouraged to examine and report on what they are doing; and their colleagues can involve themselves in the report without having to labour through a weighty tome. Bassey stresses the essential difference between the academic researcher and the teacher researcher as being that of watcher and actor respectively. Both can have judge to and can gather the same kinds of information which are available in the classroom, but the difference in significance - acting rather than observing - is crucial.

Bassey holds that academicians are watchers of the world: teachers are actors in it. Teachers make decisions and search for “right” decisions. Such decisions are directly related to classroom teaching. Classroom teaching entails assessing the educational needs of the pupils, identifying purposes for what one hopes they will achieve, locating suitable resources and working out appropriate strategies whereby the intentions may be attained. The acts of defining needs, intentions, resources and strategies all require decisions, which although involving value-judgements, can be enlightened by empirical facts.

1.3 TEACHING STYLES

Teaching is not a mechanical process of conveying knowledge and information from the teacher to the student. It is not a monologue but a dialogue. Teaching has to inspire and motivate the learner to go ahead on the road of investigation and innovation. Teaching is to motivate the student to learn and acquire the desired knowledge, skills, attitudes and also desirable ways of living in the society. According to Burton, “Teaching is the stimulation, guidance, direction and
encouragement of learning”. Teaching is thus a communication between two or more persons who influence each other by their ideas and learn some thing in the process of interaction.

Robert Gagne (1965) defined teaching in a psychological manner when he said, “Teaching means arranging conditions of learning that are external to the learner these conditions need to be constructed in a stage-by-stage, each stage is the just acquired capabilities of the learner, the requirement for retention for these capabilities.” Teaching, therefore, is a process of communication for achieving certain goals. Kulkarm (1986) has therefore defined teaching as, "the process wherein conditions are deliberately created (environment organised) to enable a specified learner (or group of learners) to behave in a specified manner to perform or to experience certain desired objectives.” Teaching thus aims at helping learners to learn or change their behaviour in a relatively everlasting approach and involves arrangement of situations for assisting-learning. This ‘help to learn’ and ‘arrangement of situations’ requires a specified style which can be termed as the teaching style.

1.4 ARGUMENT AND CONTEMPLATION IN TEACHING

Philosophers have suggested that we can improve teacher thinking - and hence teaching and education - by improving the premises in teachers' practical opinions. They assume that if we can assure that teachers’ premises have empirical reference and that they are complete and rational we can make progress toward improvement. This essay examines the concept of practical argument, considering questions such as how does rationality manifest itself in teaching? Must thinking of consequence for action be necessarily and centrally connected to decisions about what to do? Do values of theoretical reasoning, such as universality, logical order, explicitness, and completeness translate to the practical domain? The author argues that relying on practical arguments for the
improvement of teaching ignores the extent to which teaching is an act of wisdom and belongs to the contemplative life. She contends, second, that in representing teachers' arguments for purposes of analysis and improvement - we must make good the distinction between simplification and misrepresentation. She concludes by discussing some major philosophical difficulties in the analysis of practical reasoning that need to be kept in mind if researchers and teacher educators are to work with the concept of practical argument to good rationale. In their various ways, scholars in education are committed to improvement. For several years now they have been discussing whether one can improve teacher thinking - and hence, presumably, teaching and education - by improving the premises in teachers' practical arguments, that is, arguments consisting in the search for a plan of action.

This notion stems from the work of Green and Fenstermacher (1976), it implies that, if we can make more sure that teachers' premises have empirical reference, that they are complete and coherent and that their overall arguments about what to do are cogent, we can make some progress toward improvement. Underlying this notion is the idea that we will be better off to the extent that we can move from `subjective' to objective forms of reasonableness. Stuart Hampshire (1983) has expressed the philosophical attachment to rationality in thought about action with eloquence:

The more explicit a man is in formulating to himself the ends of his action, and the grounds upon which his decisions rest, the more he is aware of himself as having made choices between specific possibilities, choice that are always subject to revision. The more self-conscious he is in his criticism of his own intentions and activities, the more he is aware of the limits of his habits of classification, limits that determine the possibilities open to him. He becomes aware also of the limits set by the conventions of communication and classification into
which he was born.... An irrational man does not pause to establish self-consciously in his own mind the exact order of dependence of his own opinions and intentions. He is not active in reviewing the whole range of his opinions and intentions, but rather passively finds them forming and changing, without the deliberate imposition of an order on them. He is so much less free and self-determining.

It is not uncharacteristic for philosophers to assume that, if we get our ideas and arguments straight, all will be well with the world. But some empirical researchers have also been attracted by the notion of teachers' practical arguments. The emphasis on arguments fits with the research interest in teacher thinking and the prevailing belief that reflection is a good thing in teaching. It seems to give the term `reflection' a fairly clear interpretation and yields some ideas about what the improvement of teacher thinking may require: where one should start, and where one should go. Moreover, arguments can be assessed on grounds that go beyond personal taste and preference, tradition or power. The concept of argument in this sense carries evaluative as well as descriptive meaning, for an argument that is not sound or tenable is no argument properly speaking.

If criticism is of great import in either domain, does it point shift or change in thought about action? We criticize people, including ourselves, when we have not lived up to a promise, have been ungraciously truthful, done a good thing but halfheartedly, compromised our best self, and, generally, not done what others had a right to expect, given the circumstances. The moment of choice or of moral insight is a moment of truth only in a manner of speaking that points to ultimate things - as well as to conventions. If we are unclear about what overarching value, or values, we are trying to preserve in practical arguments, we cannot tell what their improvement requires.
And must thinking of consequence for action necessarily and centrally be 'busy', and directly connected to decisions? This is not just the sort of idle question philosophers will ask. For, relying on practical arguments in the improvement of teaching ignores the extent to which teaching is an act of wisdom and belongs to the contemplative life. This is the first and most fundamental way in which the notion of practical arguments as an approach to the conceptualisation and study of teacher thinking must be qualified.

St. Thomas Aquinas (1966) considers the active and the contemplative life in Summa Theologize. Contemplation is an immanent activity requiring an agent but no outward effect or recipient. Beginning and ending in itself, the contemplating life has a certain freedom. In the active life, we work to affect things or other people and are often ruffled by their recalcitrance and the force of circumstance. The contemplative life also involves personal application (cogitation and meditation). But its essential qualities are those of restfulness and joy, as we come to understand some desirable or lovable good - especially any truth whatever - and dwell on it. This requires clarity of vision and serenity in the concentration of faculties. In the words of St. Thomas, contemplating refers "to a simple gaze upon a truth".

As an interior act of seeing, contemplation engages the emotions, the will, and the moral virtues, insofar as the latter dispose one towards peace and purity of heart. Relieved from the quality of wanting in any immediate or distracting sense, the contemplative life does not comprise the accidental rewards of (external) labour; instead, its fulfillment lies in ultimate truths and in a perfection of the human mind and its happiness. The delights of contemplation stem from the activity itself and from the value of its admirable objects. Since we are rational animals, we see in truth something we love and desire to be enlightened.
Here contemplating seems to move close to examination or investigation. But, while admiration and joy are compatible with enquiry in any domain, its simplicity and repose mark off contemplation from research, logical analysis, or reflection on action which try to penetrate where contemplation aims more to receive. In manner and kind, the essence of contemplation is likewise different from the `self-denial' of objectivity and logic, which both encompass assertion: the laying and vindicating of claims.

Though the active and the contemplative life can be distinguished, both are forms of human life, and in an actual existence now one, now the other form will predominate. And it is possible for action to lead to contemplation and for contemplation to lead to action: both forms of life are complementary. However, as Aquinas points out, the "return to the active life from the contemplative is by way of direction, in that the active life is guided by the contemplative". Divorced from the contemplative life, the active life would be cut off from its source of value.

These are strong claims, implying that action is appropriately guided by aiming to see things - objects, concepts, events, relations, people - as they are, in the first place, and that (ultimate) value cannot be conferred upon action by its conformity to human needs and wants, as aspects of utility. Yet there is no great difficulty in applying these claims to teaching, where action and decision need to flow from, and return to, the pursuit of understanding subject matter (objects, concepts, events, relations) and people, just as they are, and where action without reference to the ultimate good of learning would be without rudder.

Hence, it makes sense to ask, with St. Thomas, whether teaching belongs to the active or to the contemplative life. Referring to Aristotle, Aquinas points out, first, that the ability to teach is an indication of learning. And, since wisdom or science (knowledge and truth
in the widest sense) belong to the contemplative life, teaching belongs to the contemplative life. He extends this point by stating that, "it seems an office of the contemplative life to impart to another by teaching, truth that has been contemplated." Office here has the meaning of `good office', a kindness or attention in the service of others; thus he explains in another volume of Summa Theologize, "just as it is better to illumine than merely to shine, so it is better to give to others the things contemplated than simply to contemplate."

The subject matter of teaching, or its first object, is, accordingly, the consideration and love of truth in all its forms, with the teacher taking delight in that consideration and love. Compared to the external acts of teaching, even practical arguments, this object and associated activities have logical, though not necessarily temporal, priority. In teaching, the contemplative precedes the active life because of its nature, and the nature of teaching. (Note that the life of contemplation is not to be equated with reflection-in-action, or even reflection on action.) Without aesthetic understanding, what can one say about a child's drawing, except that it is `nice' or `true' to nature'? One needs to have a grasp of the concept of number - and enjoy thinking about the concept, thus complicating one's understanding - to help others think about what a number is. Still, teaching aims at those others and is conveyed through external acts, for instance, speech; and those to whom contemplated truth is communicated are therefore its second object.

That one's attention is urged on, towards the second object of teaching, also follows from the relation that there is, in human life, between what one most delights in and the wish to be sharing it with other people, particularly one's friends. Aristotle writes in the Nicomachean Ethics, "whatever existence means for each class of men, whatever it is for whose sake they value life, in that they wish to occupy themselves with their friends". We speak of teaching where existence
means understanding. But to the extent that the concept of teaching involves as its second object other people - aiming to enlighten and perfect them - teaching belongs to the active life and requires its exertions in the spirit of fellowship and kindness.

Aquinas concludes that teaching sometimes belongs to the active life and sometimes to the contemplative life. Yet, to reiterate, in moving from contemplation to action in teaching we do not subtract the contemplative but add the active dimension. Put differently, teaching is not a life of action tempered by occasional fits of abstraction, but the active life in teaching "proceeds from the fullness of contemplation."

Perhaps when teachers tell us that they decided to go into teaching because they love children some mean loving to look at children attentively: holding them in regard - notice, care, value - thus seeing them not only accurately but justly and lovingly. The work of attention is never finished; it is a source of self-sustaining joy not readily exhausted. Surely, this form of contemplation is required by teaching as well, though we may shrug off its ordinary manifestations in teacher talk. One might say that teaching requires a pure heart and a very open eye, trained toward knowledge and people, and alight with a regard that raises one's sights.

More adequately represented, the arguments of teachers will, of necessity, involve contents, persons, conflicts and interpretations; together with criticism and regrets, these elements account for the continuity and inconclusiveness of teacher thinking, as well as for its abiding interest. Related to this, these arguments will always be defensible, for their conclusions can be faulted or made void. Coming to a decision is not like climbing up a ladder of beliefs and desires and, having reached its final rung, jumping into action to bring about a desirable state of affairs. The difficulty is that, having reached a conclusion, there are
always further premises that, being added, could turn the pondered action into rather less of a good thing, or reverse its course altogether.

Teaching routinely involves multiple pairs of obligations - binding claims on practical and contemplative attention - where, if one is satisfied, the other cannot be. But attending to one student who needs encouragement does not make the teacher's obligations to see to the learning of the whole class disappear. And there is no simple answer to the question of how to honour the personal liberty of students while teaching them academic subjects, since disciplinary arguments must often override personal beliefs. Still, it is very important not to step all over evolving minds. Philosophical and empirical studies indicate that such moral dilemmas are 'resolved' by successive decision installments that bypass one horn of the dilemma and deal with residues later. Accordingly, teachers' arguments are open-ended processes - riddled by pros and cons - in which the conflict of values can at best be toned down to co-existence. ‘Redressing’ conflict in this fashion affects the criterion of co-existence. Unlike the criterion of consistency, it becomes, as Richard Waldheim stresses, “personal and affective”; what co-existence requires "is the reduction of conflict at least to a level that the person himself has discovered he can tolerate”.

Yet to analyze teachers' reasoning one has to simplify it and divide it into temporal segments or discrete events. Owing to this methodological move, intentional activity is misrepresented, in Stuart Hampshire’s words, “as a set of actions, each of which is a response to a definite situation, as a statement may be an answer to a definite question”. Thus one loses the sense that teachers create lives in consort with others, lives meant to exemplify an ideal within a fabric of personal being. Looking at thought about action in this artificial fashion is not inconsistent with trying to read teachers' actions against the background of a continuous, many-sided process that resonates, in choice, to a given
form of the good life, but it certainly makes it more difficult. This open-ended process invokes criteria of direction and coherence in a specific vision of goodness, the interrelatedness of actions and people, the identity of persons, the structure of the disciplines, and the requirements of social institutions. In their different ways, these criteria impose limits on thought and action; and, in themselves, they are in no way combined, or adapted to one another, so as to form a consistent and orderly whole.

Analyses of teacher thinking have to be informed by an understanding of conceptual and contextual unities and particular connections; at the very least, we should not fool ourselves about just what analysis has left behind, pretending that those things are not important or never existed. Within an argument, taken singly, the idea of completing premises will not work when we factor in the plenitude of goods; rather, we have to deal with the criterion of co-existence, dependent on personal capacities for tolerating levels of anxiety. A simple progression from `subjective' to objective forms of reasonableness is not a viable prescription when we take this point and the general idea of live personality involved in the criticism of action seriously. Nor does criticism of action imply the possibility of revision; it is not only that regrets are usually vain but that the person thinking about what has been done and even the person who has come through a non-trifling self-argument is not the same person as before the fact. Subjective ideals and desires are qualified by social morality, and the illuminating or distracting presence of other people. Questions of empirical truth are complicating by the evaluative and interpretive aspects of situations; this holds for both research and practice.

Teacher actions, likewise, are susceptible to narrow and broad descriptions which may include effects on students' feeling or on their future careers, depending on how many, and what kinds of, effects are included in the description of action. In the failure of rational and
moral self-sufficiency, Chekhov’s story supplies a lesson relevant to my
discussion of rationality and action in teaching. Lacking awareness was
not Vera's problem. Yet, having failed in her first aspirations, Vera need
not fail in wanting and leading the life of a good landowner, with many
components of intrinsic worth, harmonious with the universals of a good
human life, and conforming, perhaps tragically, to the contradictions of
history and place.

Though it is hard to deny the value of complete and coherent
premises, of univocality and guaranteed inference, it is a mistake to
believe that teachers' arguments can and should rely on these values.
Insisting on them may show more about some philosophers than about
these arguments and practical reasoning. Thus Kenny concludes: “The
notion of a premise which is complete enough to prevent defeasibility
while specific enough to entail a practical conclusion is surely chimerical”.
Their arguments about what to do not drive teachers to unavoidable
conclusions; there is something much more inevitable in the way that one
good sentiment leads to another or an amiable action springs from
personal happiness. Practical inferences, such as they are, are not
unmistakable in meaning but capable of many and inconsistent
interpretations.

1.5 COMPONENTS OF CLASSROOM QUESTIONING BEHAVIOUR

Classroom questioning is a complex skill which can be
analyzed into its components for the purpose of acquiring mastery over
them so that the teacher can use questions competently to the desired
effects.

The main components of the classroom questioning
behaviour are:

1. Function of Classroom Questions
2. Structuring of classroom questions
3. Levels of Class-room Questions
4. Delivery of Classroom Questions
5. Distribution of Class-room Questions
6. Pupil Response Types
7. Response Management

1.5.1 Function of Class-room Questions

Classroom questions are used for realizing a variety of instructional objectives. In other words, questions have definite functions corresponding to the objectives they purport to realize. The function of classroom questions can be broadly divided into two categories.

Managerial Function

The managerial function of classroom questions refers to the preparation and management of the learning environment in the classroom. These questions help the teacher in formulating and communicating specific directions for instruction. Attention of the pupils can be secured through classroom questions.

Substantive Business Function

The substantive business function of the classroom questions implies content solicitation to realize different instructional objectives. This function can be analyzed into the simple units like: (a) creating a learning set. The questions for this purpose attempt to link pupils' past experiences with the new learning task, (b) advancing the learning task. This function refers to the developmental stage of the lesson. (c) stimulating pupils to think. This function can occur at any stage of the lesson. (d) planned drill and practice. The questions requiring quick and repeated responses fall in this category. (e) reviewing pupil
learning progress. This function refers to a stage in the lesson where at the end of a unit of the learning task, the progress of the pupils is reviewed. (f) diagnosing specific learning difficulties. This function helps the teacher to identify the cause(s) of the specific difficulty and thus provides guidelines for adjusting the teaching strategy accordingly. (g) Evaluating the learning task. The questions relating to evaluation function are generally used at the end of the lesson in terms of the specific instructional objectives.

1.5.2 Structural of class room questions:

The skill of structuring classroom question is the most used one in the classroom. Its components are relevance, precision, grammatical correctness and clarity. Well-structured questions facilitate better understanding of the content presented in the classroom, serve as a model for pupils and ensure accurate communication of the purpose of the question.

Relevance

By relevance it is meant the suitability of the questions to the specific instructional objectives of the lesson and the content being covered.

Precision

The precision in the context of classroom questions refers to its length. Too lengthy questions fail to get registered in the brains of pupils. The length of the questions should be appropriate to the purpose and level of the questions. The only definite guideline for precise question is that it should not contain even a single word more than what is essential.
Grammatical Correctness

If the question structured by a teacher is not grammatical correct, it creates confusion in the minds of pupils. Thus the fluency of questioning is reduced. Grammatical incorrect questions also fail to communicate their intention.

Clarity

Clarify refers to the understandability of the language of question. An effective question should not use terms that are beyond the understanding and experience of the pupils. Proper format, use of vocabulary familiar to the pupils, makes the question clear.

1.5.3 Levels of Class-room Questions:

Different levels of questions stimulate corresponding level of thinking in pupils. The level of a question is determined by the structure of the question. Questions can, therefore, be structured at different levels which generate thinking at corresponding levels in pupils. Classroom questions can be classified into three levels.

Lower Order Questions

Lower order questions require the pupils to recall or recognize the already learned facts, generalizations definitions, values and skills. They stimulate the lowest level of thought process, i.e. memory, which is a necessary condition for the higher level of thinking. However, such questions do not ensure understanding of the knowledge.

Middle-order Questions

Middle order Questions stimulate three mental processes in pupils. These processes are translation, interpretation and application. In the context of classroom questions, translation refers to seeking a
change of medium or mode of expression need to describe an object, concept or generalization. The process of interpretation involves comparison and explaining relationship between ideas, concepts, generalizations, definitions, values and skills. Application refers to the use of the knowledge acquired in one situation to the solution of some specific problem in another situation.

**Higher Order Questions**

The higher order questions stimulate the highest level of mental processes in pupils. They require analysis; synthesis and evaluation of facts, concepts, generalizations, values and skills. The higher order questions are important in classroom teaching-learning because they help in developing creative and reasoning abilities of pupils. Analysis refers to examining materials, situations or environments with a view to separate them into their component parts. This involves inductive and deductive reasoning. Synthesis refers to unique and original interpretation of facts, concepts and generalisations. Evaluation means to judge, justify or defend a position in the perspective of appropriate standards and values.

**1.5.4 Delivery of Classroom Questions**

Teacher's questioning in the classroom is primarily a verbal communication to stimulate pupils' thinking. The effectiveness of teachers' talk, in general, and questions, in particular, depends on the delivery process which includes speed with which a question is put, the voice-its pitch and tone, and the pause to allow the pupils' to think.

**Speed**

The speed of the delivery of a question refers to the time taken in speaking it out to the pupils. The speed of delivery a question should be
according to the levels of thinking required to answer it, the function it is
required to perform and the length of question asked.

**Voice**

In the perspective of questioning in the classroom, voice
refers to audibility and modulation in such a manner that each and every
pupil in the classroom hears what the question is, what it requires and
through what level of thinking it could be answered.

**Pause**

Pause refers to the small period of silence observed by the
teachers just after delivering a question. Pause provides the time for the
pupils to think and formulate an appropriate answer.

### 1.5.5 Distribution of Class-room Questions:

The distribution of class-room questions can be
considered along two lines, namely distribution in terms of space,
distribution among volunteers and non-volunteers. Proper
distribution of classroom questions helps in securing and maintaining
pupils' attention, enlists their active involvement in the teaching
learning task and also creates interest in the learning task. The
components of the distribution of questioning behaviour corresponding
to these dimensions can be conceived.

**Distribution in space**

The pupils occupy some space by their sitting
arrangement in the classroom. There is a variation in the frequency
of questions put to the pupils on the left or right side of the classroom
and pupils seated in front rows and back rows of the classroom. An
effective approach in this regard may be to distribute questions fairly in
different parts of the classroom. This will help the teacher to secure active co-operation of all the pupils to develop his lesson and make it interesting.

**Distribution among Volunteers and non-volunteers**

The pupils who show verbally or non-verbally their eagerness to answer the question are called volunteers and the pupils who show their reluctance towards answering a question are called non-volunteers. In order to involve the whole class in his lesson and to make this teaching effective the teacher should ask questions both from volunteers as well as non-volunteers.

**1.5.6 Pupil Response Types**

When a question is put in the classroom, there are number of possible pupil response situations ranging from no response to completely correct response situations emerge. Those situations are discussed below briefly.

**No Response Situation**

No response situation refers to the failure on the part of the pupil to frame and express verbally a response to the question that he is required to answer. The pupils remain silent. No response on the part of the pupil may be due to his inability to understand the question, to structure the response or due to lack of requisite facts, concepts and generalisation required to respond to the question.

**Wrong Response Situation**

In this situation, the pupil makes an effort to respond, but the response is incorrect. Wrong response indicates the lack of knowledge of facts, concepts and generalizations or a lack of understanding of the ways and means to structure the response.
Partially Correct Response Situation:

Partially correct responses represent the responses parts of which are similar to the criterion or correct response. They represent a partial knowledge of facts, concepts and generalizations on the part of the pupil.

Incomplete Response Situation:

This situation implies that the information provided by the pupils is less than what is required in the question. This may be due to lack of proper understanding of the question or due to his inability to structure his response properly.

Correct Response Situation

Correct response refers to be the statements expressed by the pupil which completely satisfy the criterion response.

Chorus Response Situation

Chorus response is the response given by the class collectively. The elicitation of collective response is justifiable for planned drill and practice. However, a collective response in other situations indicates a problem of indiscipline in the classroom.

1.5.7 Response Management

The teacher is required to manage pupil responses in a way that the objective for which a particular question is asked realized. The skillful management of pupil responses forms an integral part of the technology of classroom questioning behaviour. Response management behaviours of teachers contribute to the effective use of classroom questions.
Acceptance

Acceptance of the pupils response through words like right, correct, yes and even praise words like `good', `go-on', etc. and also acceptance through `nod', smile, etc. usually correct responses are accepted. Even in the case of incomplete or partially correct response situations, correct part is accepted.

Rejection

Rejection of the pupils response through words like wrong, no etc. Rejection can also be through shaking of head, etc. The wrong response are rejected. There are ways of rejection. Either it is outright explicit rejection or a suggestion and corrective rejection.

Sometimes the teacher does not react at all to the pupil responses

This may be in the case of responses to very simple and easy questions or from bright students. It is also usual in the case of chorus responses in drill and practice.

Prompting

Prompting refers to providing hints or cues to the pupil in a bid to lead him from no response or wrong response situation to the correct (criterion) response situation. While using this technique, the teacher himself does not provide the answer to the question asked in the classroom, but guides the pupil through carefully provided hints to arrive at the desired response. Prompting can also be done through pointing to the logical inconsistency, through systematic questioning and narrowing down pupils option to the correct response.
Seeking further Information

In the case of incomplete or partially correct response, the pupil is given an opportunity to improve upon his earlier response. Seeking further information consists of eliciting additional information from the responding pupil to bring the initial response to the expected response level. ‘What else’ type of questions seek further information from pupils.

Redirection

Redirection of questions in the classroom refers to asking the same question from another pupil. The purpose of redirection is twofold. Firstly, it increases pupil participation. Secondly, when a teacher reaches the conclusion that a particular pupil is not coming to the desired response and has reached a dead end, he may refer the same question to another pupil considering the constraints of the instructional time.

Response Structuring

Structuring of pupil responses is done when the response is correct, but is expressed in inappropriate language or the sets of statements comprising the criterion response are not in a proper sequence. Rephrasing pupil responses in these two situations is known as structuring of pupil responses. Structuring is very important in the case of long responses and responses to higher level questions.

1.6 THE USE OF QUESTIONS IN CLASSROOM TEACHING

Education is the most valuable tool of social awakening, inducing the young generation into the ‘good’. Schooling is one agency to
further the cause of education; teaching is one process employed at a given
time and place; and the classroom is one place where the above activities
go on. Questioning is one tool to serve the purposes of education in
classroom circumstances. Socrates has highlighted that questions are
promising tools for the pursuit of right knowing and acting. Scientists and
scholars, among others, pose questions in systematic search of grounded
knowledge. Question is the path to learning. Educators, therefore,
especially in recent years, have taken to the systematic use of questions
for classroom teaching-learning. Question provides the seed for human
civilization. Right in heaven it tempted Eve who prompted Adam to taste
the fruit of knowledge without caring for the result (Testament, 1980).
And the result is the whole gamut of hustle and bustle on the earth.

According to Jangira (1982), a question is the fountain of
human civilization which is well illustrated by the role it plays in the
socialization of the child and his consequent emergence as a seeker and
creator of knowledge. The life of the child, rather the Man himself, can be
best described as an external question-answer chain exemplifying the
seeker in him which leads to self-actualization through cumulative
learning. Thus, question is the instrument of informal education right
from the inception of human civilization. Socrates used the questionnaire
method to teach his pupils.

Broudy (1963) holds that as soon as one talks of Socratic
method, systematic questioning logic comes to mind. In India, too,
discussions based on dialogue method (Shastrarth) have been a means of
education in Ashrams. The scriptures are full of examples to show that
levels of question had a correspondence with the levels of knowledge. For
example in Katha Upanishad which is one of the ancient scriptures in
Hindu Mythology, there is a dialogue between Nachiketa and Yama,
where Nachiketa asks:
“Tell me, O' king, the supreme secret regarding which men doubt. No other boon will I ask."

In response to this exacting question, Yama, the king of death, teaches him. Nachiketa, here, symbolizes the pupil, and Yama, the teacher. Nachiketa's art and power of questioning leads to his learning (Prarhavananda, 1957).

In the modern times too, Skinner (1971) has emphasized the importance of pupils' active responding to questions for higher academic achievement. The questions arise in ignorance and mystification, stimulating the student's thought and allowing his action in an energetic pursuit of enquiry coming to term in an answer. Question and answer adjoin to form knowledge and understanding. The students' knowledge consists in the proposition that he forms of question plus answer; his understanding inheres in the relation he interprets between question and answer.

Research on teaching had started as presage-product research. Later on the focus shifted on process-product research (Flanders, 1970). With the advancement of research in this core area of education, the need for differentiated studies was strongly felt. The conceptual frame with presage, process, context, and product variables was developed by Dunkin and Biddle (1974). As may be seen, there are several "regions" in the model. The control region is the classroom itself, symbolized approximately, by a rectangle. To the left of the classroom are three sets of variables that will surely have at least some influence on classroom events: variables associated with the teacher, variables associated with the pupils, and variables representing the contexts of community, school and classroom. To the right are some of the hoped for products of education. There are some thirteen classes of variables under four main classes, namely, precise, context, process and product variables.
The presage variables concern the characteristics of teachers, teacher formative experiences, teacher training experiences, and teacher properties. Teacher formative experiences include every experience encountered prior to teacher training. Teacher-training experiences include the college or university attended by the teacher, courses taken, the attitudes of instructors, experience during practice teaching. Teacher properties consist of the measurable personality characteristics. Context variables concern the conditions to which the teacher must adjust - characteristics of the environment about which teacher, and teacher educators can do very little. It includes pupil formative experience and pupil properties. Apart from these context variables also include school and community context and classroom contexts.

Process variables concern the actual activities of classroom teaching - what teachers and pupils do in the classroom process variables include teacher classroom behaviour which is a function of presage variables and pupil classroom behaviour. The success of the teaching enterprise rests with pupils as well as with teachers. Observable change in pupil behaviour is a function of teaching, and hence evidence of the success or failure of the teacher’s efforts.

In the paradigm teacher training falls in the presage areas, classroom questions fail in process variable dimension and its study in relation to product variables fall in process-product class of research. The quality of classroom questioning as a means of curriculum transaction varies widely in the classroom.

1.7 CLASSIFICATION OF CLASSROOM QUESTIONS

It is a well documented fact that the use of questions constitutes one of the most common teaching skills. Over 50 years ago,
Stevens reported that four-fifths of school time was engaged with question and answer dialogue (1). Recent investigations have discovered similar results (2). It cannot be doubted that questions do, in fact, frequently occur during the teaching process. However, as with other teaching activities, it is the quality, not the quantity, of questioning that should receive prominence.

To use questions effectively, well-developed techniques are needed, yet few teachers have experienced instruction through a series of trial-and-error experiences in the classroom teaching. The subject of this paper, classifying classroom questions, is one technique that can be used to improve teachers' questioning skills. Many educational researchers have attempted to describe the types of classroom questions asked by teachers. In order to quantify this research there has been an emphasis on the development of categories into which teachers' questions can be classified. At least 21 classification systems for classroom questions have been devised in recent years. Most of these systems consist of a limited number of general categories which can be used to classify questions irrespective of such factors as subject-matter area, grade level, etc. Some systems, however, have been developed with a specific curriculum in mind. For example, Guszak's system was designed to classify questions that teachers ask elementary school reading groups, and Schreiber's system for classifying social science questions includes a category called "Use of Globes" (e.g., Will you find Greenland on the Globe?). These curriculum-specific systems have their advantages (e.g., their categories can perhaps be more precise). The focus is on cross-subject question classification systems. The assumption that classroom questions in general can be categorized, and that these kinds of systems can be pedagogically fruitful to all teachers irrespective of subject-matter area, grade level, etc. is also justified.
1.7.1 Bloom's Question Classification System

Probably the most representative and by far the most popular cross-subject questions classification system is the one developed by Benjamin S. Bloom in Taxonomy of Educational Objectives. In a review of the literature on the use of questions in teaching, Meredith Gall concluded that “... Bloom's Taxonomy best represents the commonalities that exist among (classroom question classification system”.

The heart of Bloom's book is the definition of six kinds of thinking. These can be drawn as follows:

1. Knowledge: These ask students to perform simple recall
   Q.: In the electoral college, what determines the number of electors from each state?

2. Comprehensions: These ask students put information in another form.
   Q.: Contrast the electoral collage system with a direct democracy.

3. Application: These ask students select facts, principles, and/or generalizations and apply these to a particular problem.
   Q.: How would it be possible for a candidate to receive a majority of the popular vote and still not be elected President?

4. Analysis: These ask students to identify and comprehend the elements or parts of a process, communication, or series of events.
   Q.: Which step in the process of electing a President would you think the American people know least about?

5. Synthesis: These ask students to engage in original thinking.
Q.: Draft a Constitutional amendment which would preserve the electoral college system but which would prevent the election of a President who did not receive the largest number of popular votes?

6. Evaluation: These ask students to determine how closely a concept or idea is consistent with standards or values.

Q.: After examining criticisms of the electoral college and proposals for change, which proposed change do you think would be the most democratic?

According to Bloom, specified types of question lead to each kind of thinking. So, a teacher who masters the six categories can classify the questions asked in recitation, homework, and evaluation to determine whether students are receiving an adequate variety of thinking experience. The purpose of the taxonomy is to provide a framework with which to measure the variety of teachers’ questions, and to suggest what should be done to broaden them. A science teacher, for example, who offers few questions calling for creative thinking (synthesis) or evaluative thinking, can study the nature of the questions these categories and build them into the lessons. Moreover Bloom's major contention is that in the typical classroom students are seldom required to go beyond the level of application questions, and that most questions are the knowledge and comprehension levels. A few teachers find that they are naturally good questioners but a large body of research indicates that the majority of teachers offer a relatively narrow range of questions. Bloom's contention is clearly valid - the type of question that teachers most often ask is at the low-cognitive level, requiring only the recall of a memory-answer. The frequently voiced suggestion that teachers ask high-level thought questions has apparently fallen on deaf. The importance of questions and questioning techniques and the ability to modify teachers questioning behavior through the use of classroom question classification systems like Bloom's seems well-established, but these systems are not without
problems. A weakness of the cognitive-process approach to question classification is that these processes cannot be observed directly.

Second it seems evident that Bloom's system classifies questions which cover only a few important educational objectives—namely, the types of questions which teachers ask to test students recall of information and to develop their critical thinking processes. Yet there are several other worthwhile question types:

1. Questions which cue students to improve on an initially weak response to a question: Can you tell me a little more? What do you mean by that?"

2. Questions which create a discussion atmosphere: "Billy, do you agree with Sue's position?"

3. Questions which stimulate students sense of curiosity and inquiry: "What would you like to know about this manuscript? How would you propose to find an answer to this question?"

4. Questions which guide students learning of a problem-solving, behavioral, or affective skill: "What do you think we do next to solve this problem? Mark, what is your response to these drawings?"

Even with all the obvious pedagogical importance of Bloom's system, the problems associated with it suggest the need for a different kind of question classification system.

1.7.2 Wilson's Statement Classification System

It does not seem too difficult to adapt John Wilson's statement classification system in Language and the Pursuit of Truth into a question classification system. In that book Wilson distinguishes five kinds of statements.
1. Imperatives and Attitude Statements: Give commands or express attitudes, and are either not verifiable at all, or only in a trivial sense. Shut the door. I like ice cream.

2. Empirical: Give information about the world based on our experience of it, and are verifiable by tests conducted in terms of our experience, and ultimately in terms of our sense experience. All swans are white.

3. Analytic: Give information about the relationships between verbal, logical, or mathematical symbols, and are verified by the laws of language, logic, or mathematics. All red objects are colored.

4. Value: Judge something or someone as good or bad on the basis of some criteria, and are verified partly on a knowledge of the facts and partly on the criteria of value. This is a good knife.

5. Metaphysical: Seem to have no method of verification at all. God will save the righteous.

The distinction between empirical and analytic questions seems to be an important one. The former is obviously a very broad category and includes questions about causes, purposes, functions, estimates, predications, rankings or grading, and many different kinds of descriptions. For example, empirical descriptions can be subdivided into requests for properties or characteristics examples, classification, labels or names, summaries. It views, procedures or processes, chronological sequence relationships, comparisons, or contrasts.

1.7.3 Alternative Question Classification System

It is possible to divide all questions into two categories (a) interrogative questions, or requests for information; and (b) rhetorical questions, which do not request information, indeed no answer is expected. The first category has the five major subdivisions - empirical,
analytical value, preference and metaphysical - while the second has three subdivisions - imperative, declarative and exclamatory - depending on how the particular question being classified functions (i.e. as a command, like "Will you please open the window?"; or as a statement, like "If we allow Medicare, can full-fledged socialism be far behind?"; or as an expression of emotion, like "Is this any way to treat a law - including citizen?!"

Traditionally, most classroom questions classification systems have overlooked this interrogative/rhetorical distinction. Clearly, if a question is rhetorical, then a methodological dilemma arises about how to classify it using Bloom's system. In addition, one pedagogical use of this distinction might include a comparison of the ratio of interrogative to rhetorical questions. If, for example, a teacher uses rhetorical questions to the neglect of interrogative questions, then the teacher should perhaps be urged to reexamine his or her pattern of questioning. This is not to say that rhetorical questions are never pedagogically useful, but simply to point out that, like any pedagogical technique, they can be abused.

The advantages of the alternative classroom question classification system over existing systems are numerous. First, it has the most comprehensive conceptual framework of any system yet constructed. That is, it is able to classify nearly all questions that might occur in a normal classroom teaching. The alternative system is somewhat similar to Wilson's system, except that a new element is added in the way of a functional basis for classifying questions - interrogative vs. rhetorical. This, along with the subcategories of interrogative questions, provides the much-needed overall conceptual framework heretofore lacking in classroom question classification systems. Moreover, the addition of the ambiguous questions category virtually eliminates category overlap. Since the purpose of a classroom question classification system is to improve teachers' questioning, a category for their mistakes is a necessity. It if is
not clear how to classify a particular question, then it is simply recorded under the ambiguous questions category. It is important to realize that the questions in this category must be recorded verbatim in order to be used as instructively as possible in improving teachers' questioning.

Another advantage of this system is that the categories and subcategories of the interrogative questions sections are delineated on an ordinary language basis according to semantic cues within the questions. This in indeed an important feature because it allows this system to remain psychologically and metaphysically neutral. That is, it is not tied to any psychological or metaphysical theory: it makes no commitments to behaviourism, etc., or to the ontological status of "cognitive processes."

The pedagogical purpose of Bloom's system is clear enough - to increase the variety and upgrade the level of teachers' questions in order to increase students' understanding - but what is to be gained by using the alternative system. First, the alternative system avoids some of the criticisms levelled at Bloom's system. Gall's second criticism of Bloom's system - the facts that it omits some important kinds of classroom questions (e.g. What do you mean by that? What is your response to this? Do you agree with that? What would you like to know about this?) - is at least partially answered by the inclusion of those kinds of categories in the alternative system (e.g., Analytic linguistics, preference, etc.).

Also, Gall's first criticism of Bloom's system - that it was impossible to observe cognitive processes directly and thus difficult to determine which category some questions belong in - does not seem applicable to the alternative system, since questions are categorized in that system according to semantic cues within the questions and not the cognitive processes required to answer them.

The benefits of the alternative system are not limited to avoiding some of the criticisms levelled at Bloom's system. However, part
of its pedagogical importance lies in the fact that it illustrates the many different kinds of logical operations that might be required to answer a question (e.g., definitions, descriptions, evaluations, etc.).

Thus, the alternative system could be used to improve teachers' questioning techniques by making them aware of, and thus getting them to avoid, questions that are semantically ambiguous. Moreover, a teacher familiar with this facet of the alternative system would not only improve his or her own questions, but would also be better equipped to handle student's semantically ambiguous questions. For example, if a second grader asks, "Why do animals grow long hair in the winter?" one must be able to recognize the semantic ambiguity and determine if a casual explanation (e.g., The drop in temperature causes the production of certain enzymes which cause their hair to grow longer) or a teleological explanation (e.g. in order to keep warm) is desired.

**Explanation Of Alternative Question Classification System**

I. Interrogative Questions: Sentences with interrogative function, regardless of form (i.e., requests for information).

   A. **EMPIRICAL**: Questions about the world and our experiences of it.


         a. Why did the pond freeze?

         b. What caused World War I?

      2. Teleological: Questions about someone's purpose, aim or goal.

         a. Why did Nixon refuse to turn over the Watergate tapes?

         b. Why did Nixon institute a wage/price freeze?
   a. Why does the liver secrete bile?
   b. What is the function of the pancreas?

4. Non-normative Judgement: Requests for an estimate, prediction, ranking, or grading, but not value judgements.
   a. How far is the green?
   b. Who will win the election?
   c. Is the second note higher or lower than the first?

5. Descriptive: Requests for descriptions.
   a. Requests for properties or characteristics.
      1) What color is it?
      2) What are the properties of iron?
   b. Requests for examples.
      1) What are some examples of homonyms?
      2) Give me a substance that dissolves in water.
   c. Requests for classifications.
      1) Is NaOH an organic or inorganic compound?
      2) What class of animals does the cat belong to?
   d. Requests for labels or names.
      1) Who is the President of India?
2) Which part of the brain is the lowest?

e. Requests for summaries.
1) Summarize chapter three.
2) What were the major points of this book?

f. Requests for reviews.
1) What have we said so far?
2) What did the author say about ecology?

g. Requests for procedures or processes.
1) How is sulphur mined?
2) How did you get the answer to this problem?

h. Requests for chronological sequences.
1) List in chronological order the events leading up to World War I.
2) What sequence of events preceded Narayanan becoming President?

i. Requests for relationships.
1) What is the relationship between the Big Dipper and the North Star?
2) How is spelling ability to reading ability?

j. Requests for comparisons.
1) Compare Alabama to Auburn.
2) What do these words have in common?
k. Requests for contrasts.
   1) Contrast materialism with idealism.
   2) What is the difference between organic and inorganic compounds?

B. ANALYTIC: Questions about the relationships between verbal, logical, or mathematical symbols.
   1. Linguistic: Requests for definitions or the relationship between words.
      a. Define `placid.'
      b. What does `ambiguous' mean?
   2. Logical: Requests for the laws of logic or the relationship between logical symbols.
      a. Why is this argument invalid?
   3. Mathematical: Requests for the laws of mathematics or the relationship between mathematical symbols.
      a. What is 6 x 7?
      b. Why does angle A plus angle B equal 180 degrees?

C. NORMATIVE (VALUE) JUDGMENT: Requests for evaluations, obligatory judgements, or justifications.
   1. Is Narayanan a good president?
   2. Should "Deep Throat" be banned?

D. PREFERENCE: Questions about likes and dislikes.
   1. Do you like ice cream?
2. Don't you like coming to school?

E. **METAPHYSICAL**: Questions about supernatural beings, events, etc., which have no agreed-upon method for arriving at an answer.

1. Does God exist?
2. Why is there something rather than nothing?

II. **Rhetorical Questions**: Sentences with an interrogative form but not an interrogative function (i.e., they do not request information).

A. **Imperative**: Sentences with an interrogative form but an imperative function.

1. Will you open the window, please?
2. Can you draw it this way?

B. **Declarative**: Sentences with an interrogative form but a declarative function.

1. Is that any way to treat a law-abiding citizen?
2. If we agree to Medicare, can socialism be far behind?

C. **Exclamatory**: Sentences with an interrogative form but an exclamatory function.

1. Is that necessary?
2. What the hell's going on?

III. **Ambiguous Questions**: Questions that are functionally or semantically ambiguous.

A. **Functional**: Questions that can be interpreted in two or more ways functionally (i.e. as the various forms of rhetorical, or as interrogative).

1. Why don't you do it this way?
2. Why won't this approach work?

B. Semantic: Questions that can be interpreted in two or more ways semantically.

1. Explain the Civil War.

2. Why do animals grow long hair in the winter?

It must not be assumed here that all ambiguous questions are pedagogically undesirable. They can be used, for example, to create discussion or to inject humor. Ambiguous questions are undesirable only when they are used as if they were not ambiguous. Thus, a teacher asks "Explain the Civil War" with the intent of generating a discussion about causes, purposes, descriptions, definitions, justifications, etc., then it is indeed a useful question. However, if this question was asked without recognizing the ambiguity and expecting only one kind of answer (e.g., casual) it could cause problems - especially if it were an exam question and students had no chance to determine what the "correct" answer was.

We have noted the overwhelming frequency of the use of questions as pedagogical tools in the classroom, as well as the demonstrated ability to improve teachers' questioning techniques through the use of classroom question classification systems. It should be recognized, however, that the construction of a good question classification system does not guarantee that teachers will automatically ask good question. Clearly, instruction in the use of the system and the inculcation of the tendency to use the system are required before questioning techniques can be improved. On the other hand, a good system makes its teaching much easier and thus increases the tendency to use it.

The alternative system has many important features that allow it to be used independently of Bloom's system. However, it is not intended as a replacement, since the advantages of Bloom's system -
increasing the variety and level of teacher's questions - is not a feature of the alternative system. Indeed, it seems desirable to use both systems in order to improve questioning techniques in as many ways as possible.

Obviously, the outline of the alternative classroom question classification system is just that, an outline. Further conceptual refinement of its categories and subcategories is no doubt possible. This, then, is one area that requires more work by philosophers of education. In addition to the philosophical work called for, some empirical testing of its reliability and validity is required.

Finally, it should be noted that instruction in the use and benefits of classroom question classification systems should not be limited to teachers. Clearly classroom discussions could be improved by familiarizing students as well as teachers with question classification systems. Thus, these systems and their pedagogical applications should be taught not just in teacher training institutions but also in the public schools.

1.8 QUESTIONING BEHAVIOUR

There are hundreds of questioning behaviours to choose from. The following specifics needed for practice may be referred to understand some of the aspects of questioning behaviours. Each aspect in each category is open for choice:

(i) Usage: Use of the question is related to the circumstance to serve a purpose.

(ii) Quantity: A teacher can determine the number of questions in consideration of the classroom process or in consideration of the students.
(iii) Kind: Questions can be classified into a number of kinds - closed and open questions, factual and opinion, ‘lower’ and ‘higher’ cognitive questions. All types can be useful according to purpose in circumstances.

(iv) Topic: Suitable topics have to chosen to meet the requirement of purpose in circumstances.

(v) Form: Words and their arrangement in the question-sentence have to be attended to.

(vi) Addressee: Purposes and circumstance determine whether a question has to be posed to one or a certain number of students or to all students.

(vii) Timing: The timing of posing a question has to be determined by the teacher to fulfil the purpose in hand.

(viii) Manner: A smooth conversational manner should be chosen. It involves the tone and attitude conveyed, the voice, diction, inflection and other aspects of delivery.

(ix) Presumptions: Certain presumptions have to be taken into consideration before asking a question.

(x) Purpose: The chosen purpose of the teacher must be taken care of before posing a question.

1.9 PEDAGOGY OF TEACHER QUESTIONS

Pedagogy directs teachers to take disciplined action before, during and after posing questions. Preparation begins the action and reflection completes it. The scheme recognizes the kinds of acts involved in the action of using teacher questions e.g. recitation, discussion, examination, student exercises i.e. the classroom processes. Each process
also involves a more specific, less generic pedagogy appropriate to that process. The scheme for teacher questions authorizes the teacher to take action by preparing, posing, and thoughtful questions. The following illustrates the pedagogy of teacher questions:

**Pedagogy of teacher questions**

Prepare the Question

1. Purpose - what are the questions for?
2. Preparation - how to ready them for the asking?

Pose the Questions

3. Question - how to pose the question?
4. Answer - who is to answer?
5. Reaction - what to do with the answer?

Reflect on Questions

6. Assessment - how did the questions work?
7. Redesign - which next questions will work better?

**1.10 EFFECT OF TEACHERS' QUESTIONS ON STUDENT BEHAVIOUR**

Educators generally agree that teachers should highlight the development of students' skill in critical thinking rather than in learning and recalling facts (Aschner, 1961; Carner, 1963; Hunkins, 1966). Yet research across a half-century indicates that teachers' questions have highlighted facts.

Probably the first serious study of this issue was done by Stevens (1912). She found that, for a sample of high-school classes varying in grade level and subject area, two-thirds of the teachers' questions required direct recall of textbook information. Two decades later, Haynes
(1935) found that 77% of teachers' questions in sixth-grade history classes called for factual answers; only 17% were judged to require students to think. In Corey's study (1940), three judges classified all questions asked by teachers in a one-week period in a laboratory high school. The judges classified 71% of the questions as factual and 29% as those which required a thoughtful answer.

Studies conducted in the last several years indicated that teachers' questioning practices are essentially unchanged. In two other studies conducted at the elementary-school level (Guszak, 1967; Schreiber, 1967), similar percentages of fact and thought questions were asked. At the high-school level, Gallagher (1965) and Davis and Tinsley (1967) classified the questions asked by teachers of gifted students and by student teachers. More than half of the questions asked by both groups were judged to test students' recall of facts.

The findings in studies on teachers' questioning practices are fairly consistent (though in some instances there are methodological flaws such as failure to report inter-rater reliability in classification of questions and lack of clarity in the definition of question categories). It is reasonable to conclude that in a half-century there has been no essential change in the types of question which teachers emphasize in the classroom. About 60% of teachers' questions require students to recall facts; about 20% require students to think; and the remaining 20% are procedural.

Another explanation of the research findings is that although educators have for a long time advocated the pursuit of objectives such as critical thinking and problem solving, only recently were these objectives incorporated systematically into new curricula. The relationship between curriculum change and teachers' questioning practices is illustrated in a recent study comparing teachers in the School Mathematics Study Group (SMSG) with teachers in a traditional
mathematics program (Sloan & Pate, 1966). The researchers hypothesized that the two groups would differ in their patterns of questioning since the SMSG program emphasizes the objectives of inquiry and discovery. They found that, compared to the traditional math teachers, the "new math" teachers asked significantly fewer recall questions and significantly more comprehension and analysis questions.

Teachers’ questions are of little value unless they have an impact on student behaviour. Yet very few researchers have explored the relationship between teachers’ questions and student outcomes.

The most important work in this area to date is the research by Hunkins (1967, 1968). The purpose of his research was to determine whether the variable of question type bears any relationship to student achievement. Two experimental groups of sixth-grade students worked daily for a month on sets of questions which were keyed to a social studies text. In one group the questions stressed knowledge; in the other, analysis and evaluation questions were stressed. Question types were defined in terms of Bloom's Taxonomy. Hunkins found that the analysis-evaluation group earned a significantly higher score on a specially constructed post-training test than did students who answered questions that stressed knowledge. The performance of the two groups was also compared on the six parts of the test which corresponded to the six main types of question in Bloom's Taxonomy: the analysis-evaluation group of students did not differ from the comparison group in achievement on subtests containing knowledge, comprehension, analysis, and synthesis questions; they scored significantly higher on the subtests containing application and evaluation questions.

Before the implications of these findings are considered, some possible limitations of Hunkin's research design should be noted. First, whereas the daily sets of questions required students to write out
their answers, the students responded to multiple-choice questions on the post-training test. Therefore, one may question whether the achievement test provided an adequate comparison of the effectiveness of the two experimental conditions. Second it seems a distortion of Bloom's Taxonomy to put the question types into a multiple-choice format since some types, such as evaluation questions, do not really have a "correct" answer. In other words, practice in answering certain types of questions may affect the quality of students' responses rather than their correctness. Third, students monitored their own responses using answer sheets provided with the daily sets of questions. Teacher monitoring of at least some of the students' responses might have enhanced the differences found between the experimental conditions.

In view of these methodological limitations, the Hunkins' findings should be viewed as only suggestive. It seems to be a reasonable hypothesis for further investigations, however, that if a group of students is exposed to certain types of question and if their responses are monitored to improve their quality (rather than correctness), then they will be able to answer similar types of question better than a group of students who have not had this exposure.

In testing this hypothesis, the researcher is confronted with the problem of defining qualitative differences in student responses. This is one of the important unsolved problems in the study of teachers' questioning practices. Although much is known about higher-cognitive questions and their classification, little is known about what constitutes good answers to these questions. It seems reasonable to state, though that responses to fact questions can be evaluated by the simple criterion of correctness, but responses to higher-cognitive questions require several criteria to measure their quality. The exploratory work on the problem suggests these criteria as possibilities: (a) complexity of the response; (b) use of data to justify or defend the response; (c) plausibility of the
response; (d) originality of the response; (e) clarity of the phrasing; and (f) the extent to which the response is directed at the question actually asked. It would seem reasonable to expect at least a moderate correlation between length of the response and its quality, particularly as judged by criteria (a) and (b). Dealing with a related problem, Corey and Fahey (1940) obtained a correlation of +.50 between judges' ratings of the "mental complexity" of students questions and number of words in the question.

1.11 STUDENT QUESTIONS

Educators argue that our attention should be focused on questions asked by students rather than on teachers' questions (Carner, 1963; Wellington & Wellington, 1962). Definitely, it seems a meaningful educational objective to increase the frequency and quality of students' questions in the context of classroom interaction behaviour. However, research findings always show that students have only a limited opportunity to raise questions. Houston (1938) observed 11 junior-high-school classes and found that an average of less than one question per class period was student-initiated. Corey (1940) recorded all talk in six junior-high and high-school classrooms for a period of one week. The ratio of student questions to total questions varied considerably between classes: in two English classes, students accounted for 1% of the questions asked; seventh-grade and ninth-grade science students asked 17% and 11% of the questions respectively. At the primary grade level, Floyd (1960) found that student questions were 3.75%, 5.14% and 3.64% of the total number of questions asked during a taped class session for samples of first- second- and third-grade classrooms respectively. A low incidence of student questions was also reported for high-school English classes (Johns, 1968) and for social studies classes at the elementary-school (Dodl, 1966) and senior-high-school levels (Bellack, Kliebard, Hyman & Smith,
Jr., 1966). In investigating student questions in the classroom, researchers need to undertake several important tasks. First, although it would be of interest to investigate the types of questions students ask (see Gatto, 1928), the more important task is to identify the types of question which students should be encouraged to ask. For example, when introducing a new topic for study, teachers should probably ask students what they want to know about it. Finley (1921) found that elementary-school students had an average of about five questions each to ask when presented with an unfamiliar animal in class. Another classroom situation in which student questions should probably be elicited occurs when a teacher has explained a new subject. Students should be queried about possible lack of understanding. In fact, one might offer the hypothesis that students encouraged to ask questions in this type of situation will learn more than a group of students deprived of this opportunity.

Training of Students in Question asking skills is another key area for educational innovation. For example, what types of question should students ask themselves when they read a poem, a social studies textbook, or a science lesson? It appears that the shaping of student questioning skills has been a neglected attribute of classroom learning. There has been increasing attention given to this problem since inquiry and discovery methods of teaching became well-known, but as Cronbach (1966) and others pointed out, research and training in these methods remain limited by the failure to adequately equipped with the concept. Perhaps the approach of focusing on specific questioning skills in various classroom situations, would provide the clarity needed to equip with the inquiry method.

**Place of Student Questions in Classroom**

Student questions enjoy liberal place in educational theory but small room in classroom practices. Although learning follows in
answer to a student question, few student questions are asked and even fewer are answered, at least audibly in classrooms. Student questions generate the situation of spoken classroom interaction. The very proceedings are back and forth talk between teacher and students. That means, from the point of view of teaching and learning, that the questions are wisely to be spoken, otherwise it is meaningless to proceed by spoken interaction. The purpose for installing interaction in the first place is disturbed by the non-asking. The interaction here means discussion which means that questions rightly arise, for something is at concern, and that the questions are rightly to be shared. It is a failing, from the point of view of discussion, for a participant not to speak his mind on the concern, by withholding his questions instead of contributing them. Further, the activity at hand is pedagogy. Some spoken questions may be answered, others are not; in either case the answering is accidental. This frustrates the essence of pedagogical activity, which is to act with intention to teach and with the aim that the students learn that which is being taught.

The non-asking vitiates the activity of teaching. Also, pedagogy is planned behaviour that is adjusted in the process of enacting it. For not knowing the questions in students' minds, the teacher can neither plan nor act in accordance. And in the process he cannot know whose questions are being answered and not, and which ones. He will not know the state of mind of the students whom he is teaching, and he will not know what they are learning as he is teaching them. When students do not ask questions, both teaching and learning suffer. It is normal for students not to ask questions. It is easily understandable. Students have every good reason but one not to ask about things they want to know or to understand concerning the subject matter being taught to them. Most odds are against their asking. It needs to be appreciated right from the start that there are many factors accounting for the singular rarity of student questions. All such factors operate within the classroom, but not
all of them originate in the classroom; nor are the most powerful factors located within the student or the teacher.

There are systematic conditions, describing such things as structures of society and schooling, socialization into institutional and situational authority roles. There are other conditions also, not springing from the classroom, but imposing upon it. And there are still other conditions within school and classroom apart from factors of teacher and students, e.g. the curriculum, the nature of the subject-matter and the nature of materials and textbooks. The limitations of classroom discourse are the vital factors. The way that classroom interaction normally turns leaves little room for a student to ask a question. It is understandable, then, that students who have questions in mind find it hard to fit a question into the ongoing cycle. As for the teacher, he would have to think to stop everything in order to let a student start in with a question, yet the teacher has no reason to think to stop, since no one seems to have a question. Everyone is creatively engaged in the ongoing classroom interaction. When teacher and students are creatively talking back and forth, the cycle of talk is closed to all but student answers. That is because the cycle typically begins with a teacher question. If, then, turns tightly from (i) teacher question to (ii) student answer to (iii) teacher evaluation of answer plus next question. In their one turn, students can do nothing but answer; and they have no other turn at talk. The cycle for a student question turns quite differently. It does not begin with a student question. The student, first of all, must gain permission to ask a question. Permission to ask might be sought verbally and granted parenthetically instead of in actual words. The student might wave a hand and the teacher might nod or call the student's name. After a student question, the next move is invariably the teacher's but no one can predict what the move will be. It can be a reply or a non-reply to the question. The teacher might answer the question. Other typical replies are to put a counter-
question; to redirect the question, often reformulating it into some other question; to disparage the question or questioner; to ignore it. In a non-reply, the teacher continues as before or moves ahead irrespective of the question. Therefore, one of the least things to occur following a student question is a reply, and one of the least replies is an answer or other response in the force of the asking. Thus it is that asking a question may be a disappointing move for a student. Talk in classroom is governed by rules. The rules are not written but all teachers and students know them, for the rules are rapidly established at the very onset of schooling and defiance are sharply pointed out. Obviously, everyone acts as if they know the rules. Also, these rules fairly rule out student questions. Delicate as the cycle is that involves a student question, and tentative of start, it takes remarkable tact and delicacy to find a suitable place for it to begin with. Not only does the ongoing cycle leave no room for a student question, the rules governing the discourse hardly permit it at all. Despite the fact that there was no rule against a student question; everyone just acts as if there were a rule against them. The general rule of classroom discourse is ‘one speaker at a time’. It means that a student may not interrupt the speaker, whether teacher or student, with a question. A super-ordinate rule holds that ‘teacher talks at any time’ implying that the teacher can interrupt the speaker, typically with a question. Hence, the teacher always has the floor. The next turn at talk belongs to the teacher, not to some student. Unlike other discussions, where speakers can negotiate turns and topics, in classroom discourse the turns are allocated by the one speaker, the teacher, who chooses both the next speaker and the topic. Under this situation, it is a achievement for a student to ask a question. In order for a student to ask a question, he must first locate an appropriate occasion; make a bid to talk; gain the floor; obtain permission to ask and, probably, to change the topic. It requires certain dynamics which is the reverse of the ongoing dynamics: not passivity, reactivity, expectancy and dependence, but student initiative, independence,
energetic action, even aggression. It is also true that, however, brave the venture, a student's question is widely expected to meet with negative reactions of various kinds on the part of other students as well as teacher. So, students have every good reason but one not to ask the questions that occur to them. That one reason is mastery of the world through knowledge and understanding because the process of asking a question eventuates in learning.

1.12 PROCESS OF ASKING QUESTIONS

The process of asking question is followed through four moments from start to finish. One crucial moment is when the person asks the question. Other moments come before and after the asking. The final moment follows upon the answering. That is the moment of learning. The main event is ‘perplexity’. That is the precondition of questioning and, thus, the pre-requisite for learning. Perplexity is an organismic experience, felt in the body as well as the mind - some unease, restlessness, or discomfort, a furrowed brow, scratching of head, biting fingernails and tearing out of hair.

A question arises in a perplexed condition - a degree of doubt, wonderment, ignorance, bafflement, incomprehension, uncertainly and puzzlement. The event of asking follows upon perplexity. The process moves from the experience of perplexity to the expression of a question. The next moment proceeds in complement to the asking. There are only two events - method and answer. Method is that which the questioner does in address to the question. It is search behaviour, systematic or not. Answer is that which is yielded by method and adduced to the question. Having constructed the answer, the question conjoins it with the question. This makes entry to the moment of learning. Learning follows in the final moment. This process makes clear that the moments of questioning are apt times for teaching student questions make the perfect opening for
teaching to enter as well as for learning to ensue. When a student question arises, a student's mind opens to learning. The student question serves the very purpose of teaching. It makes an opening that reveals everything necessary for pedagogical appreciation and intervention. In asking the question the student makes a display of self. He exhibits his state of mind, his dispositions of character, and the dynamics of his relation to the world. The pedagogy of student questions consists of the following steps:

1. Providing for student questions
   (i) making systematic room for them
   (ii) inviting them in
   (iii) waiting patiently for them.

2. Welcoming the question

3. Sustaining the asking

1.13 Classroom Questioning Behaviour Observation System (CQBS)

The classroom training visualizes appropriate structuring of questions, delivery and distribution of questions, monitoring of pupils responses and systematic management of pupil responses. The structuring of classroom questions includes structural characteristics of questions and their level of thinking they purport to generate. Delivery of questions takes into account the speed and voice of the teacher. Distribution covers both spatial as well as according to the nature of the pupils. Selection of the management behaviour most appropriate to pupil responses forms the last component. Based on these, Classroom Questioning Behaviour Observation System (CQBS) has been designed (Jangira, 1979). The categories and their respective coding signs are given in Table- 1.1.
<table>
<thead>
<tr>
<th>Phase</th>
<th>Behaviour Dimension</th>
<th>Categories</th>
<th>Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>Teaching Questioning</td>
<td>Question Related/unrelated Teacher Behaviour</td>
<td>+-</td>
</tr>
<tr>
<td></td>
<td>Pupil Question Function</td>
<td>Question Related/unrelated Pupil Behaviour</td>
<td>Po+-</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td></td>
<td>M+-</td>
</tr>
<tr>
<td></td>
<td>Substantive Business</td>
<td></td>
<td>B+-</td>
</tr>
<tr>
<td></td>
<td>Question Structuring</td>
<td>Relevance</td>
<td>R+-</td>
</tr>
<tr>
<td></td>
<td>Precision</td>
<td></td>
<td>P+-</td>
</tr>
<tr>
<td></td>
<td>Grammatical Correctness</td>
<td></td>
<td>G+-</td>
</tr>
<tr>
<td></td>
<td>Clarity</td>
<td></td>
<td>C+-</td>
</tr>
<tr>
<td></td>
<td>Question Level</td>
<td>Lower Order</td>
<td>L+-</td>
</tr>
<tr>
<td></td>
<td>Middle Order</td>
<td></td>
<td>Mo+-</td>
</tr>
<tr>
<td></td>
<td>Higher Order</td>
<td></td>
<td>H+-</td>
</tr>
<tr>
<td></td>
<td>Question Delivery</td>
<td>Speed</td>
<td>S+-</td>
</tr>
<tr>
<td></td>
<td>Voice</td>
<td></td>
<td>V+-</td>
</tr>
<tr>
<td></td>
<td>Pause</td>
<td></td>
<td>O+-</td>
</tr>
<tr>
<td></td>
<td>Question Distribution</td>
<td>Space-Left Front</td>
<td>l+-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Space-Right Front</td>
<td>r+-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Space-Left Back</td>
<td>rb+-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Space-Right Back</td>
<td>rb+-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pupil Calling Volunteer</td>
<td>v+-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pupil Calling Non-Volunteer</td>
<td>-v+-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Redirection</td>
<td>Rd+-</td>
</tr>
<tr>
<td></td>
<td>Pupil Response</td>
<td>Response</td>
<td>X+-</td>
</tr>
</tbody>
</table>
The observer or coder puts tick (✓) every five seconds in the concerned column for teacher or pupil question related or unrelated task. He records questioning behaviour as soon as the question is put. He writes symbols in the respective columns. In the case of desirable (+) is used while in the case of undesirable use of a particular behaviour (-) is used. On the basis of this coding feedback is provided to the trainee for modifying his behaviour in subsequent teaching.

### 1.14 PROGRAMS FOR IMPROVING TEACHERS' QUESTIONING BEHAVIOUR PRACTICES

The importance of questioning skills in teaching has been accepted by educators for more than 50 years. Yet relatively few programs have been implemented for the specific purpose of improving teachers' questioning behaviour practices. This does not mean that the

<table>
<thead>
<tr>
<th>Correct Response</th>
<th>C+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partially Correct Response</td>
<td>Pc+</td>
</tr>
<tr>
<td>Incomplete Response</td>
<td>I+</td>
</tr>
<tr>
<td>Wrong Response</td>
<td>W+-</td>
</tr>
<tr>
<td>Chorus Response</td>
<td>Ch+</td>
</tr>
<tr>
<td>Response Management</td>
<td></td>
</tr>
<tr>
<td>Acceptance of Response</td>
<td>A +</td>
</tr>
<tr>
<td>Rejection of Response</td>
<td>-A +</td>
</tr>
<tr>
<td>No Reaction</td>
<td>ro+</td>
</tr>
<tr>
<td>Prompting</td>
<td>P +</td>
</tr>
<tr>
<td>Seeking Further Information</td>
<td>F+</td>
</tr>
<tr>
<td>Post Response Questioning</td>
<td></td>
</tr>
<tr>
<td>Response Structuring</td>
<td>S+</td>
</tr>
<tr>
<td>Consolidation</td>
<td></td>
</tr>
</tbody>
</table>
need for such programs has been overlooked. More than 30 years ago, Houston (1938) developed an in-service education program for the purpose of improving teachers' questioning practices. Among the techniques Houston used to effect behavioural change were group conferences, stenographic reports of each teacher's lessons, self-analysis, and supervisory evaluation. Examination of quantitative data yielded by pre- and post-training evaluations of teachers indicated that most of the teachers were able to effect substantial changes in specific aspects of their questioning behaviour. A program was developed at the Far West Laboratory for Educational Research and Development (Borg, Kelley, Langer & Gall, 1970) to help teachers achieve similar changes in their questioning behaviour. Called a minicourse, it is a self-contained, in-service training package requiring about 15 hours to complete. The minicourse relies on techniques such as modeling, self-feedback, and microteaching (Allen & Ryan, 1969) to effect behavioural change. In a field test with 48 elementary-school teachers, the minicourse produced many highly significant changes in teachers' questioning behaviour, as determined by comparisons of pre- and post-course videotapes of 20-minute classroom discussions. The Far West Laboratory now supports the development of about 20 additional minicourses to deal with other types of classroom teaching such as tutoring, role-playing, lecturing, and the inquiry method. Many of these courses include training in questioning skills that are appropriate to the particular teaching-learning context.

Other programs for improving teachers' questioning behaviour practices have been developed, though these have generally had more limited objectives than the programs of Houston (1938) and Borg (1970). Shaver and Oliver (1964) trained teachers in the use of questioning methods appropriate to discussion of controversial issues in the social studies. Suchman (1958) identified inquiry skills for science classes; training teachers in their use resulted in a significant increase in
the number of questions asked by students. In social studies, Taba (1966) and her co-workers (1964) developed a system of teacher training centred around questioning strategies. These questioning strategies were viewed as techniques which teachers could use to develop their students' abilities in forming concepts, explaining cause-and-effect relationships, and exploring implications.

1.15 TEACHER COMPETENCE

When the discussion and debate about an issue is littered with analogies, it is a sure sign that it is problematic. Competence, as it relates to professional education, is just such an issue. Educators and trainers are only in the early stages of developing a language to explore the meaning and implications of the word. It is the intention here to take part in that exploration. A major contention is that conceptions of competence must pay particular regard to thinking. In considering the changing role of professionals in general, and teachers in particular, the conclusion is reached that intelligent reflective thinking is an increasingly important necessity, demanded by an ever more complex society. There follows a review of current concepts of intelligence, which have an increasingly broad spectrum which encourages the view that competence must be a broad-based entity.

The possible significance of metacognition is considered next because there are indications that it may be a key to better thinking. The later stages shift from thinking to feeling through the contention that competence is not solely the product of cognitive processes. Thinking is inextricably linked to feeling and any attempt to develop competence must give due consideration to supporting teachers emotionally in their learning, especially as they attempt to change behaviour. Finally it will be argued that competence is developed through experiential learning cycles and that in this process explicit attention must be given to the
development of the learning skills which are integral to experiential learning. These learning skills will include not only analytical and creative thinking, but also those which attend to feelings. The present desire to assess the competence of both practising, newly qualified and trainee teachers has a number of origins, but at its heart is the continuing national political obsession to identify and eradicate the causes of the relative decline of the British economy. The hunt was on in earnest from 1976, the year of prime Minister Callaghan's 'Great Debate' speech at Ruskin College, Oxford. The trail becomes confused and messy in places, but the cumulative causation process has featured the need for performance indicators to activate a market in the choice of schools by parents. The introduction of the National Curriculum and a back to basics' thrust from Kenneth Clark, when secretary of state for Education.

In the search for scapegoats, being able to describe the performance of teachers, simply, becomes especially important. It is seductive to believe that their performance in the classroom can be observed and on the evidence of behaviour, they can be classified as exemplary or blameworthy. There are numerous examples of checklists used in local authorities, teacher training institutions and schools involved in mentoring student teachers which attempt to grade component parts of the teaching performance. This behaviourist construct of competence rests, according to Norris (1991) on a description of behaviour in a form that is capable of demonstration and observation. If one required inspiration for the process of listing behaviours, one would need to look no further than the elaborate checklists of teacher behaviour developed by American states, and researchers, both to elicit relationships between teacher characteristics and pupil learning and to encourage the diffusion of the characteristics.

The most magnificent but futile achievement was The Florida Catalog of Teacher Competencies listing 1276 competencies (Dodl,
1973). As Whitry and Willmott (1991) have pointed out there are advantages of a move towards a competence-based approach to initial teacher education. They quote Tuxworth’s (1982) call 'to remove some of the mystique and restrictions that surround teacher education, and they go further to argue that competence based approaches can be justified as giving students clear targets of achievement and explicit evidence of their progress, enabling schools to share an understanding of the function of placements and giving employers a clear idea of what to expect. It is to be hoped and expected that new school partnership PGCE courses will, at least. Achieve this explicitness, as it is a minimum requirement for effective communication between the partners.

The foundation in 1986 of the National Council for Vocational Qualifications (NCVQ) was the embodiment of the political desire to create a better trained work-force to compete with our European neighbours. NCVQ has been charged to equate performance in trades and professions, to five levels, via criterion-referenced competence assessment. Level 3 is equivalent to 2'A'levels, level 4 to an honours degree and level 5 to postgraduate qualifications. Because a lead body for teaching is in the offing there is a harder edge to the current debate about competence. Until recently teacher trainers have been nervous of a baldly behaviourist approach to teacher competence (see for example Norris, 1991), but a recent speech by an Employment Department training advisor suggests that NCVQ have learned from the experience of moving into professional education. Current notions of competence in teaching within NCVQ and the Employment Department are reportedly much more complex that original models at lower NVQ levels and it is accepted that competence, whatever it is, cannot be assessed from performance alone (Durrant, 1992). NCVQ (1989) procedure demands that statements of competence 'must be based on an analysis of occupational roles within the area of competence to which it relates.'
The role of teacher becomes a central issue therefore. Schon’s concept of a reflective practitioner (1983) has been highly influential in the rhetoric of teacher education in the last decade. There are few departments which would not claim to be producing reflecting teachers, but in reality the criteria set by the Council for the Accreditation of Teacher Education (GATE) (DES, 1989) have been a far more powerful force for course modelling, which has tended to focus mere on course content than process. Schon’s arguments concerns in the failure of professional education and practice in an increasingly complex, society. Traditionally schools of professional education have concentrated on the teaching of the tenets of knowledge and practices of the particular profession. Thus equipped the graduates have gone forth to practise, applying the rules and models in a process Schon describes as technical rationality. However, this comfortable arrangement has become unhinged because the problems presenting themselves are increasingly complex, frequently with a values dimension and unyielding to professional formulae. This theme of the changing professional has been developed in Britain by Elliot (1991), whose analysis is based on experience researching into the training of police (in six countries) and doctors. Elliot argues that in advanced ‘modern’ societies the needs of human beings have become more complex and professions have had to adjust. As the boundaries between different professions become more blurred, different groups have to collaborate in the performance of their roles. This is not hard to describe in the case of teachers as their pastoral role has expanded to bring them into contact with the police, social workers and health workers. The growth of education business partnerships, work experience, teacher placements in business and the work-related curriculum have demanded joint ventures. Changes in school management have brought new perspectives to the management of money, resources and people and brought the marketing of schools to the fore.
Elliot summarises the new professional images as incorporating the following changes:

1. Collaboration with clients (individuals, groups, communities) in identifying, clarifying and resolving their problems;

2. The importance of communication and empathy with clients as a means of understand situations from their point of view;

3. A new emphasis on the holistic understanding of situations as a basis for professional practice, rather than an understanding exclusively in terms of a particular set of specialist categories.


If this is a reasonable description of the changing nature of the professional role of teachers, and the work of Poppleton and Riseborough (1990) does support it, then it presents a resounding challenge to teacher educators. Elliot argues that this broader role, which calls into play a wide spectrum of skills and qualities, demands a reflective practitioner model of competence acquisition through which can be generated the ability to act intelligently in novel situations. This draws upon the ability to understand situations holistically, tactfulness in communication, exercising initiative in proposing, implementing and evaluating problem solutions and the capacity to take risks in the face of uncertainty. Whilst this was not presented as a comprehensive or highly coherent list, it indicates the breadth of quality demanded and the need for ambition, innovation and clarity in developing teacher education courses. The danger lying in wait is illustrated by the evidence of the effect of school-based postgraduate training programmes in New Zealand (Munro, 1989). Students absorbed the norms of traditional school cultures through prolonged and early exposure and came to regard the higher
education components, representing a different culture, as irrelevant. New school based programmes will need a stronger rationale than we have traditionally elaborated. As students spend more time in schools under the supervision of school based mentors, so it becomes increasingly important that the rationale and processes of the course are shared explicitly with all involved. If professional competence is related to the ability to act intelligently in novel situations, then in seeking to develop competence it should repay the effort to consider the nature of intelligence and intelligent thinking.

Intelligence is, of course, another problematic concept and to design courses directly around theories of intelligence to develop competence, would deserve the description of the blind leading the blind. Nonetheless theories of intelligence can illuminate thinking and debate about the nature and development of competence. It is difficult any longer to sustain unitary concepts of intelligence, to conceive of it as one undifferentiated commodity. Theories which depict intelligence as multifaceted have drawn and held attention. Strenberg's (1977) triarchic theory of intelligence seeks to 'understand intelligence in terms of three distinct but related aspects; the internal world of the individual, the external work of the individual, and the experience of the individual.' Sternberg is at pains to emphasise that he is not seeking to deny theories based in psychometry, cognitive and cross-cultural psychology but to provide an overarching theory. Sternberg (1987) describes three students, Alice, Barbara and Celia. Alice excelled in her Yale degree while the emphasis was on critical, analytical abilities, but the shine faded when the emphasis shifted to creative, synthetic abilities. Barbara excelled in research though generating and following through ideas, drawing upon her synthesising abilities. Finally Cella proved to be outstanding because she assessed and adapted to the changing demands of the course. She was 'street smart'. In Sternberg's triarchic theory Alice excelled in internal aspects of
intelligence. Barbara in experiential and Celia in the external aspect. All three were intelligent but in different ways. Gardner's theory of multiple intelligence recognises, similarly, that intelligence has many faces. He identifies linguistic, mathematical/logical, spatial, bodily kinesthetic and more controversially intrapersonal and interpersonal intelligence. Here is a recognition that the ability to read cues about people and handle them sensitively are qualities to rank alongside those traditionally measured by IQ tests. Furthermore, interpersonal intelligence includes notions of motivation, a vital ingredient in any conception of competence. This broader view of intelligence coincides with the results of the practical orientation of the work of McBer and Company (Spencer, 1983).

In the early 1970s this consultancy was asked by the USA State Department for assistance in selecting Junior Foreign Service Officers. Traditionally they had been selected through a 'liberal arts' examination. Apart from discriminating against the less privileged, the test scores correlated negatively with ratings of job performance (McClelland & Dailey 1973). Using a technique generically termed behavioural event interview (McClllland, 1976) and developed from critical incident method (Flangan, 1954), the superior performers were distinguished by non-verbal empathy (the ability to 'hear' what a foreigner was really saying), speed in learning the political network and positive expectations (a strong belief in the dignity and worth of others, even under stress). Whilst speed in learning political networks bears some relation to traditional views of intelligence, empathy and positive expectations have strong undertones of inter and intrapersonal traits. As research on intelligence progresses from its concentration on information processing onwards, explanation of how people behave in practical settings, so its potential relevance for professional education increases. Theories of multiple intelligence encourage a view, rooted in common sense, that professionals will have different profiles of competence. Whilst
it will still be logical to argue that some students are better than others, in many instances it would have to be accepted that better is not as apposite a description as different. Thus one generates a very particular challenge for professional education, that of increasing ability to work effectively with others.

If the professional role of teachers is increasingly one of cooperation within and beyond the profession, then there is a need to address this issue. There has been a long and at times fruitless debate about the potential of teaching thinking skills. Convincing evidence has been scarce. In a review of the evaluative evidence centered on the most popular intervention programmes, Sternberg and Banda (1986) concluded that the studies were seriously flawed, for example, because outcomes measures were of a testimonial nature or so closely linked to the instruments that they were favoured. However reviewing the experience of thinking skills approach can provide some useful pointers to the consideration of the importance of cognition in developing competence. Lipman’s Philosophy for Children (1980) programme depends for its force on the development of critical thinking skills. Lipman argues that critical thinking must be a form of enquiry and that enquiry is a self-correcting practice. The programme is built around novels, which are written to stimulate and excite and act as case studies to investigate the reasoning processes and moral dilemmas faced by the characters and to reach conclusions about the distinguishing characteristics of better and poorer thinking. Because the stories are value-laden, Lipman maintains that the critical thinking developed takes special circumstances into account when applying rules to cases.

The element of judgement has a strong resonance for the reflective practitioner model proposed by Schon (1983). Critical thinking is applied or practical reasoning in novel situations. The anecdotal and circumstantial evidence for the success of Lipman’s approach is strong,
even if research evidence is thinner. There is more impressive evidence of the effect of a curriculum-rooted thinking skills approach in Britain in the CASE (Cognitive Acceleration in Science Education) project. The two-year programme for pupils in years 7, 8 or 9 has had a significant effect on GCSE results not only in science, but in English and maths as well (Adey et al., 1990). The programme is based on the Piagetian of cognitive development and is built around three major concept-cognitive conflict. Bridging and metacognition. Cognitive conflict occurs when students generate evidence that contradicts their previously established concepts. Bridging is the attempt to link generalisations are strategies arrived at in the CASE lessons to other topics in science, other curriculum areas, or indeed everyday life to lay the foundations of transferability. Finally metacognition is the term carried by Flavell (1977) to describe an individual's conscious awareness of his or her own thinking processes. Metacognition deserves some further discussion. It had long been argued that. Teachers are not able to articulate what it is that they do in carrying through a successful lesson: a conclusion which does not support the importance of metacognition. However Campione et al. (1982) demonstrated that adults and high achieving children were more able than low achieving pupils to talk about techniques of learning and problem solving.

Furthermore Tobin and Fraser (1988) in a study of science and maths teachers reached this conclusion about exemplary teachers: 'they believed that students created their own knowledge as a result of active engagement in learning tasks, they had a range of teaching strategies that could be used without a great deal of conscious thought. Those teachers thought and talked about teaching approaches and were receptive to ideas for change. Despite the reference to without conscious thought' they are describing a cohort of effective teachers who can discuss strategies and who think about teaching approaches, demonstrating a
well-developed level of conscious thought. Corno (1989) in experimental studies has found evidence for the effectiveness of metacognitive approaches by teachers who model 'expert' processes for their pupils. The teacher asks the class, for example 'How would I tackle this problem?: What would I need to know before starting?: Where would I find the necessary information?: How would I start?: What would I do then?: What would I do if I got stuck?: How would I know if I had completed if satisfactorily?:' These are questions that tit comfortably on the lips of starting teachers as they engage in the planning of lessons and teaching sequences and it is important that the asking of these questions becomes habitualised, either of themselves or of their peers and mentors.

Several writers have tried a hierarchy of thinking skills, Giilbert Ryle (1949) differentiated between knowing that and knowing how. Annert (1959) draws a distinction between transfer and transferable skills and associates transfer skills with metacognitive skills. Within the context of his triarchic theory of intelligence Sternberg describes metacomponents as high order or executive processes and executive and knowledge acquisition components. Pearson (1984) distinguishes between habitual skill knowledge and intelligent skill knowledge, and Resnick and Bell (1976), Butterfield (1977) and Kirby (1984) all make reference to variously named high and lower order thinking skills. As Blagg (1991) concludes high level control processes are regarded as being responsible for the selection, coordination and sequencing of many lower order skills in order to create purposeful, cognitive strategies. Nisbet and Shucksmith (1986) have helped to clarify this distinction between strategies and skills by reference to football. Players within a team possess certain skills such as heading, passing, shooting and tackling. In preparing for a match the team can plan strategies by the selection, coordination and sequencing of these kills. A good team, with 'metacognitive' functioning, can monitor and respond to changing situations brought about by the failure of the
strategy. The best collection of individual players does not always win if they cannot combine their various skills to good effect, as demonstrated by Holland and Germany in losing to Denmark in the 1992 European Football Championships.

The binary conceptualization of thinking skills is given some credibility by the conclusions in a study of good police patrol officers, which recognized four distinguishing characteristics.

1. Competence in assessing the total situation.
2. Self monitoring one's own conduct;
3. Empathizing accurately with the concern of others;
4. Exercising power and authority in a manner consistent with organisational goals and professionals ethics.

As Norris (1991) points out this list could apply equally well to other professionals. These are close parallels with the work of McClelland and Dailey (1973) described earlier, in the identification of empathetic quality situational assessment and self-awareness as marks of superior performance. There is also some resonance with Gardner's theory of multiple intelligence which highlights the importance of interpersonal qualities. If these characteristics have a generic dimension it strengthens the case for regarding some, at least, as metacognitive. One of the inadequacies of a behavioural approach to competence, or one based solely one cognitive development, is the failure to recognize the silence of feelings to competence, in teaching, as in other professional domains. Robin Richardson in 'Daring to be a teacher' (1983) quotes a colleague writing to decline an invitation to a conference. I agree with the whole ethos of the meeting and I'm sure it's just the pick-me-up I need... But at the moment I'm afraid I could not bear to hear new ideas of any import - the net result at the moment would be feeling of guilt, incompetence, and relative deprivation. It's a long story, but I feel frustrated in the job and the only
way I feel I'm going is backwards.' It is difficult to imagine a passage with denser reference to strong emotion. Richardson argues that teaching strategies and skills are allied close to attitudes towards the pupils and oneself. He cites respect for the learners; his (or her) concern for them; his trust in his own feelings, his high self-esteem, docile curiosity, openness to hear new ideas, his preparedness to take risks, self-criticism and respect for opponents. This is a very unwidely bundle to carry into course planning, but it cannot be ignored if competence is to move from a paper list to an operationalised concept. It is possible to throw some light on this confusion of hot emotion and its importance through the work of psychologist Stanley Rachman. Rachman (1990) has proposed a three-system theory to explain many of the disconcerting research findings about fear. Fear has three recognised components (1) physiological, measured through perspiring, trembling, palpitations or heart rate; (2) behaviour, such as avoidance; and (3) a subjective cognitive component (what we think we now about the fear stimulus). The measures of these components may be reduced by treatment - behavioural, psycho-analytical or drug - but frequently the components respond at different rates. The conclusion reached is that fear is not a lump, the three components are related to each other, but not perfectly; they are partially independent. So a patient may be able to go on previously avoided underground trains without physical signs of stress and yet still complain of fear. This state is known as desynchrony.

In a study of administrators Argyris (1976) developed an approach in experiential learning which required the participants to question their own assumptions about the way they acted, particularly in relation to others. He and his colleagues were successful in sensitising participants towards their disfunctional behaviour and in identifying what they needed to do to achieve their goals. However, in role plays, they were unable to put the desired new behaviour into practice. In the same vein
Jarvinen (1989) describes a training course for nurse trainers in Finland. She found that the students found it very difficult to shift from commitment to detachment, from concrete to abstract, from experience to generalisation that could influence behaviour. Jarvinen identified feelings and emotions as a common barrier. Another interesting example of the interplay of cognition, behaviour and feelings is provided by Candy et al (1985). Long established patterns of behaviour are very difficult to change. When people engage in trying to improve their performance they experience a drop off in that performance, because their habitual skill is disrupted and ruffled by consciousness. It is possible that the learner's attention is divided by observing and performing, or perhaps the very recognition of the need for change undermines. It is during this dive in performance or behaviour, brought about by cognitive engagement, that there is the need for emotional, effective support from tutor, trainer or peers. Whilst cognitive psychology may have dominated thinking about the acquisition of knowledge and skills, humanistic psychology with its emphasis on holism and the personal experience of and transformation of events by the learner, can support the implementation of a broader definition of competence. The concepts of self and self-esteem are central to an holistic view of competence because they are crucial determining factors in motivation and through motivation, disposition to action.

Maslow (1970) described motivations as a hierarchical structure. Self-actualisation depends successively on fulfilling physiological needs, safety, social belonging and finally the respects of others. A self-defined narrow role for a teacher is for some a more comfortable, undemanding role. It reduces risk and supplies security. Attribution theory (Weiner 1956) suggests that motivation depends on the attribution of courses of success or failure to factors within or outside the control of the individual. In developing competence there is the need to shift the locus or control so that success or failure can be seen to be within
the control of the learner teacher. There is the need to provide emotional support and a sense of belonging as teachers step beyond the limits of their habitualised behaviour and thinking, which are based so much on past experience. The work of Brewin (1988) can sustain the belief in altering self-efficacy, particularly through peer group support. Competence is an inclusive concept. There are circumstances when we are certain that we have seen someone in action who is good at what they do. Conversely there are occasions when we are equally certain that we have seen the inept, the incompetent. This certainty breeds the confidence that we can describe the characteristics of competence and through that description begin to define the formula to be copied. Whilst this is not a complete illusion, it ignores the importance of context, the particular set of physical, interpersonal and emotional characteristics that provide the culture or environment for the performance. The inclusion of range statements in descriptions of behavioural competencies is a recognition of this problem, but it is not a complete salvation. In relation to professional competence it is often the values dimension that will alter the equation and upset a previous equilibrium, although failure of knowledge is also possible. In this cloudy atmosphere, without a clear language, it is important that initial teacher education institutions are clear about the principles and assumptions that underlie any framework that they might tag with the word competence. Messick (1984) competence is about potential. Performance describes the current performance capability, but competence is what a person can do under ideal circumstances. This places a responsibility on the professional educator, if the premise is accepted, to look beyond assessment procedures and concentrate on competence development. If competence becomes the remit of assessment machinery, about through a record of achievement format, the prospects are not encouraging because the elusive concept will be defined solely through what is easy to assess. It is as well to accept that assessment procedures will be inadequate.
In the search for the clarification of difficult concepts it pays to be eclectic. Competence-based approaches to professional education must be experiential and not limited to instruction. An experiential approach should not just be a description but also an ambition and a promise. Courses should be designed to create experiences that are varied and challenging because they provide a richness of evidence to work from. Learning cycles are a powerful medium and planning concept for utilising the potential of experience and establishing a bridge into induction, especially if professional development and even appraisal are founded on an action research model which follows a similar cyclical route. It has been argued here that one characteristic of competence (if not its definition) is a synchrony between cognition, feelings and behaviour and that diagnosis of poor performance will often reveal a disynchrony. Learning cycles are a natural vehicle for integrating these components or identifying the disequilibrium. In a learning cycle, behaviour, cognition and feeling will entwine and separate in varying combinations depending on circumstances. Behaviour and feelings may be particularly important during an implementation or action phase, while cognition and feelings might be the more likely partners during a review or reflection phase. Whatever the combination, it is fundamental that the processes at each stage are carefully scaffolded. It is commonly assumed that learning just happens as a natural consequence of experience. It is remarkable, in fact, how little is learned from experience on many occasions. Falling back on the analogy of sport, coaching has been revolutionised by the use of video and computer graphics which have enabled performance to be captured and analysed, frame by frame in slow motion. Both in in-service action research and initial teacher education, collection of evidence, not just through sophisticated technologies, can unlock the door to change.
Boud et al. (1985) have put some flesh on the bones of reflection and indicate how it can be developed beyond a headline word. They have described a three stage model for the reflection process:

1. returning to experience;
2. attending to feelings;
3. re-evaluation experience.

Heron (1982), while attending to feelings, suggests that we may be disabled by what he terms an affective barrier. Some students become stuck in a single interpretation if they are unable to overcome particular feelings. The last phase of the Boud et al. Model, re-evaluation of experience, is further divided into association, integration, validation and appropriation. Association and integration can be regarded as primarily cognitive process, whereby new information is compared with that in long term memory and integrated via existing conceptual schemata or new ones if there is a serious mismatch with present structures. This illustrates a further radical advantage of experiential learning cycles - the creation of cognitive conflict. This Piagetian concept, given substance in the CASE project for pupils, remains a cornerstone for cognitive development. The shock of new insights into teaching and learning which conflict with established views can trigger a substantial change in professional development. It is clear that analytical skills will be a crucial variable in determining the learning to be extracted validation and appropriation are more aligned with affective processes, acting as emotional gatekeepers to the memory. It should be underlined however that cognitive and affective processes will rarely act as independent processes, they will interact continuously. Creative or synthetic abilities, emphasised in Sternberg's work, will be engaged in the planning or implementation phase of the cycle. There is a job to be done for student teachers in supporting and igniting this process. PGCE students at
Newcastle University frequently bemoan their inability to think of fresh ideas for lessons, they feel themselves being sucked into a diet of repetitive activities. In conversation it is apparent that they have been unable to access ideas, resources and techniques that are, in theory, available to them. This is evidence of the difficulty of establishing transferability. It is at this stage of learning cycle that a metacognitive awareness is most at a premium. The ability to step back from the situation, survey the context and consciously draw from one's store of case studies through recognising similarities, will mark out superior performance, displaying the holism variously apparent in diplomats, police and teachers researched elsewhere.

Competence period to stay, at least for the immediate future, and we have to learn to work with it. It has been a stimulus for teacher educators to review the processes that strengthen initial teacher training courses and to move out of the shadow of the CATE criteria. It should encourage a connection between initial training and the work on teachers' thinking (see for example Galderhead, 1987). Elliot (1989) has defined competence as 'broad clusters of abilities which are conceptually linked.' Whilst accepting the value of the breadth of this definition, one should add that the links are emotional as well. The development of competence needs a curriculum for the affective and explicit attention to cognitive and metacognitive processes within an experiential framework.

1.16 IDENTIFICATION AND MEASUREMENT OF TEACHER COMPETENCIES:

By definition, teacher effectiveness must be measured in terms of changes in pupils. That are attributable to the teacher's help. It is theoretically possible to measure a teacher's effectiveness by measuring how much pupils learn from him or her and making allowance for other influences on pupil learning. In a practical situation, however, such measures of teacher effectiveness lack both reliability and validity to a
degree that probably makes them legally indefensible as indicators of individual teacher's competence. The only feasible approach to the assessment of individual teachers seems to be to assess their mastery of ways of behaving on the job which effective teachers have been shown to use. This decision to base on measures of process rather than product creates a problem in specifying the competencies to be used, since the nature of effective teacher behaviour is not well understood. There are three basic approaches to the solution of this problem:

**Research in teacher effectiveness**

This approach is not so sound because of the severe lack of empirically demonstrated relationships between teacher behaviour and teacher effectiveness. Despite hundreds of references to the problem in the literature, only a few teacher characteristics have ever been shown to relate to teacher effectiveness, for too few to serve as a basis for a competency based system.

**Theory**

The theoretical literature contains plenty of advice about what makes an effective teacher, most of which comes from outside the profession itself. Learning psychologists, psychotherapists, philosophers, curriculum developers, and other even less qualified have theories to propose; but none of them are supported by enough hard evidence to justify their use.

**Teacher Wisdom**

It appears to offer a little more promise. This alternative is to ask the teachers themselves what behaviours are needed to make a teacher effective. While most teachers cannot apply the breadth of knowledge of the researchers or the creative ingenuity of the theoretician,
they are in immediate contact with all aspects of the problems as they occur, and may be less likely to overlook or incorrectly weigh the importance of any single aspect. The teacher, moreover, has a stake in the problem of specification. Not only professional advancement but survival depends on how successfully the problem is solved. Teacher's perceptions of what makes a good teacher, then, can be used in drawing up a first set of specifications.

### 1.16.1 The Competency List

Competency is seen as the ability to cope with a certain class of problems encountered on the job. A teacher who can deal with problems in a certain area is said to be competent in that area; and a fully competent teacher is one who can cope successfully with any professional problem. A competency list should be prepared through the specification process, the presence or absence of which should be judged likely to be an index of a teacher's effectiveness. To ensure comprehensiveness, the list should be organised under headings called "competencies". As each competency is adopted as a part of the definitive set, performance criteria should also be listed. This adds specifics to the definition of the competency and also provides guidelines for the construction and/or selection of the measuring instruments.

### 1.16.2 Tools for Measurement of Competencies

Researchers have found five instruments to be most effective in measuring competencies. Coping Analysis Schedule for Educational Settings (ASES) (Spaulding, 1970) is designed to measure pupil socialization; Spaulding Teacher Activity Rating Schedule (STARS) (Spaulding, 1974) examines the cognitive instructional strategies of teachers; Observation schedule and Record Form 5, Verbal (OSCAR5V) (Medley, 1955) looks at the verbal behaviour of teachers as perceived by
students; Florida Classroom climate and Control System (FLACCS) (Soar, Soar, and Ragosta, 1971) examines the control tactics of teachers as well as their effective behaviours; and the Teacher Practices Observation Record (TPOR) (Brown, 1972) measures the congruency of observed teacher behaviour with Dewey’s philosophy of experimentalism.

1.17 TRAINING MODEL

The training model presented here follows analytic approach. In this model, the complex target behaviour is analysed into the simpler meaningful components convenient for imparting training to the trainee. The model using the component behaviours in instructional situation is designed. This model is then presented to the trainee. The trainee tries to reproduce the model. Reproduction of the model is scientifically monitored. The trainee is provided precise on the spot feedback on the basis of the monitored information on his performance with a view to modifying his successive reproduction attempt. By implication, the subsequent model reproduction is the modified version of the preceding model reproduction. The process continues till the reproduction of the model reaches reasonable level of closeness to the model design. This is the mastery level adequate and acceptable to the trainer. The main components of the model are discussed as follows:

1.17.1 Task Analysis

The training task is analysed into its components. The components to be viable should be in the form of molar teacher behaviours which are observable and measurable. The level of analysis of the training task into component behaviours is determined by the difficulty level of the task.
1.17.2 Selection of the training task

The analysis of the training task is followed by taking a decision about the unit of training. In other words, the trainer will have to decide about the meaningful segment of the training tasks to be taken at a time. The decision is to be taken in view of the trainability level of the target group which is to attain mastery over the component behaviours containing the training task. Probably, availability of the time for practice is another important factor which demands consideration in this connection.

1.17.3 Designing the model

Once the training unit has been selected, the model of the training task is designed. The model includes operation of the component behaviours comprising the training task and examples of its use in instructional situations. The media and materials to be used for its presentation also form a part of the model. Operational guidelines for presenting the model to the trainees further add to its clear perception.

1.17.4 Presenting the model

The presentation of the model apparently, is based on the model design predicts in the preceding stage. The presentation can, however, be through different mediums. It can be presented through written material, oral explanation, live demonstration, films, video and audio tapes, or any combination of these devices. In our situation, presentation through written material, oral explanation and live demonstration; worked practically well (Das 1979, 1980).
1.17.5 **Reproducing the Model**

The model presentation prepares the trainees for practising the task. During practice he attempts to reproduce the model. Needless to say that it needs systematic planning and careful preparation for executing the model. The reproduction effort can be in real or simulated instructional situation.

1.17.6 **Monitoring and feedback**

The reproduction of the model by the trainee is monitored through live observers using tools of systematic observation or through video and audio tape recorders. Monitoring of the reproduction is done for the purpose of providing feedback to the trainee on his performance. Obviously, feedback is in terms of the specific behaviours comprising the training task. The arrow in diagram in reverse direction between reproduction and feedback boxes indicates this function.

1.17.7 **Modified Reproduction of the model**

Monitoring the reproduced model provides procedures for modifying reproduction behaviour of the trainee with a view to reaching the target behaviour of the trainee with a view to reaching the target behaviour predicts in the model design. Modified reproduction MM1 is planned taking into account the discrepancy between the model design and the monitored reproduction performance of the trainee. This relationship is shown by the arrow linking model reproduction, feedback and modified reproduction MM1. The process is repeated till the trainee attains the desired level of mastery over the training task. The process is shown by the errors linking modified model reproduction MM1. MM2...MMn and model design.
These are several training strategies following analytical approach. Three of them are being presented here, since considerable evidence on the effectiveness of training in international analysis for developing specific teaching skills for developing General Teaching Competence is available in the country itself (Das 1976, Jangira 1979). Recently, simulation and gaming exercises for acquiring skills, particularly those involving decision making, is being effectively and efficiently used. Though little evidence on its effectiveness is available in the country, the experience elsewhere is encouraging. Random attempt are being made here as well (Jangira 1979).

1.18 CLASSROOM QUESTIONING BEHAVIOUR TRAINING

Training for classroom questioning behaviour comprise training structuring classroom questions at different levels, question delivery behaviours, question distribution behaviours and pupil response management behaviours using paper and pencil exercise and microteaching approach. The training for classroom questioning behaviour purports to help the student teachers to:

i. acquire the competence to manage pupil response appropriately.

   ii. acquire the competence of structuring classroom questions appropriately at memory level, convergent applicant level, divergent applicational level and evaluation level of classroom questions.

   iii. acquire the competence to distribution of the questions in the classroom, and

   iv. acquire the competence to deliver the questions in the classroom.

   v. acquire them with the functions of classroom questions.
The content of the training include functions of classroom questions- managerial and substantive. Managerial questions refer to the preparation and management of learning environment in the classroom, securing and maintaining pupil attention. The substantive business function of classroom questions covered creating a learning set, advancing the learning task, planning drill and practice, reviewing the progress of learning, diagnosing specific learning difficulties, and evaluating the learning outcomes.

Structural characterisation of classroom question covers relevance, precision, grammatical correctness, clarity and levels of questions. The question delivery behaviour includes the speed with which question is asked and the modulation of teachers' voice. The pause at the end of the question for allowing time for pupils to think also form a component. The components of the distribution behaviours includes distribution in space, distribution among volunteers and distribution among non-volunteers.

Finally, management of pupil responses constitutes an important aspect of questioning. For a particular question there are six major response situations, namely, no response, wrong response, incomplete response, partially correct response, and chorus response. These different kinds of pupil responses are managed by the student teachers differently. So components of management of pupil response behaviour of student teachers over acceptance of response, rejection of response, prompting, seeking further information and structuring pupil's response.

1.19 SELF CONCEPT

The attention of psychologists and educators for quite some time has been attracted to study the ‘Self’ and ‘Self-concept’. It has been
recommended that the on the whole performance of a teacher in the classroom is largely dependent on his self-concept. Accordingly it has been stressed that the total effectiveness in any domain of teaching work is to a very considerable degree influenced by the self-concept.

A teacher’s role engages three main functions. Firstly, ‘a man making process’ which is quite difficult and challenging. Secondly, a duty towards the nation, society and children which is replicated in his practical job. Thirdly, his own role perception which is significant for his professional growth. Teacher’s behaviour in the class-room is a function of his ‘self-concept’. During decision making and decision implementing processes ‘self-concept’ serves both as a crutch and to show the way.

An insightful teacher can correct his faulty ‘self-concept’ through self-evaluation, constant watch and observation upon his own behaviour, self-discipline, intellectual-discipline, suggestions from others and by twittering into his own self images for sensible evaluation. It needs hardly any stating that a realistic ‘self-concept’ helps a teacher to grow professionally and also helps in proper emotional adjustment with his environment. It now generally stands established that positive ‘self-concept’ strengthens the ability of reasoning, the problem solving attitude, speed, accuracy and efficiency of a teacher.

**Shifting focal point on Self**

The concept of self in educational research has not yet been extensively or intensively explored by the investigators or even psychologists. The formation of ‘self-concept’ is a continuous and life long process and it is related fundamentally to the problem of thinking. The way one thinks about oneself and constructs an image of oneself that gets projected are vital in this regard. The role perception of an individual through image building influences the concept of ‘self’ very much.
Human behaviour is a very composite phenomenon and as such is very difficult to understand and predict. But ‘self-concept’ has to be inclined to become an important means in the recent years to interpret, understand and predict it. Rogers believed that ‘self’ is a basic factor in the formation of personality and in determining behaviour but according to him it had entered the field of psychology as a problem of research in the later quarter of 19th century. As early as 1890 William James, developed the notion of ‘self’ around which he could construct a grand picture of mental life. Such a notion of self gave way to concepts such as ‘personality traits’ and the dimensions of personality, which eventually led towards statistical formulations, objective measurement and assessment in quantitative terms.

Now a days, ‘self-concept’ has been recognized as a powerful means for making a profound study of personality as it helps in understanding human behaviour. It is now believed that self is a main controlling agent, which shapes human fortune. In reality, ‘self’ is viewed by the majority of self-psychologists as the nucleus of human body. Thus, the self is not only related to motivational activity alone, but acts as a regulating and coordinating factor in perceiving, learning, remembering, planning, risk taking, judging and in decision taking substances or situations. While solving a problem or in undertaking some work, the level of performance is determined not only by the difficulty or ease of the problem, but also by the image one has built about oneself in general. When one grows, one learns about one’s reciprocities with others as high, low, friendly or unfriendly, dominant or subordinate.

**Psychological Explanation of Self**

William James (1890) was the first to analyse ‘self’ in terms of its constituents. Later Baldwin (1895) gave an interactionist account and attempted the study of ‘self’ on scientific footing. Cooley (1902) observed
‘self’ through social interaction as a ‘looking glass for the self’. Mead (1913) also adopted a similar approach based upon the lines indicated by Cooley and analysed the ‘role-taking process of the self. Peaget and Wallen (1932) declared ‘self’ as the product of social interaction with the members of social or linguistic groups. Koffka (1935) viewed ‘self’ as a nucleus of the ego and an executive, instead of an object or process. Chapman and Vokanan (1939) declared that the concept of self is a powerful determinant of one’s level of aspiration Lundholm (1940) made a clear cut distinction between ‘subjective self’ and ‘objective self’. According to him ‘subjective self’ presents symbols, words and self-awareness and ‘objective self’ consists of those symbols in terms of which other persons describe the individual. It is curious to observe that he did not mention about ‘ego’ in this context. It was Chein (1944) who undertook a still finer distinction between ‘self’ and ‘ego’ by declaring that ‘self’ is what one is aware of, while ‘ego’ is a group of processes.

Later, Murphy (1947) propounded the idea of ‘self’ as the individual known to the individual. Around the same time Hilgard (1948) emphasized the study of the ‘inferred self’ while the phenomenologists like Combs and Snygg (1949) maintained that phenomenal self includes all those parts of the phenomenal field, which the individual experiences as characteristic of himself. It may be noted that views of such self-psychologists appear to have shifted in favour of the importance of ‘self’ both as an object and process and efforts were made to provide the concept of ‘self’ as a suitable and meaningful place in the scheme of things.

**Self as object and Self as Process**

Investigators concerned with the study of personality have tried to conceptualize behaviour in terms of single unified process, where many theorists have utilised the notion of self-concept. Lindzey and Hall (1957) suggested that the term ‘self’ has come to connotes two distinct
meanings to psychologists: self-as-object and self-as-process. Self-as-object may be defined simply as the aggregate of attitudes, feelings, judgements and values, which an individual holds with respect to his behaviour, his ability, his worth as a person; in short, how he perceives and evaluates himself. Self-as-process is defined in terms of activities such as thinking, perceiving and coping with the environment. Some individuals have used the term ‘ego’ to indicate the same construct. The self-concept described in terms of self-as-object is considered to be a effective aspect of personality and that individual differences are regarded as meaningful as differences in abilities, values, motives and attitudes. The self-as-process administers behaviour and adjustment.

**Self-Versus-Ego**

In developing the concept of self as distinct from ego, William James analysed self in terms of its constituent parts-self feelings, and actions of self-seeking and self preservation. The constituent parts of the self included the sum total of what an individual considers to be his body, traits, characteristics, abilities, aspirations, family, work and other such affiliations. He further advanced the concept of the pure ego, which was explained in terms of the stream of consciousness constituting one’s sense of personal identity. Regarding the concept of self based on the theory propounded by James, some prefer to treat the respective concept of self and ego as separate. There are some who have no objection to the use of these two terms interchangeably. Thus, according to Koffka (1935) self is the core of nucleus of the ego and the ego is conceptualized both as doer and object. Chein (1944) made reference to the prevalent view of self and ego. According to him self is what one is aware of, whereas ego is a group of processes. The motives and ideas of the ego serve the purpose of defending, extending, enhancing and preserving the self. The threat to
the self is sought to be countered by the ego. He feels that self is thought to be a part of the total personality of an individual.

The self follows a course of continuous development and growth and becomes more and more complex and involved with the emerging of individual into adulthood. According to Bertocci (1945) ‘self-process’ is tagged ‘self’ and ‘self-as-object’ is called ‘ego’ following the traditional meanings attached to these two terms. His use of the term ‘self’ corresponds to Freud’s use of the term ego as unitary activity of sensing, imagining, remembering willing, feeling and thinking.

The ego, as Bertocci conceived it, is a cluster of values, which may become embodied in the form of traits with which the self identifies its success rather similar to the use of this term by Sherif and Centrill (1947) who are of the view that the ego is a constellation of attitudes, for example, ‘when I think of myself, what I value, what is mine and what I identify with’. Thus, their ego is something more than self-as-object, for if the ego becomes involved, it motivates behaviour. As set forth by them ego-involved behaviour is more effective than its non-ego involved part. In spite of their best efforts, the self-as-object and ego as process remain less differentiated and clear. Murphy (1947) described ‘self’ as the ‘individual known to the individual’ and ‘ego’ as group of activities concerned with the enhancement and defence of ‘self’.

Thus, self would consist of varied attitudes and feelings in regard to the person himself and ego would refer to associated processes and activities. In this framework, self is object, whereas ego is process. In this way, those who distinguish between ‘self’ and ‘ego’ seem to be generally agreed on regarding ‘self’ and entity and ego as a group of processes. Snygg and Sombs (1949) talk of the phenomenal self, since all behaviour without exception is completely determined by and contingent on the phenomenal field of the behaving organism. Further, they
maintain that the phenomenal field consists of totality of experiences of which the individual is aware at the time of action.

Varying awareness influences the behaviour of the individual. On this view the phenomenal self serves both as the object and the doer. It is a doer because it is an aspect of phenomenal field, which determines all behaviour. It is also an object because it consists of self-experiences. Hilgard (1949) regards behaviour not as a product of the self but rather as a complex of psychological processes aroused by proximal and distal stimuli of which a person is largely unaware. He accords weightage to forces of factors or factors outside the self. Ausubal (1952) proposed a scheme of self made up primarily of perceptual ingredients whereas ego, according to him, consists of effectively charged conceptual ingredients such as self-ideals and self-values.

Sarabin (1953) regarded self as a cognitive structure consisting of various aspects of an individual’s being-somatic, receptor, effector and social. Since all these are based on experience, Sarabin speaks of the ‘empirical-selves, using the term ‘self’ and ego’ synonymously. Shoben (1962) defined self as a relatively stable organisation of values that mediates and focuses on that component of behaviour which influences very much every day life of human beings. Since he makes hardly any mention of ego, it may be presumed that he construes self both as object and doer. Miller (1962) defined ego as ‘the individual’s conception of himself’. He differentiated between ego and self still further. He laid stress on individual’s conception of himself rather than on socially perceived self as reflected in other frames of references referred to earlier.

It is clear, therefore, that ego and self have been by and large considered to be two different concepts and there is not almost a consensus of opinion as to considering the ego in the sense of an executive
and self as a group of attributes imitated in gathering of perceptions and attitudes of person about himself.

**Rogers Theory of ‘self’**

Rogers (1947) who was persuaded by the theory of phenomenal self believed that in addition to the self-structure there is an ideal self which specifies what the person would like to be. For him, the self or self-concept denotes the organized, consistent and a conceptual gestalt composed or perceptions of the characteristic of 'I' or 'ME' and the perceptions of relationship of 'I', 'ME' to others and the various aspects of life together with the values attached to these perceptions. It is viewed as a gestalt, which is available to awareness though not necessarily in awareness thus, it is conceived of as a specific entity. The theory of conceptual gestalt propounded by Rogers is perhaps the most important theory reported in the West. It differs from other Western theories of ‘self’ particularly of Freud and his dissenting associates emphasising the ‘self’ as an ‘I-ME’ reaction of mental processes and other theories of self referring to ‘I-ME’ reactions of individual because Rogers’ concept of ‘self’ apart from individual’s ‘I-ME’ relationship includes relationship with other ‘I-ME’ also.

Rogers further argues that the ‘self’ is a basic factor in the formation of personality and in the determination of behaviour. The phenomenological theory of self as advanced by Rogers relies heavily upon the concept of ‘self’ as an explanatory concept. It may be observed that the study of ‘self-concept’ could get the necessary, the fillip for making depth study of personality partly due to the direct consequence and bearing of mental hygiene and clinical movement but more because of the realisation that psychology without self-cannot succeed in knowing human behaviour. Rogers theory of ‘self’ influenced clinical psychology and special
perception. Halland Lindzey (1957) explained the chief conceptual ingredient of Rogers theory of ‘self’ as under:

- The organism is a total individual
- The phenomenal field is the totality of experience and
- The self is differentiated portion of the phenomenal field and consists of a pattern of conscious perceptions and values of ‘I; or ‘ME’

It may be worthwhile to point out that the nuclear concept of Rogers’s theory of personality is ‘the self’ which has numerous properties and some may be indicated as under:

- It develops out of the organism’s interaction with the environment.
- It may be introject the values of other people and perceive them in a distorted fashion.
- The self strives for consistency.
- The organism behaves in ways that are consistent with the self.
- Experiences which are not consistent with the self structure are perceived as threats.
- The self may change as a result of maturation and learning.

Rogers discussed the nature of these concepts and their interrelationships in a series of nineteen propositions, formulated by him. Accordingly he made the self and object of empirical research and changed the theoretical status of self given by the psychologists previously. It is interesting to note that he proposed a theory of personality development, a personality functioning and personality change with the concept of self as its central focus.
EVOLUTION OF ‘SELF’

“The-Self’ is considered as that segment of an individual, which is known to an individual. It is one’s own image in one’s own eyes, as perceived, felt and thought of by oneself. One perceives others and can perceive oneself also, but this perception of one and others cannot be objective and correct. For an individual his own self is at the core of everything that matters. A person behaves in accordance with the self. Two things are assumed to be vital in the life of an individual – the concept of ‘self’ and awareness of the environment. The other reality, however objective it may be, shall not affect the behaviour of a person unless it gets to self. In tracing the evolution of the self-concept it may be observed at the outset that psychologists drawn towards it believed that the self of a person develops from birth onwards through the process of differences between ‘ME’ and ‘not ME’.

It was regarded as the outcome of the product of interaction from infancy with an individual’s physical and social environment. Baldwin (1895) thought that the ego and the alter are thus born together. Cooley and Mead in 1902 and 1903 developed the concept of self as based on social interaction. Piaget (1932) through his early researches and Wallon (1933) in his later studies conceived of the self as a product of interaction with others. Sarabin (1952) as pointed out earlier believed in three aspects of one’s self-somatic, receptor-effector and social. According to him the child continues to incorporate new classifications and qualities during his life span.

It has been observed and proved from many cases of prolonged isolation in childhood that the formation of self depends upon interaction with other persons. It is in this course of interaction that the child develops the self-attitude in his life. Clark (1947) and Hawritz (1944) also found that self attitude is greatly influence by verbal
interactions and conceptual classification. Therefore, the origin of the self may be said to be derived from interaction between two series of events and many experiences with the environment and social contacts help self-concept to develop. The company of fellow children, the family environment, adult’s guardianship, parental care and treatment exercise deep influence on the nature of the quality of the classificatory scheme defining, ‘what one is’ and ‘what one is not’. By using a series of ‘ego; norms, Sherif and Sherif (1956) stressed on consistency in competing, with others, in comparing, with others, in experiencing sympathy with another’s distress, in responsibility for self. Also setting of goals on one’s own performance appears gradually as the child participates in social and co-operative forms of play as contrasted with side by side or parallel play.

In this way the child to achieve adulthood and become a socialised member of the society. Due to body’s growth and change in life, a transition in the self-concept also occurs from childhood to old age. Dinkmeyer (1965) has laid emphasis on the developmental character of the self, and described that the interaction continues throughout the life and is linked with the old, familiar sensations, pleasure, pain, resistance, acceptance, rejection and gratification with the passage of time. As the child grows, he learns about the world and also about himself.

Thus, three inferences may be adduced evidently in respect of self development from the above explanation. First, the self is a developmental formation in the psychological process of the individual; Secondly, the self consists of interrelated and acquired aspects of life; and thirdly, the individual’s relations to others are defined to be regulated by self in various concrete situations and activities.
Parameters of ‘self’

The self examinations have been attempted with four major dimensions popularly known as perceived self, real self, social self, and ideal self. These are being explained as follows:

**Perceived Self**

Perceived self simply implies what a person thinks he is. This is influenced by the physical self of the person, his physical appearances, his dress and grooming, his abilities and dispositions, his values and his beliefs and aspirations. Thus it represents traits of one’s nature, which have been detected and integrated into a pattern. It constitutes the idea or concept one forms about oneself. Perceived self is often called ‘self-concept’ of an individual.

Sutherland (1956) referred to it as the individual known to the individual. It is his ‘I’ and ‘ME’ his constant frame of reference, the proud possession which he wants to maintain and enhance at all costs. This part of individual’s make-up determines his behavioural expressions. Sullivan (1953) suggested that the self-concept as a unit has many facets of a dynamic equilibrium.

**Real-Self**

Real self indicates what the person really is. It also comprises what the individual is aware of and as such it is characteristic of the person as assessed objectively or an seen sometimes by other people. It is also called the perceived self plus unconscious self.

**Social-Self**

This self passes on to the self as one thinks or others view it. It may not correspond with other’s perceptions of oneself. But even then
this self has a very major effect upon one’s behaviour. It is actually the self as looked upon or approximation by persons other than the individual oneself.

**Ideal-Self**

This self involves what an individual thinks he would like to be. Butler and Haigh (1954) viewed that the ideal self involves ‘the organised conceptual patterns of characteristics and emotional states which an individual consciously holds desirable or undesirable for himself’. Some researchers have resorted to the use of ‘ideal-self as a means of determining the self aspirations of the persons. This concept has been shown to be valuable tin determining the relationship between how the person sees himself and what he thinks he should be like.

Hurst, Robinson and Dorr (1946) theorize the ideal self to be developmental in nature and suggested that the ideal self begins when the child identifies with a parental figure. They also observed that during middle childhood and early adolescence it moves through a stage of romanticism and glamour, and concludes in late adolescence as a composite of desirable characteristics, which may be represented by an attractive, real, and visible young adult, as perhaps even an imaginary person. This classification of the self has helped in revealing many interesting facets. Many researches have been done to bring to light this fact. Taylor and Combs (1952) Bills and Vance (1953) Zimmer (1954) and Zukerman and Monashkur (1957) have done interesting studies in this field. Sharma and others (1967) observe that self-acceptance can also be as effectively measured by positive – negative can also be as effectively measured by positive – negative dimension as perceived-ideal self discrepancies.
Components of Self-concept

Hurlock (1974) observed that the concept of self has three major components; the perceptual, the conceptual and the attitudinal. The perceptual component is similar to physical self-concept which includes the image of one’s appearance, attractiveness and sex appropriateness of body and the importance of different parts of body. The conceptual component is similar to psychological self-concept which relates to the origin of the individual, his abilities and disabilities, his social adjustment and traits of personality. The attitudinal component refers to attitudes of a person about his present status and future prospects, his feelings, about this worthiness, his attitudes of self-esteem and pride and shame. It also includes his beliefs, convictions and values.

Self-Concept – A Behaviour Determinant

An individual’s behaviour is a function of his ‘self-concept’ and depends upon the way in which he perceives the situation. Adler (1931), Snygg and Cumbs (1949) Klockhohn and Murray (1953) Rogers and Dymond (1954) and McCandless (1962) have established the fact that an individual behaves in a particular situation according to his ‘self-concept’ and that ‘self-concept of an individual dictates and directs his response in any setting. Adler, as early as 1931 observed how the feelings of inferiority (components of self-concept) affect an individual’s behaviour and his attitudes towards the society and situation in the family. Snygg and Combs (1949) suggest that behaviour is entirely dependent on organism’s perceptual field, which means the entire universe, as it is experienced by the individual at the time of action. Thus, behaviour and ‘self-concept’ interact with each other and influence each other.

Bugental and Cunning (1955) state that the success with which the individual adjusts to the problems of adult life is bound to have
some influence upon his ‘self-concept’. They have found a positive correlation between successful adjustment and stable ‘self-concept’. An individual’s behaviour is dictated by his ‘self-concept’ in a particular situation and is influenced directly or indirectly by this.

Thus, it may be taken to imply that ‘self-concept’ plays a vital role in the behaviour determination of an individual.

**Self as an Actualiser**

A.H. Maslow has developed a new thesis by formulating a paradigm showing a hierarchical nature of need-mix to support it. According to him the two higher needs viz self-esteem and self-actualisation are dependent on the fulfilment of basic physiological needs, safety needs for love and belongingness. The emphasis has been laid on the highest type of need in this scale, which refers to self-actualisation. Maslow assumed that those needs, which have the greatest potency at any given time dominate behaviour and demand satisfaction. The individual feels driven so to say by a high priority need. When the need is satisfied, a high order motive (need) makes its appearance and demands its satisfaction, and so on to the top of the hierarchy. The highest need, which is called ‘Self-actualisation’ is defined by Maslow as follows;

“A Musician must make music, an artist must point, a poet must write, if he is ultimately to be at place with himself what a man can be, he must be. This need we may call ‘Self-actualisation’. It may be observed that ‘Self-actualisation’ need not take the form of creative characteristics of a genius. A fine mother, an athlete, a good workman, or a teacher may be actualising their potentialities in doing well, what they can do best. It is never the less true that ‘Self-actualisers’ are comparatively rare and proportionately represented among the gifted. Most of us apparently are seeking satisfaction of lower order needs.
1.21 TEACHING ATTITUDE

In the world, some individuals enjoy every moment of their life and excel the others in acquiring some skills and prove themselves more suitable and competent. The behavior of any person depends upon his attitude towards any idea, person and object in the environment. Therefore, attitude is one of the important elements of one’s behavior. An attitude is a predisposition to behave in particular way towards given objects.

Attitude

Attitude is a familiar word and it is used freely to express one’s way of thinking, feeling or behaving. The term attitude has been used by psychologists in several connotations and there are a number of agreed definitions of the term.

Allport G.W. (1935) – “An attitude is a tendency to respond positively or negatively to certain objects, person and situation. It is mental neutral state of readiness; individual is response to all objects and situations with which it is related.”

Bagardus (1931) – “Attitude is a tendency to act towards or against something in the environment which becomes thereby, a positive or a negative value.”

Nature of Attitude

An Attitude should meet the following criteria:-

- Attitudes have subject – object relationship
- Attitudes are learned
- Attitudes are relatively enduring states of readiness.
- Attitudes have motivational affective characteristics
Attitudes are numerous and varied as the stimuli to which they refer. Attitudes range from strongly positive to strongly negative.

**According to Allport**

- Attitude is the mental or neutral state of readiness.
- Attitude changes the reactions of the individual.
- Attitude influences the reactions of the individual.

Therefore, Attitude is a state of readiness, a tendency to act or react in a certain manner when confronted with certain stimuli.

**How Attitude are formed**

No one is born with any attitude. They are learned in a culture in a course of individual development. Therefore, attitude is generally accepted or as acquired characteristics of an individual. After careful study of human behavior, Allport postulated four common conditions, for the formation of attitudes:

- Attitude are found through accumulation and integration of many experiences encountered in growing up.
- Attitude may develop through differentiation.
- Attitude may result from a single dramatic experience
- Attitude may be adopted readymade from other through imitation or identification.

Thus, attitude are learned in course of life, experiences which make the individual to behave in characteristics ways towards any person, objects or issue to which they are related.

Teaching is the profession that shapes education. It is essential profession, which makes all other professions possible. Well qualified, caring having positive teaching attitude and committed teachers will improve curricula and safe school and highest standards
in the world. It will ensure that our children are prepared to face the challenges and to utilize the available opportunities.

**Attitude and Teachers Efficiency**

Therefore, the success or failure of any educational system rests largely on classroom teacher and there is no substitute for an effective teacher. Since long time it was considered that anyone can be a teacher provided that he possess knowledge of concerned subject, but today’s education is not limited to impart knowledge alone. The teachers are responsible for the harmonious development of their students and the destiny of the world lies in the hands of the teacher to a large extent. Since the teacher experts a great deal of influence in the pupils, so teacher behavior and attitude are the important variables in the dynamics of the classroom and plays a vital role in the development of the students. A teacher who has the positive attitude towards teaching can only bring the desirable change in the child. Favourable attitude of the teachers are likely to promote the creative potentiality of students while unfavourable ones may demote it.

Positive Teaching attitude set the tone for a positive learning environment. As with the positive and energetic attitude a teacher is the facilitator, guide and role model and teacher sets an example and this attitude goes a long way. Positive teaching attitude means perfection, the optimum level of efficiency and productivity on the part of the teacher. He is able to perform his best in the process of education. Teaching profession involves dedication. It is a part of teacher’s affective or emotional reaction to their experience in an educational setting. It can be seen as a part of learned behavior or attitude associated with the behavior of teachers. Therefore a teacher having positive teaching attitude will shape the young ones into individuals of potentials and worthy characteristics.
The following points would have a synergetic effect on the education imparted and leads towards the harmonious development of the students:-

- Teacher must have the positive attitude towards teaching.
- Teacher should lead from the front
- He should instill a positive outlook and an optimistic approach in the students
- He should be cool and polite always
- He should praise each if there is slight improvement in his students.
- He should be co-operative with students
- He should try to remember the names of his students and should have interest in knowing about others.
- He must inspire his students to work hard
- He should always encourage his students to help others
- He should never criticize anyone in front of others.

These attitudes would be beneficial for the teachers in developing themselves and also in motivating the students to reach the greater heights.

Himmelfarb and Eagly has defined teaching attitude as to refer to any reports of what people think, feel or of the ways in which they intend to act. Noad (1979) explored relationship between educational attitudes and performance of fifty one elementary student teachers. Results indicated that 26 percent variance in student teacher performance was contributed by educational attitudes. Attitude towards pupils was reported to have significant correlation with student teacher achievement by Majagi (1980). Attitude towards teaching was found contributing towards the criterion variable of university total marks of B.Ed. students (total an female samples by Vyas (1983). Mc Laurian (1983) found
significant relationship between teaching attitude and achievement and common and complete scores on the NTE for males and females registered for student teaching. In Gopaacharyulu’s study (1984) attitude towards the training and profession were found to be predictors of total achievement of elementary teacher education students. Gopal Sabharwal and Tewari (1986) found significant correlation of attitude towards teaching with total internal marks of groups one and with internal evaluation marks, external evaluation marks and total marks of group two: and with total marks of group three of sampled student teachers. Attitude also turned out to be one of the significant predictors of student teacher performance in the professional course. Sabharwal (1989)’s survey showed significant relationship between teacher attitude inventory, attitude towards teaching profession, child centered practices, educational process, pupils and student teacher achievement as measured by total external assessment and total assessment scores.

Attitude towards teaching professional was found related to success in student teaching by Sherry (1964), Martin Jr. (1970), Agrawal, Gupta and Saxena (1980), Sabharwal (1989); practicals by Gopalacharyulu (1984) and classroom teaching by Agrawal (1969), in the case of all the three samples, supervisors’ ratings and total practical assessment by Vyas (1983). A favourable teacher attitude was found to be significantly related to high ratings of some interns by Rothwell (1970). Sherry (1964) found significant relationship between supervisor’s ratings of student teacher performance and attitude. It was also found that attitude occupied a more important place than interest for success in teaching.

Squir Catheart and Worth (1981) found significant relationship between attitude towards ranking of mathematics in a mathematics and curriculum instruction course of prospective elementary teachers. Attitudes towards teaching profession emerged to be one of the
two predictors of student achievement in practice teaching in Gopalacharyulu (1984)'s study Mahapatra (1987) and Goyal, Sabharwal and Tewari (1988) reported significant relationship between attitude and practice teaching; and practice teaching internal, external and total marks of group II of the sampled student teachers respectively. In Sabharwal (1989)'s study attitude emerged to be one of the significant predictors of performance in total and external assessment of practice teaching.

In studies conducted by Hughes (1970) and Halverson (1974) no relationship was found between attitudes and student teaching. Schivley (1976) reported MTAI to be ineffective in predicting student teaching success. Bilbo (1972) stated that MTAI had the least efficiency in predicting success in student teaching. Dawson (1972) too reported that there was no evidence to indicate that MTAI could predict student teaching success and to show that high scores on MTAI made the most successful teachers. Ghosh (1982), reported that high score on attitude was not associated with high score in practice teaching. Dubey (1986) also found no significant relationship between scores on attitudes towards teaching and scores on IIS. Tharyani (1986) found no significant relationship between attitude towards pupils and teacher behaviour in the case of high achievers. In the case of low achievers it showed a negative relationship.

Thus, teaching attitude plays an important role in the performance of teachers in their classrooms.

1.22 SIGNIFICANCE OF THE STUDY

Various commissions and committees on education in general and teacher education in particular have pointed out the inadequacy of teacher education, especially the student teaching programmes (University Education Commission, 1949; Secondary Education Commission, 1953; the International Team on teachers and
Curricula in Secondary Schools, 1954; Education Commission, 1966). The major drawback in our student-teachers programmes is that they do not develop necessary teaching skills among the student teachers. Their teaching competence does not improve because of lack of training in teaching skills (Jangira, 1980).

The Indian Education Commission, 1966 pointed out that the destiny of India is being shaped in her class-room. The emerging shape of the destiny undoubtedly depends on what goes on in the classrooms, and how does it go on? Educational effectiveness is determined by the quality of the teacher pupil transactions in the classrooms in our schools. The quality of classroom transactions in their turn depends upon the quality of teachers and their professional preparation. Questioning is very important teaching skill. Questions can be asked to motivate the students by way of arousing their curiosity, to develop concepts and ideas through systematic probing, and to review and evaluate the knowledge already learned. Despite the fact that questioning is recognised as a significant tool for classroom instruction, adequate training in questioning is not imparted in our teacher training programmes. Studies have revealed disturbing facts about the quality of questions teachers asked in the classroom. Majority of the questions asked demand simply recall and recognition- the most elementary form of the intellectual process (Smile and Meux, 1962; Adams, 1964; Gallagher, 1965; Davis & Tinsely, 1967; guszak, 1960; Bertolomes, 1969; John 1970, Jangira, 1979). Studies have not revealed conclusive results regarding relationship between teacher classroom questions and student teacher self-concept. Some studies indicate positive relationship between these two variables (Sharma, 1972; Shaida, 1976); while a few studies indicate non-significant relationship (Roy, 1977). Similar are the findings abroad. Rosenshine (1978, 1981) and Winne (1979) have not found positive relationship between teacher classroom questions and student teacher
self-concept; whereas Redfiled (1981) has found that higher level questions have a positive effect on student teacher achievement.

Study of trend reports and abstracts in Buch, 1974, 1979, 1984, 1994, 2000 and 2006 reveals that a very few studies have been conducted to investigate the effect of training in classroom questioning on the teaching competence of teachers trainees, self-concept and attitude towards teaching. The present study is an attempt in this direction.

1.23 STATEMENT OF THE PROBLEM

A STUDY OF THE EFFECT OF TRAINING IN CLASSROOM QUESTIONING BEHAVIOUR OF STUDENT TEACHERS ON TEACHING COMPETENCE, SELF-CONCEPT AND ATTITUDE TOWARDS TEACHING

1.24 OPERATIONAL DEFINITIONS OF TERMS

Definitions of term used in the Classroom Questioning Behaviour Training alongwith respective symbols are given hereunder:

Teacher Behaviour/Activity (TO)

It pertains to student-teachers activity other than Questioning, for example, writing on black-board, reading from the book etc. which would be recorded under this category.

Pupil Behaviour/Activity (PO)

It covers the pupil activity other than response to student-teacher questions like reading from the book, pupil questions etc. which would be recorded under this category.
Question Functions

Functions of the questions asked in the classroom have been divided into two categories namely Management and Substantive business. Management function of Questions refers to the preparation and management of learning environment in the classroom. Attention of the pupils can be ensured through classroom questions.

Substantive business function of the classroom questions implies communication of content. Thus function can be analysed into the simple units like (i) Creating a learning set. The Questions for this purpose attempt to link the pupil’s past experience with the new learning task. (ii) Advancing the learning task-this function may occur at any stage of the lesson. (iii) Planned drill and practice which includes the Questions requiring quick and repeated response. (iv) Reviewing the Progress of learning which refers to the stage in the lesson, where at the end of the unit of the learning task, the progress of the pupils is reviewed. The review questions hold, inreicapitulating, the learning tasks well as they point to some of the difficulties faced by the pupils. (v) Evaluating the learning task-the evaluatin function of the Question corresponds to the final stage of the lesson. This may include some of the questions from development, review and diagnostic stages, but it goes beyond too in the sense that the total teaching-learning strategy is also evaluation in relation to the actual learning outcomes in terms of pupil achievement. Thus, the functions of the classroom questions have been analysed on the basis of the categories discussed above and coded in their respective columns in the observation sheet.

Questioning Structuring
This category covers relevance, precision, grammatical correctness, and clarity of Questions with the following scope and jurisdiction:

(i) Relevance (R+, -): It means the suitability of the Questions to the specific instructional objectives of the lesson and the content being covered. The plus and minus signs indicate the relevant and non-relevant nature of the question respectively.

(ii) Precision (P+, -): Precision in the context of classroom question refers to the length of the question. The length of questions should be appropriate to the purpose and level of the question. A precise question should not contain even a single word more than what is essential. The plus and minus signs respectively indicate the precision and lack of precision.

(iii) Grammatical Correctness (Gr +, -): The minds of the pupils can be baffled and confused by grammatically incorrect questions because such questions fail to communicate their intent and also reduce the fluency of Questioning. Therefore, the Questions put to the pupils should be grammatically correct. The plus sign indicates the grammatically incorrectness of a Question.

(iv) Clarity (C+, -): Clarity refers to the easy comprehension and understanding of the Questions. An effective question should not contain terms which are beyond the understanding and comprehension of the pupils. Proper format and the use of familiar vocabulary give clarity to the questions. Plus sign indicates the clarity and the minus sign indicates the lack of clarity.
Question Level

The level of questions is determined by the level of thinking generated by the Question in the pupils. In this category, the different levels of questions according to the thought process generated by them are identified and recorded. Theory levels of classroom questions used in the present study have been identified as given below:

i) Cognitive-Memory Question (Cm):

Cognitive-memory questions are limited to the lowest level of thinking. Such questions require the pupils to recall a fact, define a term, identify something he observes or give an answer he has learnt by rote memory. The symbol Cm has been taken for recording this level of question.

ii) Convergent Application Questions (Cv):

Putting up of facts together and constructing of answer is exclusive requirement from pupils answering the questions. Convergent questions involve the person in the overt expression of an expected behaviour and occur in highly structured context in which the parameters governing the response are restricted by the situations. It can be evaluated as correct or incorrect by definition, custom or empirical verification. Consequently, as a correct response to the convergent question, a pupil may be expected to perform the operations of explaining, stating relationships, associating and relating or comparing and contrasting. The observer, after analysing it has to write (Cv) in the observation sheet. Thus, a response to a convergent question causes all the facts of it to come towards each other and tend to meet a point to exhibit association or comparison or contract.
iii) **Divergent Application Questions (Dv):**

Divergent application questions are thought provoking. But the answers to these questions are not necessarily predictable. A pupil responding to a divergent question is led to organise elements into new patterns that were not clearly recognised beforehand. The pupil, while responding to a divergent question, is required to perform the operations of predicating, hypothesizing or inferring. Reasonableness and unreasonableness of appropriateness and inappropriateness are the yardsticks for evaluating the divergent questions. The response is recorded by writing Dv only.

iv) **Evaluation Questions (E):**

This is a kind of super level question. These questions require the pupil to organise his knowledge, formulate an opinion, and take a self-selected position. In order to take a judgement, the pupil must use evidence. He makes a judgement of good or bad, right or wrong, according to standards he sets or someone else sets for him. Laconically, evaluating questions require the pupil to judge, value, justify a choice or depended on a position.

**Question Delivery**

The effectiveness of student teacher's questioning utterly depends on the delivery process. Question delivery process includes three components viz. speed, voice, pause which are analysed on the basis of following criterion:

i) **Speed (S+, -):** It is the time taken in speaking out a question to the pupils in accordance with the function and level of thinking
required to answer it. The plus sign indicates appropriateness of the speed and minus sign indicates the lack of it.

ii) Voice \((V+, -)\): Voice refers to two dimensions viz. audibility of question to all pupils in the classroom and intonation according to the emphasis to be laid on specific points in the question. The plus and minus signs indicate appropriateness of voice or lack of it respectively.

iii) Pause \((Ps+, -)\): This is an interval between delivery of the question and the student-teacher’s calling upon a pupil to answer it. The length of the pause corresponds to the level of question. The plus and minus signs indicate appropriateness or otherwise of the pause.

**Question Distribution**

The distribution of classroom questions can be considered on three lines viz. distribution in terms of classroom space, distribution among volunteers and non-volunteers and re-directing the same question to other pupils for increasing and encouraging pupil participation.

i) Space: The first dimension of question distribution is space coverage. Dividing the classroom into four parts would give four quadrants, specified as under:

a) Left Front (L): This quadrant comprises the front rows on the left of the student-teacher.

b) Right Front (R): this quadrant comprises the front on the right of the student-teachers.
c) Left Back (Lb): It comprises the back rows on the left of the student-teacher.

d) Right Back (Rb): It comprises of the back rows on the right of the student-teacher.

ii) Volunteer (V+): Volunteer is the pupil who offers for responding to the question voluntarily by raising of hand.

iii) Non-volunteer (V−): Non-volunteer is the pupil who does not come forward to respond to the question voluntarily and is called by the student teacher to respond.

iv) Re-direction (Rd): It is a device applied to ensure encouragement of pupils and to provide opportunity for their active participation in the teaching-learning process.

Pupil Response

A number of possible responses situations arise at the time when a question is posed in the classroom, namely:

i) No-Response Situation (N): It denotes the failure on the part of the pupils to frame and express verbally a response to the question that they are required to answer. The pupils maintain silence so far as response is concerned.

ii) Wrong Response Situation (W): the response contradictory to criterion response is terms as wrong response.

iii) Incomplete Response (I): Response is given by the pupil but the same is not complete, when judged on the criteria response.
iv) Partially Correct Response (Pr.): The response in which a part only is correct, and the rest may incorrect, is termed as partially correct response.

v) Correct Response ©: The response which completely conforms to the laid down criterion is terms as correct response.

vi) Chorus Response (Ch+,-): The response given by the pupils collectively is termed as chorus response. It is useful for planned drill and practice. But, in other situations, the chorus response come times borders on indiscipline in the classroom. The plus and the minus signs indicate planned drill and indiscipline respectively in the classroom.

**Response Management**

Response management consists of acceptance, rejection, promoting, further information and response structuring. Acceptance is denoted through words like right, correct, yes and even praise words like good, go-on etc. Acceptance is also denoted non-verbally through ‘Nod’, smile etc. Rejection is denoted by ‘No’ or ‘through shaking of head. Promoting refers to providing hints to the pupils to structure his incomplete or partially correct response. It is also used to guide pupils’ thinking to lead to criterion response. Further information provides an opportunity to a pupil to improve upon his earlier response. Response structuring refers to the restatement of pupils correct response in such a manner than it becomes laconic.

**Teaching Competence**

The term teaching is a complex skill and can be defined as a set of observable teacher behaviours that intend to facilitate learning in the pupils. Teaching is comprised of teaching skill, which have specific
instructional objective to be achieved. Therefore, for the purpose of present study, teaching competence is defined as the effective use of various teaching skills intending to facilitate learning in classroom teaching during practice teaching in schools.

The term teaching has been defined in different ways. Competence also has been debatable term. Thus the lack of clarity and agreement about the concept of teaching competence has made its measurement difficult. Of course, the various teacher institutions have their own tools for assessing teaching competence of student teachers, but there has been no agreement and clarity about such tools. The General Teaching Competency Scale constructed by Passi and Lalitha (1979) was used to measure the teaching competence.

**Self-Concept**

There are several items that are virtually synonymous with self-concept, among which are “Self-image”, the “Ego”, “Self-understanding”, “Self-perception” and “Phenomenal Self”.

Self-concept has been referred by lowe (1961) as one’s attitude towards self, and by, Paderson (1965) as an organized configuration of perceptions, beliefs, feelings, attitudes and values which the individual views as a part of characteristics of himself. Rogers (1951) defined self-concept as “an organized configuration of perceptions of the self which are admissible to awareness. It is compared to such elements as the perceptions of one’s characteristics and abilities, the percepts and concepts of the self in relation to others and to the environment, the value qualities which are perceived as associated with experiences and objects, and the goals and ideas which are perceived as having positive or negative valence.”
Saraswat and Gaur (1981) described self-concept as “the individual’s way of looking at himself. It also signifies his way of thinking, feeling and behaving.”

Lynche, norm-Hebeisen and Gergen (1981) have quoted William fitt’s suggestion that attention should be shifted from global measures of the self-concept to configuration of the responses across self-concept dimensions. Such configurational patterns should be merely sensitive to environmental effects.

To measure self-concept, the Self-concept inventory prepared by R.K. Saraswat was used.

**Teaching Attitude**

Himmelfarb and Eagly has defined teaching attitude as to refer to any reports of what people think, feel or of the ways in which they intend to act. In this investigation, the investigator has used the “Teacher Attitude Inventory (TAI)” developed by Dr. S. P. Ahluwalia, because teachers attitudes not only affect his behaviour in the classroom but also influence the behaviour of his students. Moreover the effective and productive learning by pupils can be achieved by employing teachers with desirable attitudes or by shaping their attitude in the desired direction. It is a dependable ‘Multidimensional attitude inventory for measuring attitudes e.g. primary and secondary teachers towards teaching profession and its allied aspects. It is believed that it a worthwhile toll for the training institutions not only for diagnostic and prognostic purposes and practicing teachers through favourable attitudes by changing the organizational climate of their classrooms.

It is Likert type instruments of 90 times sub-divided instruments. These sub-scales were developed by the Likert summated
rating procedure. Each scale has 15 statements pertaining to a particular aspect of prospective and practicing teachers.

The six aspects of attitude towards:

1. Teaching Profession.
2. Classroom and Teaching.
3. Child-Centred Practices
4. Educational Process
5. Pupils
6. Teachers.

### 1.25 OBJECTIVES

The following specific objectives emerged from the statement of the research problem:

1. To study the initial classroom questioning behaviour of student-teachers in respect of the incidence of questions, structural characteristics of questions, question delivery behaviours, question distribution behaviours, and pupils’ response management behaviours of student-teachers.

2. To study at the end of training the classroom questioning behaviour of student teachers in respect of the incidence of questions, structural characteristics of questions and pupil response management behaviours of student-teachers.

3. To study the change in classroom questioning behaviour of student teachers after classroom questioning behaviour training in respect of incidence of questions, structural characteristics of questions, question delivery behaviours,
question distribution behaviours and pupil response management behaviours of student-teachers.

4. To compare the classroom questioning behaviours of student-teachers before and after the classroom questioning behaviours training in respect of incidence of questions, structural characteristics of questions, question delivery behaviours, questions distribution behaviours and pupil response management behaviours of student teachers with student-teachers without such training.

5. To compare the teaching competence of student-teachers with and without classroom questioning behaviour training, before the experimental treatment.

6. To compare the teaching competence of student-teachers with and without classroom questioning behaviour training, after the experimental treatment.

7. To compare self-concept of student-teachers with and without classroom questioning behaviour training, before the experimental treatment.

8. To compare self-concept of student-teachers with and without classroom questioning behaviour training, after the experimental treatment.

9. To compare attitude towards teaching of student-teachers with and without classroom questioning behaviour training, before the experimental treatment.
To compare attitude towards teaching of student-teachers with and without classroom questioning behaviour training, after the experimental treatment.

1.26 HYPOTHESES

In order to realize the objectives of the study, the following hypotheses were formulated for testing:

H1 At the end of the experiment the group of student-teachers with classroom questioning behaviour training tend to have higher level of incidence of classroom questions than those without such training.

H2 The student-teachers undergoing training in classroom questioning behaviour tend to ask more relevant, precise, grammatically correct and clear questions after the training than their counterparts who did not receive such training.

H3 At the end of the training, the student-teachers in the experimental group tend to ask less number of questions at memory level and more questions at convergent application, divergent application and evaluation levels than their counterparts who did not receive such training.

H4 The student-teachers undergoing training in classroom questioning behaviour exhibit more appropriate question delivery behaviours (speed, voice and pause) after training than the student-teachers who did not receive such training.

H5 The student-teachers undergoing training in classroom questioning behaviour tend to exhibit more appropriate classroom questioning distribution behaviours (spacing
volunteers and non-volunteers) after training than the student-teachers who did not receive such training.

H₆ At the end of the training in classroom questioning behaviour there is significant difference between pupil response types (no response, wrong response, incomplete response, partially correct response, correct response and chorus response) under the two groups of student-teachers with and without such training.

H₇ The student-teachers undergoing training in classroom questioning behaviour exhibit more appropriate pupils response management behaviours (acceptance, rejection, prompting, seeking further information and pupils’ response structuring) after the training than the student-teachers who did not receive such training.

H₈ There is no significant different in the teaching competence of the two groups of student-teachers with and without training in classroom questioning behaviour, before the experimental treatment.

H₉ There is no significant different in the teaching competence of the two groups of student-teachers with and without training in classroom questioning behaviour, at the end of the experimental treatment.

H₁₀ There is no significant different in the self-concept of the two groups of student-teachers with and without training in classroom questioning behaviour, before the experimental treatment.
H_{11} \quad \text{There is no significant different in the self-concept of the two groups of student-teachers with and without training in classroom questioning behaviour, at the end of the experimental treatment.}

H_{12} \quad \text{There is no significant different in the attitude towards teaching of the two groups of student-teachers with and without training in classroom questioning behaviour, before the experimental treatment.}

H_{13} \quad \text{There is no significant different in the attitude towards teaching of the two groups of student-teachers with and without training in classroom questioning behaviour, at the end of the experimental treatment.}

1.27 \quad \textbf{DELIMITATIONS OF THE STUDY}

Keeping in view the time and resources available with the researcher, the study was delimited as under:

1. Although there are various teaching strategies, yet the study confined itself to the Classroom Questioning Behaviour Training to student-teachers only.

2. Teaching-Learning can take place both inside and outside the classroom, but the present study confined itself to the classroom teaching-learning.

3. The study could be conducted on a variety of educational outcomes, but it was conducted on three aspects viz. teaching competence, self concept and attitude towards teaching of student teachers.
4. Although the study could be simultaneously conducted on student teachers of various colleges of Education, yet the student teachers of Dayawanti Memorial College of Education, Pada, Gurgaon; Deen Dayal Rastagi College of Education, Khandewla (Gurgaon); Chetanyadev College of Education, Bohra Kalan (Gurgaon); and Lord Krishna College of Education, Jamalpur (Gurgaon) were taken.

5. The effect of Classroom Questioning Behaviour technique could be studied throughout the academic session, but in the present study the effect was observed for four months only.