CHAPTER I

INTRODUCTION

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The concept of teaching has been changing with the
changing social system. The pattern of social system has
certain demands on the individual in that system. From ancient
Rome to modern era, change appears in the methods of teaching
as a response to challenge the demand. With the assumption
to fulfil those demands,related teaching methods have been developed.
The demands from ancient Rome to the modern era are various,
like, preparing youth for political life, for metaphysical
value system, for Dharma, and for preparing clerks and
gentlemen. Every age has its own demands on the societal
system, and education being one of the most useful social
endeavours, can hardly escape from the impacts of the change
process of a particular age and society. It is obvious,
therefore, that educational philosophy, teaching procedures
and practices undergo a radical change to keep pace with the
marching time.

Ours is an age of science and technology - an era of
opportunities in almost all walks of life. The challenge of
this age is to prepare young people for diversity. We have to
prepare our youth for changes which they are going to face.
As Howe (1968) says, 'The greater the pace of change in the
world, more it becomes necessary for us to develop efficiency
in the way our young people learn'. What kind of method of
teaching will do this ? How can we teach them to learn ? To

think about the method of teaching as a response to challenge the new technology we must first be clear about the c:⁻⁻ .o⁵ concept of teaching. Various efforts have been made to define teaching as shown below.

English and English - The Dictionary of Psychological and Psycho-analytical Terms describe teaching as, ' the art of assisting another to learn.' It includes, ' providing information (instruction) and of appropriate situations, conditions or activities designed to facilitate learning'. The World Book Encyclopaedia describes it as, 'the process by which one person helps others achieve knowledge, skills and aptitudes'. Gage (1963) defined teaching as 'an act of interpersonal influence aimed at changing the ways in which other persons can or will behave'. Elsewhere teacher behaviour is defined as the behaviour, or activities,or persons as they go about doing whatever is required of teachers, particularly those activities which are concerned with the guidance or direction of the learning of others. Skinner (1968) defines teaching as, 'the arrangement of contingencies of reinforcement'. According to Mitra (1971) teaching is, 'a series of acts carried out by a teacher and guided by the formulation of teaching task in a formulised instructional situation'. These definitions show that teaching is generally considered in three different ways :

(i)   Imparting knowledge or skill

(ii)   Doing anything and everything that may lead to
       learning

(iii) A social act of influence.

Teaching in this sense, is not an isolated activity
performed by the teacher alone, but it consists of systematic
process to reach the students by inducing them to learn. This
represents the comprehensive picture of teaching - learning
process, wherein a teacher, a student, and teaching techniques
seem to be interrelated to one another. It starts with the
teacher's action and ends with the student's behaviour as a
result of the systematic action. It is therefore, very aptly
said that teaching is a system of action intended to induce
learning.

Thus, the concept of teaching as described here, suggests
that if we want to think about the method of teaching suitable
to meet the demands of the new technology, we should re-examine
the role of the teacher, role of the student, and the nature
of the learning process. The hint here is to give away the
traditional notion of teaching where a teacher could teach
anything taking little care of the learners' needs and interests.
As such both the teacher and her behaviour in the classroom
have now become accountable. Teaching is looked upon more as a
science. If teaching is regarded as a science then it should
be possible to produce a particular set of behaviours again and

again. Therefore, the set of teaching behaviours has to be pre-planned and designed with a view to acquiring various desirable learning behaviours of the students. This is because, during the learning process, the learner constantly interacts with the environment which results into the modification of behaviour. This means that the learner does various activities on getting stimulus and these activities, for example, seeking, perceiving, remembering past experience etc. enable him to respond to the given stimulus in a given learning situation. If the right type of environment or learning situation is provided, the learner is able to respond correctly and promptly. Correct response leads him to the attainment of his goal. The environmental control and use of not one but a variety of teaching techniques are, therefore, of utmost importance to mould the learners' behaviours in the desired direction and also to attain the instructional objectives.

This view of teaching stands in contradiction to that of others who would like to consider it as an art. But, if one examines, the process of learning an art, one finds that there are clear cut techniques to be mastered. This only shows that even if teaching is considered as an art, one finds that there are techniques which have scientific basis of development. Therefore, teaching, even if apparently an art, is really science by nature. Hence, one cannot do away with mastering these techniques of teaching,

if one is to be an effective teacher. The same idea is
expressed by Medlay and Mitzal (1963) who say, 'without
definite knowledge of the nature of effective teaching it is
impossible either to identify and recruit those young born
with this talent or to make successful teachers out of young
people born without it'. To decide whether the present
teaching methods need any change, it is worthwhile to have a
look into our present instruction process.

1.1 The Present Instructional Process

The scientific concept of teaching takes into account
the behaviours of teachers and students in the classroom, and
stresses the achievement of various objectives in behavioural
outcomes through various suitable techniques. Looking into
our present classroom instruction at the school level, it is
realized that most of the time students remain passive listeners
where the teacher remains active, pouring information without
thinking about students' capacity to accept it. At the college
level too, instruction is mostly confined to lecture method,
which has hardly any scope for behaviours' accountability.
Perhaps, this may be due to the fact that most of the teachers
teach in the class without taking care of the various objectives
of teaching and learners' needs except to provide information,
for the main objective of preparing them for examination. If
we present the picture of our classroom, the need of completely

different approach may be realized. In a class, there are
students of various abilities and needs. Some students need
more concrete illustrations and explanations than others.
Some students learn quite well through independent study
while others need highly structured learning situations. Some
need more reinforcement than others. Some need to have several
repetitions of the explanation while others may be able to
get at the first time. But the ideas like pupil - participation,
pupil-teacher interaction, providing individual learning
experiences, feedback and reinforcement have very little scope
in our present instructional process, and possibility of
judging its effectiveness is still less.

On one side, there is a practice to confine most of the
teaching to lecture method, on the other side, the advancement
of science and technology poses challenge to the process of
education to change every individual to be capable to stand in
the competitive world. The introduction of science and technology
in various fields of life including education demands higher
abilities to deal with situations. Through education students
should develop abilities to understand other disciplines, to
develop self-study habits, to feel confident of studying subject
of their own and develop higher mental abilities like analysis
and synthesis. In short, they should apply their knowledge
beyond formal education to deal with practical situations of
life.

This necessitates that instructional process should meet
the various challenges of technological advancement. But, at
the same time, we should not forget that our classrooms consist
of 50 to 60 students, and at the college level, the strength
is even more, having students of various abilities and needs.
To confine teaching to lecture method or any single method,
however effective, is not sufficient to achieve various
objectives of teaching, and may not be suitable to accommodate
the individual differences. We must think about the target
oriented learning process. The awareness of the needs to achieve
the target could direct the instructional process to include
various teaching methods such as discussion, seminar, practical
work and auto-instructional devices. Some enthusiastic teachers
do use these methods in their teaching. But the difficulty is
that they use them in isolation, and therefore, have restricted
scope of achieving various objectives at a time. The different
techniques should be selected and integrated in such a fashion
that maximum effectiveness of each of them can be achieved. The
basic task for our instructional process is to find strategies
which will take individual differences into consideration and
will do this in such a way as to promote the fullest development
of individual which will result in learning strategy for
reaching mastery level. If we are to provide successful and
satisfying learning experiences to bridge the gap of individual
differences, major changes must take place in the attitude of

students, teachers as well as in teaching strategies and the role of evaluation.

In recent years, based on the principles of educational technology, certain techniques have just started to enter into the classroom situations. But, such efforts are scattered and of initial nature. It seems that our teachers are lacking in the effective utilization of behavioural sciences in the instructional process. Such utilization needs fresh and broad outlook of teachers towards the instructional process. According to the Skinner (1954), 'There is a simple job to be done. The task can be stated in concrete terms. The necessary techniques are known. Nothing stands in the way but cultural inertia'.

1.2 Need for Change

The foregoing discussion suggests that our present instructional process needs to be changed to meet the demands of new technology. In this connection, Cleaves (1966) suggests that, ' with increased pressure on classroom teachers from all sources, the rapid obsolescence of much printed material, the vast quality of new information acquiring daily, and the need for more and faster-learning, traditional classroom procedures are no longer sufficient. More effective instruction and more effective communication between teacher and learner are necessary'. He further expresses that, ' the time has come now to apply everything known about communication and learning

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* Op.Cit., Skinner, B.F., p.112.

to the problem of instruction'. The change in the instructional process should be viewed in terms of exploding population, the exponential rate of increase in new knowledge being created and the effects on our society of rapid technological change. Looking to our needs and the possibilities, that the development of new teaching devices and practices, could bring in the instructional process, we could hope for such an instructional process which might provide scope for :

    (i) Objective-based learning
   (ii) Maximum students' participation
  (iii) Planning for the individual differences
   (iv) Integration of different techniques and media for their effective use.
    (v) Self-sufficient learning and development of self-study habit.

For such an instructional process, the teacher has to, (a) communicate with students having varied mental ability, (b) develop instructional materials, (c) assess readiness for instruction, (d) demonstrate skills, (e) provide feedback, reinforcement and motivation, (f) conduct discussion to develop reasoning ability, (g) equip students with advanced literature in related subjects.

No single medium is likely to be best employed to perform all these various functions. An arrangement involving combinations of media may hold as key to such effective instruction. Therefore, to respond to the challenge of the time, an effective instructional

process is needed which should involve various methods as components and organize them in accordance with their specific function to achieve general as well as specific objectives formulated before.

This is a shift from the traditional notion of mere teaching to teaching-learning process, where a learner is considered as a dynamic organism actively involved in the teaching-learning process. Teaching, in this sense, is considered to be a science in which a teacher's role is not always indispensable. There are learning situations where the presence of a teacher is not a 'must'. Lumsdaine and Glaser (1963) support this view when they write, 'The traditional belief that teaching is primarily an art and that a gifted teacher has to be born gives way to the conviction that teaching consists of techniques and procedures which can be made communicable or teachable'. It is held that performance can be improved if instruction is designed on systems lines rather than on conventional lines. Stolurow (1964) holds that it is much better to master the teaching model thant to model a master teacher. To quote Skinner (1968)[*] , again ' a learner's behaviour can be shaped and maintained in strength if the learning environment is properly manipulated and contingencies of reinforcement are properly arranged'. The views of different personalities convey one and the same thing. The emphasis is on enriching the instructional process by shaping the learners' behaviours. The efforts made by eminent psychologist like Thorndike

[*]Ibid., p.64.

through his laws of learning and by Skinner through the
application of principle of reinforcement in learning were
also aimed at the enhancement of learning. Their experimenta-
tion has provided the theoretical background of effective
learning process and have also proved certain techniques
like programmed learning effective. With this background it
could be possible to enrich the instructional process. But
at times, lack of synthesis of the theoretical knowledge
with the practical situations is found in our teaching
procedures. Therefore, it is necessary to practise those
theoretically proved laws and principles of learning in the
practical situations of classroom instruction. The laws and
principles experimentally proved effective can provide the
definite base for the enhancement of learning. This is to apply
the science of learning and communication to teaching which
would result in the technology of instruction. So, for the
effective instructional process teaching alone is not sufficient;
what is needed is a teaching technology.

1.3 Instructional Technology for the Systematization
of Instructional Process - Use of PLM in Teaching

This necessitates to bring into the classroom an instructional
technology which is based on the application of principles of
physical sciences and behavioural sciences in the instructional
process. Application of the principles of physical sciences has

provided various equipments such as radio,television, films, slides etc., Similarly, behavioural sciences have certain principles about human behaviour, application of which has provided instructional techniques such as programmed learning, team-teaching, practical work and the like. In the instructional process both, equipments based on principles of physical sciences and instructional techniques evolved from principles of behavioural sciences can be used for the effective and efficient realization of pre-determined objectives. The purpose of instructional technology would, therefore, be to improve the effectiveness of teaching - learning process utilizing the scientific principles. Now a days, experiments to apply the principles of instructional technology in the actual classroom are in process. But such experiments are very few to derive any conclusion or structure for effective instruction. It is, therefore, necessary to undertake scientific investigation to establish the effectiveness of the prevailing techniques of teaching and for exploring the new and effective techniques to facilitate learning. Thus, the variety of experiments in actual classroom situations at various levels are needed to systematise the instructional process through proper integration of various methods or techniques which may result in a sound teaching technology. The enriched instructional process will work more scientifically for better gains on the part of the learners, which, ultimately, is the goal of education.

Perhaps, when we think of the learners' gains and their maximum involvement in the teaching-learning process, it becomes quite evident that the role of the teacher would not remain the same - an authoritarian, imposing and a tradition-bound teacher. Obviously, since learning is kept in the focus, the teacher's physical presence may not be a 'must' in a classroom now. She may guide, supervise and help where the situations demand, but teaching becomes automated where the learner learns in the absence of a teacher in a classroom. This is known as auto-instruction, where teaching material is programmed and presented in a logical and sequential order in a set of small bits to the learners. The idea of programmed instruction is as old as Socretes but its importance and use in a classroom situation can never be denied.

Studies reveal the use of Programmed Learning Material at school and college level with a greater benefit for the learners as against the teacher-taught groups. The benefits of PLM over traditional instructional process may be mentioned as under :

(i) Learning is adopted to individual differences.

(ii) Learning is directed towards specific objectives.

(iii) Learning is self sufficient and self-paced.

(iv) Learning is accountable.

According to Lumsdaine (1964) 'The programme tries to see to it that the student does learn and it takes the blame for the student's failure'. PLM is, therefore, an important technique

to be utilized for systematising instructional process, and its
enrichment, too. But, it has also been revealed that PLM alone
cannot achieve all the instructional objectives for a particular
course. Hence, the need for supplementing it with other more
suitable components. sot that they all work in an integrated
fashion to yield better instructional gains.

Like PLM there are other effective techniques such as
discussion, seminar, problem solving, practical work etc. To
ensure their effectiveness in the instructional process, the
need is to select them., for suitable specific objectives and
to integrate them to achieve a combined goal. The pre-requisite
for the selection of suitable components is that, the teacher
should identify the objectives of the course$_\wedge$ and analyze them into
behavioural outcomes. Accordingly, different components should
be selected and their effectiveness should be established in
terms of objectives identified. After establishing the effectiveness
of each selected component., integration of those components
can be made possible. Thus, in the effective instructional
process, different components should contribute as a part and
parcel of the whole instructional process, like a chain in which
if one component becomes weak or fails, the whole chain will
be disturbed. This would ultimately lead to the identification
and development of strategy. Therefore, it can be said that for
systematisation and enrichment of our instructional process

attempts to develop strategies should be undertaken at different levels.

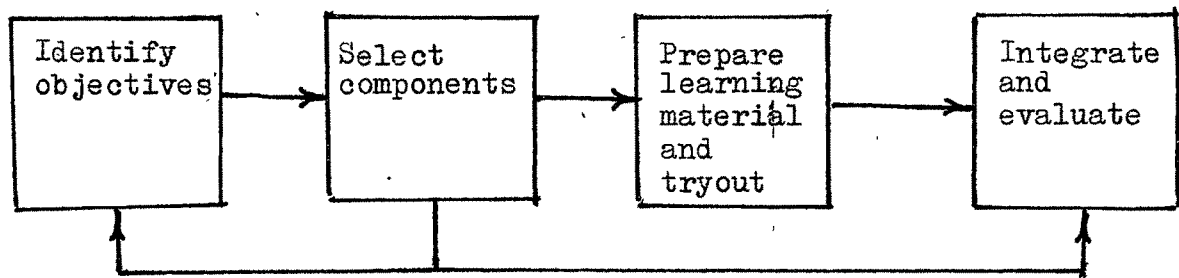## 1.4 Developing a Teaching Strategy

As teaching and instruction are considered as synonymous terms, and most of the formal teaching is imparted in the class-room, to understand the process of the development of strategy, focus should be made on the classroom instructional process.

It is known to all those who are engaged in teaching that the aim of classroom instruction is to attain desired objectives. Therefore, the effectiveness of instructional process can be judged by the extent to which the desired objectives are achieved. The instructional objectives are of various types like imparting knowledge, development of applicational abilities, critical thinking, development of certain skills, interest , attitudes, aptitudes etc., the various learning experiences in the form of various methods for different conditions should be so organised that they can facilitate the teacher to achieve the specific objectives. So, an instructional process should not depend only on one method but should select different methods as components and organize them in accordance with their specific functions to achieve the specific objectives. To collect empirical evidences for the effectiveness of each individual component, learning materials for different components should be prepared and tried

out in real classroom situations. If any aspect of instructional
material fails to attain objectives upto the expected level the
whole process should be reviewed and instructional materials
should be revised on the basis of students' achievement. Such a
process of specifying objectives clearly, selecting different
component methods and developing and trying out learning materials
and revising, can result into an effective process of instruction.
Such organization of instructional process can direct itself
towards the integration of suitable components which can form an
instructional strategy.

So, to develop an instructional strategy four steps are
necessary. The first requirement is to specify the instructional
objectives clearly. The next step is to select the different
components and to prepare learning materials. At this stage the
selection of different components should depend mainly upon
instructional objectives, expected learning outcomes and learners'
characteristics. The third step is that learning materials of
each individual component should be tried out in the real class-
room situation to collect empirical evidences about its effective-
ness. The fourth step is to integrate the suitable components
forming the instructional strategy and, finally, to study the
effectiveness of different components separately as well as that
of the strategy as a whole in terms of realization of specific
objectives.

The following diagram represents the four steps of strategy :

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┌─────────────┐      ┌─────────────┐      ┌─────────────┐      ┌─────────────┐
│ Identify    │      │ Select      │      │ Prepare     │      │ Integrate   │
│ objectives  │─────▶│ components  │─────▶│ learning    │─────▶│ and         │
│             │      │             │      │ material    │      │ evaluate    │
│             │      │             │      │ and         │      │             │
│             │      │             │      │ tryout      │      │             │
└─────────────┘      └─────────────┘      └─────────────┘      └─────────────┘
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Process of Development of Strategy

Thus, a strategy refers to the selection and integration

of different components in relation to their specific functions

to achieve the specific objectives as well as the combined goal.

It includes the selection of suitable subject-matter and the

general organization of subject-matter for instruction. Smith

and Meux (1967) refer to strategy, 'as a pattern of acts that

serve to attain certain outcomes and to guard against certain

others.' Taba (1969) thinks that it is useless to study teaching

in general as a global process serving all objectives of

education. Rather, she holds, it seems necessary to identify the

particular teaching strategies required by particular types of

learning goals, such as, generating certain cognitive operations,

stimulating certain types of enquiry, and integrating certain bits

of information into larger concepts. These strategies must be

composed in the light of a theoretical framework in which appropriate

dimensions of teaching-learning situations are covered. Taba's

teaching strategies consist of a series of sequential sub-units
like focussing, extending thought on the same plane, lifting
thought to a higher plane, and controlling thought. Gerhard
(1971) does not define strategy very precisely, but holds the
opinion that traditionally, 'teaching strategies have been
classified as a series of methods ranging from lecture, discussion
and recitation to the multi-method, the project, the self-
discovery, and the self-selection approach. Provided with these
methods, how do we use them to promote process and how do they
fit within the behavioural approach ?'

The process of the development of strategy seems to follow
the scientific nature of teaching, where, careful statement of
the goal of teaching, programming of teaching behaviours for
goal attainment and checking of goal attainment are essential.
This may lead one to believe that the process of the development
of strategy is scientific and has potentiality to systematise
the instructional process. It would be ideal if such studies
could be undertaken. at all levels to bring the complete
change in the instructional process, so that the attainment of
mastery level learning may not remain a distant dream for ever.
The practical difficulties, however, may not allow to reach
the ideal situation. The solution is to start with where
such strategies could be developed effectively and have wider
scope for practical use. In this context some considerations

have been presented here to develop the strategy at B.Ed.

level.

1.5 Instructional Strategy for Teaching 'Educational Evaluation' to B.Ed. Students

The instructional techniques like programmed learning, library reading, discussion, practical work, assignments, etc., emphasize the elements of self-learning. These techniques of self-learning need on the part of the students good language comprehension ability and higher abilities like application, analysis and synthesis. The students of B.Ed. class are mature enough in respect of language comprehension and are self-sufficient also. In addition to this, the systematisation of instructional process could be said to be complete when instruction provided through the integration of different technique could be proved effective at the evaluation through its various available techniques. It is quite obvious that the teachers practising effective instructional techniques, should have the knowledge about the procedure of evaluation, its various tools, techniques and their suitable application. Thus, the teaching and evaluation are like two sides of a coin, improvement in one necessitates the improvement in the other.

Realising the importance of the knowledge and training for evaluation procedure, University Grant Commission has supported willing universities for setting up examination research and reform units. The

These units organize workshops to orient college teachers of various disciplines about the application of evaluation procedure in planning of their syllabus and instructional work. Over and above the orientation, the investigator feels that, if those teachers are provided with the instructional material containing conceptual and theoretical knowledge of educational evaluation about which they could read and understand on their own, it would be possible to carry out evaluation work very effectively. The distinct feature of the teachers' training colleges is that, Educational Evaluation has been introduced as a compulsory course in the B.Ed. syllabus. It is expected that the teachers trained in the subject at the B.Ed. level will be able to apply their knowledge about various skills and techniques more fruitfully in the effective evaluation of instructional work. In this sense also, to undertake the investigation for the development of strategy to teach Educational Evaluation at the colleges of education will be more suitable. Therefore, no other place could be more suitable to adopt innovation in instruction than a college of education, as the initial efforts of researches. It could reach indirectly the various schools, the real place for the dissemination of the work done.

1.6 Significance of the Study

The investigator herself being a teacher in the department of education, Mahila Mahavidyalaya, Baroda, affiliated to

S.N.D.T. Women's University, Bombay, while teaching the
subject Educational Evaluation found that, it was difficult for
the student-teachers to grasp certain new and technical
concepts. The subject requires more applicational ability and
students are, by and large, found lacking in it. Moreover,
in comparison to other subjects, students have to devote more
time to prepare the subject and yet, their performance at the
end of the year, is found far. from satisfactory. Hence, the
need for teaching 'Educational Evaluation' more systematically.

'Need' it is said 'is the mother of invention'. This is
true for a teacher-researcher who always tries to explore the
possibilities of making the teaching-learning process more
paying in terms of pupil achievement. While teaching the course
on 'Educational Evaluation' for the last five years, the
investigator tried to make the goods to be delivered as
palatable as possible and, yet, it was felt all throughout
these years that much needs to be done in the instructional
process. A few pertinent questions, coming as a result of self-
appraisal, may be mentioned as follows :

- Is there something wrong with the syllabus itself ?

- Are there no books and references available on the
  subject for the teacher and the students ?

- Does the method of teaching the subject take care of the
  'learners' needs, interests and aspirations ?

- Can there be a better way of presentation of content matter ?

After pondering a great deal on the points mentioned above, the investigator found that, neither the syllabus, nor the availability of textbooks could come in the way of good teacher. It was precisely, at the teaching level that a need was felt to improve the teaching technique, so that the learners, too, can maximally participate in the class-room activities and know where they stand at a particular point. Moreover, the need to enable the students ultimately to stand on their own feet through self-learning devices should also be satisfied to a great extent.

Thus, with an eye right on the instructional objectives to be attained and also on the psychological needs of the learners, it was felt that a study can be taken up to explore and to try the possibility of developing a strategy for teaching 'Educational Evaluation' to B.Ed. students of the Mahila Maha-vidyalaya, Baroda, affiliated to S.N.D.T. Women's University, Bombay. Its significance lies in the fact that it has emerged out of the felt need for the course, and besides, if worked out appropriately and effectively, may bring in handsome instructional gains which ultimately would enrich and upgrade the educational standards in general and the instructional process in particular.

Educational Evaluation has immense importance and wide

utility at all levels of education in general and has been

given special place in the syllabus of B.Ed. in particular.

It may be specifically expected that teachers trained at the

B.Ed. level should be able to formulate objectives and to

plan objective based teaching.This is possible if a variety

of learning experiences are provided by them to achieve the

instructional objectives in toto. Moreover, the significance

of the study lies in the fact that the teachers under training

while undergoing the treatment of the strategy may gather the

information about the different techniques, procedures, tools

of evaluation, their specific uses, and also the type of

questions - evaluation items - to be prepared for testing

purpose. Their exposition to PLM perhaps, may be, more

beneficial to them since the basic concepts about the evaluation

process are made clearer to enlighten them. The strategy as a

whole, thus, can kill number of birds with one stone only.

In order to know if there have been attempts on similar

lines for developing teaching strategies in India and elsewhere

it was decided to go through the research literature and past

studies related to the present one. The next chapter gives a

description of such studies in the related areas.

CHAPTER I

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