CHAPTER II

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2.1 INTRODUCTION

It is the survey of literature which forms the first step in the selection of the research problem. The survey of work done previously is helpful in identifying the areas of research in any particular field, in helping to select the particular area of study and finally to decide on the different variables that can be selected for the purpose of the study. It also helps in assessing and evaluating the results.

A study of the related literature in Education showed that when we want to study any educational problem, then the first point of consideration is the teacher. The subject for this study naturally, was the teacher. In view of the secondary level education being the most problematic, the higher secondary teachers were selected for this study.

"An essential aspect of a research project is the review of related literature .... the survey of the literature is a crucial aspect of the planning of the study and the time spent in such a survey invariably is a wise investment."(1)

Dr. M.B. Buch(2) in the overview written in his collection of Ph.D. work writes about research on teachers in the following words:

"Although educational research at Ph.D. level started in early 40's, rapid growth is witnessed during the last two decades. Upto 1950 two universities viz. Bombay and Lucknow together produced nine Ph.D.s"(2)
2.2 RESEARCH IN EDUCATION

Educational research at Ph.D. level started expanding with more and more universities providing such facilities. After 1950 the coverage of topics for Ph.D. has considerably expanded and researchers have taken increasingly greater interest in taking up research problems that are psychological in nature.

Table 2.1 : Trends in Educational Research

<table>
<thead>
<tr>
<th>Areas</th>
<th>Teaching and Teacher Behaviour</th>
<th>Teacher Education</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years</strong></td>
<td><strong>A : Ph.D. Studies</strong></td>
<td></td>
</tr>
<tr>
<td>Upto 1950</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1951-1955</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>1956-1960</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1961-1965</td>
<td>2</td>
<td>4</td>
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<td>1966-1970</td>
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<td>12</td>
</tr>
<tr>
<td>1971-1972</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>14 (0.47)</td>
<td>23 (6.7)</td>
</tr>
</tbody>
</table>

* Figures in brackets are percentages.

<table>
<thead>
<tr>
<th>Areas</th>
<th><strong>B : Non-Ph.D. Research Projects</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto 1950</td>
<td>-</td>
</tr>
<tr>
<td>1951-1955</td>
<td>-</td>
</tr>
<tr>
<td>1956-1961</td>
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<td>1</td>
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<tr>
<td>1966-1970</td>
<td>2</td>
</tr>
<tr>
<td>1971-72</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4 (1.5)</td>
</tr>
</tbody>
</table>

19 (7.1)
2.3 TRENDS IN RESEARCH (EDUCATION)

The actual place that teaching and teacher behaviour occupies in the total education process is not reflected in the amount of research produced in the area. Jangira and Sharma (3) after reviewing the researches came to the conclusion that it has been a comparatively neglected area of Educational research.

Lalla and Singh (4) reviewed twenty seven doctoral studies and reports of nineteen research projects completed in India so far in the field of Teacher Education. The studies have been classified by them as (a) Selection criteria, abilities and qualities of teachers, (b) Preservice and interservice training of teachers, (c) work load, job expectations and difficulties experienced by teachers, (d) procedures and policies of teacher education in India and (e) Personality variables of teachers.

It is felt from the review of these studies that the themes have often been repeated by some investigators on different samples and in different geographical areas. Most of the studies are descriptive in approach using historical development, survey through questionnaire and interview techniques. There is no study which covers the whole country in any single aspect of Teacher Education. From the report it is clear that several areas remain unexplored by researchers in the field.
The first authoritative review of research in education has been done by a committee appointed by the University Grants Commission in 1966(5). The Committee members have expressed that not only research in education was of a poor quality but it neglected many important fields.

2.4 CONTRIBUTION OF RELATED LITERATURE SURVEY

The survey of related literature is the first step in any research work. A survey of the related literature was helpful in firstly deciding the area of research. The educational setup has three major concerns - the pupil, the teacher and the curriculum. The decision to choose the Higher Secondary teachers of both sexes and the two main faculties of arts and science was the result of the study of the work already done in the field. The selection of the variables also is the result of analysing and identifying the importance of the different characteristics associated with the teacher in relation to the performance of the teaching activity.

As a result of the study of related literature the variables chosen for study were teaching aptitude, teaching efficiency and experience. Teaching aptitude is the inherent quality in the teacher, teaching efficiency is a necessary achievement and experience is related to the existing variations of groups.
After selection of variables the first step in research is to clarify the concepts involved in the research work and to assess the relevance of the topic.

2.5 EFFICIENCY

Scientific studies of all human activities have shown that the very essence of human existence is progress. Life, if not active, is death. Life is a continuous process. Another aspect of human life is that it is always aimful and the aims are for improvement in as many areas as possible. In simple words we can say that all endeavours of mankind are oriented towards efficiency. Efficiency can be understood as the quality in the performance of a task which improves the quality of the results achieved by that task. We try new techniques, new methods, new approaches so that the goals achieved are better.

Efficiency - 1. Ratio of energy expended to work done in a mechanism, 2. Minimum time or energy expended for maximum accomplishment 3. (Signal detection theory) the square of the ratio of the empirically detectability index for the ideal.............theoretically maximum performance (6)

\[ \eta = \frac{(d_{observed})^2}{(d_{ideal})} \]

The quality of this efficiency is of course different for each type of activity. The efficiency related to the teaching profession is called Teaching Efficiency. Teaching Efficiency can be understood to be the success of the teacher
in imparting a certain desired amount of knowledge to the pupils. The next question that arises is what are the connotation of teaching efficiency. Actually the teaching process involves the impact of the teacher on the pupils. Hence, in essence teacher efficiency can be estimated as teacher effectiveness.

"The evaluation of the professional staff in a school district is often one of the most difficult projects that an administrator or supervisor faces in the course of his duties. Nonetheless it is vital that teachers on a staff are aware of their competency and of the areas of their work that requires attention if they are to reach a level of performance that is acceptable to the school district". (7)

The above statement shows that competency measures are necessary not only from the point of view of the administration but it is also important for the teacher. Competency is one of the factors for efficiency and effectiveness.

"The importance of educators of being able to recognise teacher effectiveness has long been acknowledged, in fact, this was one of the first problems ever to be studied by educational researchers. As a result, research in teacher effectiveness has been going on for almost a century...... This article will be concerned primarily with the logical problems - with elucidating what the term "Teacher Effectiveness" means and how its meaning relates to that of related terms such as "Teacher Competence" and "Teacher Performance" from which "Teacher Effectiveness" is sometimes inferred. (8)
"The term "Teacher Effectiveness" will be used to refer to the results a teacher gets or to the amount of progress the pupils make towards some specified goal of education. One implication of this definition is that teacher effectiveness must be defined, or can only be assessed in terms of behaviour of pupils, not behaviour of teachers. For this reason, and because the amount that the pupils learn is strongly affected by factors not under the teacher's control, teacher effectiveness will be regarded not as a stable characteristic of the teacher as an individual but as a product of the interaction between certain teacher characteristics and other factors that vary according to the situation in which the teacher works". (8)

The first recorded study of Teacher effectiveness (Kratz 1896), one of the earliest pieces of educational research to appear, set a design precedent that was to be followed for many years. These researches identified the presence of 25 characteristics in a teacher which were essential for effective teaching. The structure for teacher effectiveness, as given by Mitzel has been given in Appendix IIIA. He has also pointed out which of these are developed by training and which are inherent.

The review of related literature in the field of teacher efficiency has revealed that the work that has been done so far is mostly related to the construction of tests
for measurement of efficiency. Jayamma(9), Prasad(10), Sharma(11), Bannerjee(12), Mehta(13), Joshi(14) and Upadhyay(15) have studied efficiency for the primary level. The concentration has been towards construction of tests for efficiency and standardising it.

Deva(16), Jangira(17), Kulandaival(18), Manual(19), Mehta(20), Roy(21), Suraj(22), and Thakkar(23) have studied efficiency as a predictor for teacher trainees, success of teacher training programmes, effectiveness in relation to rapport with students, job satisfaction and relationship with students etc.

Debnath(24), Samantha Roy(25), Anand(26), Bhattacharya and Shah(27), Kaul(28), Arora(29), Balchandran(30), Sinha(31), Sohoni and others(32) and Srivastava(33) have studied efficiency of secondary school teachers. Debnath, Bhattacharya and Shah, Arora, Balchandran have constructed tests for measurement of efficiency while Sinha has studied the impact of Education Programmes on the professional efficiency of teachers. Kaul has studied efficiency as one of the factors of personality variables of a special group of teachers (popular). Samantha Roy, Anand and Srivastava have studied efficiency in relation to attitude, projective techniques and frustration respectively. So far no one has considered the relationship of efficiency with aptitude or faculty or sex.
One aspect 'competency' of effectiveness has been studied by CI I L, Mathew, Passi and Sharma, George and Joseph, Patel, Tareen, Agarwal, Paikaraj, Tareen, Agarwal, and Tareen. They have all studied teaching competence at primary and secondary levels. CI I L, Mathew, and Agarwal have constructed tests. Mathew has studied competence in relation to classroom behaviour. George and Joseph, Anand, Patel, Paikaraj have studied teaching competence in relation to micro-teaching.

All these studies show one particular approach in studying teaching efficiency. More importance is given to it as a predictor and the impact of various factors such as attitude etc. have been given recognition. But no work has been done to study even the efficiency of teachers settled in their service for a long period of time.

The above list shows that work in the area of teaching efficiency are very few. Considering that most of our in-service and other training programmes are all oriented toward improving the teaching efficacy, this area has not attracted sufficient attention in the field of research. In fact, a study of the efficiency of teachers is one of the best means to identify the shortcomings of a teacher. Measuring the predictable effectiveness of future teachers is only a safeguard for the future. But the present problem is to improve the efficiency of the teachers already in the profession.
Study of international work has also revealed a lack of analysis in this study of efficiency. In fact, in foreign countries efficiency is a foregone conclusion because the very process of selection of teachers and their training programmes are specially organised so that a high level of efficiency is assured. The selection of the teacher trainees and the allocation of teaching responsibilities are all done after an assessment of the personality and study of the quality of ability of the teacher. The whole system is setup so that any drop in efficiency is immediately evident and measures to rectify it are taken without unnecessary loss of time or red tapeism. The defects of our secondary education point out a glaring lack of efficiency. Hence this study is an attempt to find out if the lack is due to some quality not in the teacher or in the system of organisation.

2.6 APTITUDE

Aptitude has been described as follows\(^{(43)}\):

"An aptitude may be defined as a person's capacity or hypothetical potential for acquisition of a certain more or less well defined pattern of behaviour in the performance of a task with respect to which the individual has had little or no previous training".

In the Dictionary of Behavioural Sciences, Aptitude has been defined as\(^{(44)}\)
"Aptitude: Capacity or potential ability to perform an as yet unlearned task skill or act."

"Aptitude, as a construct refers to psychological characteristics of individuals that predisposes and thus predict differences in later learning under specified instructional conditions." (45)

"Aptitudes may be defined as the potential to master a specific series of skills." (46)

The above definitions show that one of the qualities needed for any activity is aptitude. If we want any work to be performed efficiently then there should be an aptitude for that task in the performer. So we can conclude that for Teaching, Efficiency the presence of Teaching Aptitude is helpful, and essential. A measure of the teaching aptitude can throw light on the inherent deficiencies of the teacher. We have been changing the norms and patterns of selections of teachers and teacher trainees. But it is only since the last couple of years that aptitude test has been included in the selection of candidates for teacher training programmes. The newer generation of teachers are sure of having a better chance of being efficient teachers due to previous aptitude testing. At the same time the teachers who have not been selected on the basis of their aptitude have to be evaluated on this factor. Examining the aptitude of the teachers already working will be helpful in understanding the quality of teachers in service. A measure of their aptitude can tell us where the shortcomings
are. We can know whether the deficiency is due to their lack of aptitude or some other reason. Practice also removes a lot of deficiencies. So we can assume that by giving sufficient training we can remove, in part, at least the lack of aptitude in achieving desired efficiency. A measure of the aptitude is also helpful in identifying the proper field of work of the teacher. It can tell us whether the type of work allotted to the teacher is suitable to his abilities or not. Attention to this aspect of teaching has been lacking in research work. Only a few researches have been done so far in this field.

Pandey (47), Pandya (48), Shah (49), Sharma (50), Sherry and Patel (51), have all constructed instruments for measuring aptitude. In fact the study of aptitude either as a predictor or as a characteristic for identifying the lacunae in the teachers has drawn no attention in research. May be it has been accepted that aptitude is one of the factors for efficiency, effectiveness and competency. Considering the importance that is given to teaching aptitude in the selection of teachers it seems logical to study the relationship between efficiency and aptitude.
2.7 EXPERIENCE

"Experience is the period for which a person has been carrying out the particular task, i.e., the number of days months etc. during which the person has been involved in the performance of that task or similar tasks."(52)

Experience is one of the factors which is effective in the manner in which a task is performed. Repetition of a task gives a certain amount of practice which is helpful in improving the manner of its performance. In fact, experience is the preface to habit formation. Experience is that process by which a person in repeating a task is first able to identify the deficiencies in the performance of the work. Then it helps in improving the manner of performance of the task by practice. Since efficiency is related to the way an activity is conducted, it is clear that it is also related to experience. In short we can say that a person with more experience will be more efficient than one with less experience. But in actual practice this has not always been found to be true. The reason behind this lies in the attitude of the person towards the task being performed. If there is interest in the performer in the task, then with experience we can expect an improvement in the quality of performance. But if there is lack of interest in the task, then boredom and finally carelessness in its performance can result. Also an unvaried repetition of a task can create a dislike towards the task and reduce the enthusiasm necessary for good performance. Thus experience can be both an asset and
Jogelkar (53), Gupta (54), Mani and Gonsalves (55), Mann (56), Saraswat (57) and Satpathy (58) have considered experience in their work. Jogelkar, Gupta, Mann and Saraswat did not find experience significant in the performance of teachers. Mani and Gonsalves, on the other hand, found better self concept and relations with students with experience. In fact, a longitudinal study can give the correct relationship of experience with the teachers' performance. But a study of teachers of different periods of experience can give firstly a clue to the place where remedial measures are to be instituted. Then it can also tell us whether our conditions are congenial for the teachers' work, correlating the training programmes and manner of selection of the various experience groups of teachers it is possible to get an idea of the changes that would be suitable in the selection and training programmes.

2.8 SEX

Sex is an important factor in all situations wherever human emotional relationships are involved. The emotional rapport is an essential characteristic for good and successful teaching. The emotional involvement of males and females are different. Psychology has pointed out that in the early stages of education the preference is for female teachers. Even upto the secondary stage the suggestions
have been in favour of giving females preference over male teachers except for a very few subjects and especially as India is a male dominated society. Sex discrimination is being strongly opposed now. Where there is no sex discrimination women come out more successful than men. In India it was found that except in the villages, most of the English medium schools where co-education was permitted, the teachers were mostly women.

Aptitudes are also known to differ in relation to sex. It is, therefore, logical to study differences due to sex especially in relation to research in educational process etc. One of the factors that has been chosen for the study is sex. Both male and female teachers have been selected for study. The following are some of the studies that have been carried out in this fields.

Sex is a variable which is significant in certain contexts and not significant in other context. When we give same importance to both the sexes, treat them equally and impartially, it is obvious that areas where sex differences are significant be identified. By doing this it will be possible to try to fit in persons of suitable sex for the appropriate spheres of activities.

Chitnis(59), Rasool and Suri(60), Pathak(61), Pillai(62), Gnanamabil(63), Acrharyalu(64) found significant differences in scheduled caste pupils and others in sociological aspects. Marr and Gupta(65), Banoo(66), Chand(67),
Singh (68), Kantawala (69) and Satyandan (70) found no significant difference due to sex in image of self, parental press at various socio-economic levels, correlates of vocational maturity, reading attitudes of high school students, socio-economic status and academic achievement. May be this was because the sample taken was of adolescent children.

Jaiswal (71) studied creativity of teachers trainees and found female teachers to be lower in this respect than males in science but higher than males in arts. Mohanty (72A) also found males' performance in class higher than females.

Saraswat (72B) in his study of trained High School teachers found that there was significant difference in male and female teachers and arts and science teachers but not due to experience. This is in agreement with the previous work listed. The difference in attitude due to sex difference is logical because the emotional structure of males and females is different. Also in certain areas women are more capable than men.

2.9 FACULTY

The last factor that has been considered in this work is of faculty. For relation to the future, the higher secondary syllabus has been divided into seven streams. Each has its own particular future prospect. Out of these the two major streams which are still continuing in their importance are the Arts and Science faculties.
Arts faculty includes the subjects which come under the Arts - language and social sciences etc. Under the science faculty there are the pure science subjects which later on lead to study of scientific subjects and related courses. The method of study, impact of the study on the pupils etc. are quite different in these two streams. It is, therefore, justifiable to take this aspect also as a characteristic to be studied. Research in Psychology and Education have revealed that the aptitude and efficiency associated with each subject is different. In the Indian Institutions allocation of subjects for teaching are not necessarily those for which the teacher has an aptitude. It is natural that their efficiency may not necessarily be good if their aptitude is not for the subject they are teaching. The difference in efficiency of science and arts teachers have been given some thought. Work has been carried out to study the difference between them on many aspects. But the relationship between aptitude and efficiency in the context of arts and science faculties has so far not drawn any attention. This is an important aspect as it is now realised that both subjects have not only their own individual importance but the development in both subjects is essential for the overall development of the pupil.

The inclusion of compulsory general science, increasing involvement of science in human life industrialisation etc. have increased the importance of science teaching and therefore of science teachers. But arts
subjects cannot be neglected in comparison. In fact with the increasing complexity of human life arts subjects are also having increasing significance. Language of course is the important means for establishing proper communications and expressions (science and mathematics require exact presentation). Arts is very important tool for the treatment, identification and understanding of personality problems and a therapy for many kinds of physical ailments too. Of the seven streams - humanities (arts), science, commerce, agriculture, technical, home science, the two streams of arts and science are still not only the most common but have the maximum number of students enrolled in these classes. Streams like commerce and agriculture call for an earlier decision for vocational choice than these two streams. A switch over from arts or science to the other streams is accepted but not vice versa. Most studies have been carried in relation to special problems of teaching of arts or sciences subjects but only a very small number have been carried out to study the differences.

Exammal (73), Khajuria (74) have studied teaching efficiency in relation to the teaching of Botany and Mathematics. Kirkire (75), Naidu (76), and Kumar (77) have studied the impact of classroom behaviour on the achievement of pupils in Mathematics, Science and Social Studies. In view of the increased staff strength and their specialisations, research work has been strengthened in other areas also such as educational management, higher education,
sociology of education and science education. Research has been carried out in various areas related to science - achievement, aptitude, educational equipment, curricula, ability, text books and teaching etc. Its relationship has been studied with various factors of personality, but these are mostly concerned with pupils and not teachers.

In conclusion we can say that a work of the present kind is one of the necessary researchers in the field of secondary education. It can at least point out the place where we should attempt remedial measures as well as the kind of remedy to be used.
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