THEORETICAL OVERVIEW

2.1 EDUCATIONAL DIAGNOSIS

2.2 DIAGNOSTIC TESTING

2.3 REMEDIAL TEACHING
THEORETICAL OVERVIEW

This chapter describes the theoretical aspects of Educational Diagnosis under the following heads:

2.1 EDUCATIONAL DIAGNOSIS

(i) Introduction
(ii) Importance of Educational Diagnosis
(iii) Characteristics of Diagnostic Tests
(iv) Steps in Educational Diagnosis
(v) Reason for the lack of success in Educational Diagnosis.

2.2 DIAGNOSTIC TESTING

(i) Functions of Diagnostic Tests
(ii) Construction of a good Diagnostic Test
(iii) Stages of Preparation of Diagnostic Tests
(iv) Administration of Diagnostic Tests
(v) Role of Computers in Diagnostic Testing
(vi) Use of Diagnostic Tests.
2.3 TEACHING INSTRUCTION

(i) Need for Remedial Teaching
(ii) Basic Principles of Remedial Teaching
(iii) Preparation of Remedial Materials
(iv) Implementation of Remedial Programme
(v) Development of Remedial Teaching Programme for Backward students
(vi) Limitations of Remedial Instruction.

2.1 EDUCATIONAL DIAGNOSIS

2.1.1 INTRODUCTION

The process of determining the causes of educational difficulties is known as educational diagnosis. The scope of educational diagnosis is much larger than the use of tests and examinations. It is not proper to limit the scope of diagnosis to locating the causes that interfere with the ordinary academic prognosis of the pupils. An adequate diagnosis may involve the use of intelligence tests, both general and specific, and of diagnostic achievement types of laboratory apparatus for measuring sensory activity, co-ordination and the like. Other forms of appraisal such as rating scales, controlled observation,
questionnaires and interviews can also be used for diagnosis in education.

According to Tiges (1968), *major function of diagnosis is to facilitate the optimum development of every student.* According to Good (1945), *diagnosis is the procedure by which the nature of a disorder, whether physical, mental or social is determined by discriminating study of the history of the disorder and of symptoms present.*

According to Barr et al. (1947), *the correction and elimination of the weaknesses through a constructive attack on their causes constitute an essential complementary process closely related to diagnosis.* The development of systematically constructed and standardized diagnostic tests and procedures of various kinds have a marked effect on instructional practices and materials.

Educational diagnosis is the basis of effective and intelligent teaching. Diagnosis in education means a case study of the condition of learning to determine its nature and to find out the causation, with the main purpose of correcting and remedying the difficulty involved in active remembering. The major function of
diagnosis is to facilitate the optimum development of every student. It is the determination of the nature of learning difficulties and deficiencies.

2.1.2 IMPORTANCE OF EDUCATIONAL DIAGNOSIS

A satisfactory level of diagnosis can be reached when the teacher has gained sufficient insight into the nature of the child's problem and enables him / her to plan appropriate corrective instruction. To a great extent, this will be determined by the complexity of the individual problem. For attaining maximum effectiveness in teaching, diagnosis of a child's learning difficulties should be made as early as possible. When the nature, extent and causes of a child's retardation and acceleration are known, together with data on his / her capacity for learning, effective developmental or corrective teaching can be planned.

Monroe⁴ (1965) suggested two major aspects of diagnosis in teaching. They are:

(i) Determination of the extent to which desirable educational objectives are achieved.

(ii) Identification of factors that may be interfering with the optimum growth of the individual.
Diagnosis is an understanding of a present situation in terms of its causes, what has brought it about or in terms of what it will cause. Diagnosis, in one way or another involves a conception of cause.

Ross\(^5\) (1956) suggested the five levels of diagnosis. They are:

(i) Who are the pupils having problem?

(ii) Where are the errors located?

(iii) Why did the errors occur?

(iv) What remedies are suggested?

(v) How can the errors be prevented?

The first four are grouped as corrective diagnosis and the fifth one is known as preventive diagnosis.

In the words of Sheldon\(^6\) (1960), the following principles need to be understood by a teacher to check the disabilities of his pupil diagnostically.

(i) Diagnosis is an external aspect of teaching and is a preliminary step to sound instruction.

(ii) Diagnosis should be continuous because child's growth in various skills depends on the sequential
development of each skill, which is promoted through the teacher's knowledge of the progress of each child.

(iii) Diagnosis is an individual task and reflects the fact that each child is different.

(iv) Since the instruments of diagnosis have not been perfected, the limitations of each instrument must be thoroughly understood.

2.1.3 CHARACTERISTICS DIAGNOSIS TEST

The following are the characteristics of educational diagnosis:

(i) Objectives

The diagnosis is essentially the task of locating more specifically those factors which bear more causal relation to the progress of learning of a pupil or a group of pupils. If educational diagnosis is to be a handmade to effective teaching. The essence of educational diagnosis is the identification of some of the causes of learning difficulty and some of the potential educational assets so that, by giving proper attention to these factors, more effective learning may result.
(ii) Validity

Validity refers to the evidence of causal factors to the attainment of the objectives. Investigations have shown that the attempt to diagnose children's difficulties in arithmetic by inspection of the test papers was reasonably valid for detecting kinds of examples that they could or could not solve correctly but the method was not valid for determining the mental processes involved in the children's method of work. This shows that a method of diagnosis may be valid for discovering certain factors while not valid for determining other factors.

(iii) Objectivity

Third characteristic of a satisfactory diagnosis is its objectivity. The elimination of widely varying personal judgments in diagnosis is essential if diagnostic procedures are to be used with any degree of precision.

(iv) Reliability

Increase in reliability is related to the decrease in the fluctuation in conclusion that can be secured by providing a more adequate and representative sample of pupil reaction upon which the conclusions are based. The improvement of
the reliability of any diagnosis involves the utilization of a more satisfactory sample of pupil reaction as a basis for the diagnosis.

(v) Level of Diagnosis

A diagnosis that locates only a very general area is obviously less useful than that defies the mistakes more precisely.

(vi) Comparability

An interpretation of the results of a diagnosis usually rests upon the experience with similar data. Hence, diagnostic procedures that give comparable results are basic to intelligent interpretation. The progress of the pupil over a period of time is basic to the appraisal of the effect of remedial teaching.

(vii) Exactness

Some diagnostic tests give only vague results. Diagnostic test may be tried with typical classes to discover their exactness. The exactness may be increased by analysing the characteristics of the progress in learning more minutely and utilizing the symptom thus identified as the base of the diagnosis.
(viii) Comprehensiveness

Teachers make a very minute diagnosis in certain limited aspects of pupil activity and no diagnosis at all in other aspects. This incompleteness is dangerous because the attention of teacher and learner is apt to be directed primarily towards those things for which a thorough diagnosis has been made.

(ix) Appropriateness

Certain desirable changes in boys and girls usually develop under a wide variety of educational environments without the necessity of giving very specific treatment. These are the changes that we consider characteristics of maturity. For such cases, an educational diagnosis is unnecessary and inappropriate. Any satisfactory diagnosis must be appropriate to the programme.

(x) Practicability

Many of the most valid and reliable diagnostic procedures that have been developed are impracticable for use in all schools. New diagnostic procedures need to be developed that meet the other qualifications of a satisfactory
diagnosis and that at the same time are capable of extensive use under school conditions.

(xi) Qualified Diagnosticians

A satisfactory diagnosis usually requires educational diagnosticians who are well qualified. The educational diagnostician, be he a specialist or a teacher, must understand the educational programme in connection with which the diagnosis is being made.

Cook\(^7\) (1958) has stated the following characteristics of an effective diagnostic test.

(i) It should be an integral part of the curriculum, emphasizing and clarifying the important objectives.

(ii) Its test items should require response to be made to situation approximating as closely as possible to be functional

(iii) It must be based on experimental evidence of learning difficulties

(iv) It should reveal the mental processes of the learner sufficiently to detect point of error
(v) It should suggest or provide specific remedial procedures for each error detected

(vi) It should be designed to cover a long sequence of learning systematically

(vii) It should be designed to check forgetting by constant review of difficult elements as well as to detect faulty learning

(viii) It should reveal pupil's progress in objective terms.

A diagnostic test is a test used to diagnose or reveal an individual's weaknesses and strengths in a certain course of study. These are designed to analyse individual's performance and provide information on the causes of difficulty. The purpose of diagnostic testing is to furnish continuous specific information in order that learning activities may be most productive of desirable outcomes. Diagnostic tests would be helpful in identifying the use of faulty, round-about or incorrect procedures; the use of elementary processes where these could have been replaced by advanced processes. A carefully constructed test could be used as an 'inventory test' towards the beginning of an year's work or topic as an analytical test of component skills involved in the different branches or units of study. To what extent educational
diagnosis can be effectively engaged by teachers and how the educational diagnosis function in the class room is a problem of importance.

2.1.4 STEPS IN EDUCATIONAL DIAGNOSIS

The essential steps in educational diagnosis are:

(i) Identification of students who are having learning difficulties

(ii) Locating the errors of learning difficulties

(iii) Discovering causal factors.

2.1.5 REASON FOR LACK OF SUCCESS IN EDUCATIONAL DIAGNOSIS

Instructional planning for a class can be enhanced by taking such data into account, instructional material can be selected or developed to improve learning in deficient areas, and time can be reallocated from topics on which students have demonstrated higher levels of accomplishment.

Any achievement test can provide diagnostic information of value to individual students if they are told which items they missed. With the teacher’s help, these students can then correct the mistakes.
An important reason for this lack of success in educational diagnosis is that effective diagnosis and remediation take a great deal more time than most teachers have or most students would be willing to devote. The diagnosis of reading difficulties is a well-developed skill, and remedial treatments can be very effective. Because reading is so basic to other learning, the time required for diagnosis and remediation is often spent ungrudgingly. But where the subject of study is more advanced and more specialized, the best solution to learning difficulties in an area, say Physics, Chemistry, or German, may be to put off study in that area and cultivate learning in other areas that present fewer problems.

Often the results of the subject matter test in a battery indicate a general problem, and the diagnostic test in administered to ascertain the specific deficits in term of skills and sub skills. Unfortunately, diagnostic test, like other achievement tests, help to identify problem areas, but they seldom provide reasons for the difficulties and cannot prescribe solution to overcome them. A major challenge to the teacher is to synthesize the entering behaviour information about a student so that the instructional strategies and materials can be selected that will optimize that student’s condition for learning.
2.2 DIAGNOSTIC TESTING

Thorndike and Hagen\(^8\) (1970) suggested that a diagnostic test should provide a detailed picture of the strengths and weaknesses of a pupil in a particular area. Any test that yields more than a single overall score is diagnostic. Diagnosis has become an essential phase of developing plans of adaptational instruction to individual differences. Recent research on characteristic differences between traits and performances of good and poor achievers in several areas of learning has yielded a rich body of information, which proved to be having considerable value in diagnosis.

A diagnostic test is a test designed to locate specific learning deficiencies in case of specific individuals at a specific stage of learning so that specific efforts could be made to overcome those deficiencies. It helps the teacher in identifying the status of the learner at the end of a particular lesson, unit or course of learning as to what specific teaching or learning points have been properly grasped by the learner. If such a deficiency is located in several students, it become obvious to the teacher to reflect upon whether something went wrong with his method of teaching. After administering a diagnostic test or battery test to
students, a teacher takes remedial measures to overcome the deficiencies thus discovered.

Diagnostic test differs markedly from achievement test though every achievement test has some diagnostic value and vice versa. The main difference is in the way items are sampled. In an achievement test, sampling of questions is not so exhaustive to cover each and every learning point as the content is generally a large portion; whereas in a diagnostic test each learning point has several items, each cluster of such items forming a subtest. The diagnostic value of the test is obtained from the total score which is the sum of the scores on these subjects. The coverage of subject matter is more detailed, though based on a smaller area than an achievement test. A diagnostic test thus requires a very careful analysis of the content and a detailed study of the common errors made by the students.

2.2.1 FUNCTIONS OF DIAGNOSTIC TEST

Cook⁹ (1951) suggested the following functions.

(1) **To direct curriculum emphasis by:**

   (i) Focusing attention on as any of the important ultimate objectives of education as possible
(ii) Clarifying of educational objectives to teachers and pupils

(iii) Determining elements of strength and weaknesses in the instructional programme of the school

(iv) Discovering inadequacies in curriculum, content, and organization.

(2) To provide for educational guidance of pupil by:

(i) Providing a basis for the preliminary grouping of pupils in each learning area

(ii) Serving a basis for the preliminary grouping of pupils in each learning area

(iii) Discovering special aptitude and disabilities

(iv) Determining the difficulty of material pupil can read with profit

(v) Determining the level of problem solving ability in various areas

(3) To stimulate the learning activities of pupils by:

(i) Enabling pupils to think of their achievements in objective terms
(ii) Giving pupils satisfaction for the progress they make, rather than for the relative level of achievement they made

(iii) Enabling pupils to compete with their past performance record

(iv) Measuring achievement objectively in terms of accepted educational standards, rather than by the subjective appraisal of the teachers

(4) To direct and motivate administrative and supervisory efforts by:

(i) Enabling teachers to discover the areas in which they need supervisory aid

(ii) Affording the administrative and supervisory staff an over-all measure of the effectiveness of the school organization and supervisory policies

Diagnostic tests are not administered to all students. Before the administration of diagnostic tests, the students’ achievement usually is established as deficient relative to other students. The diagnostic test is expected to indicate the specific skills with which the student is deficient. To accomplish this, a diagnostic test must have the following characteristics:
The test must provide a series of scores, each representing performance in a specific skill.

The respective skills must be critical to the overall performance being evaluated, such as reading achievement or arithmetic achievement.

The sub test used to assess each of these skills must represent a valid measure.

Each subtest must have high reliability.

The correlation among subtests must be low.

In essence, a diagnostic test is a series of achievement tests, each designed to measure behaviour. These tests provide independent measure of the respective skills, and this validity and reliability must be established separately for each scale. All diagnostic tests provide a series of scores, although the number of scales varies considerably among tests. Diagnostic tests can indicate what a student's deficiencies are and why these deficiencies have occurred. A diagnostic test, however, is used to find a way to resolve the difficulty a student is having. A diagnostic test might identify important specific skills the student has yet to achieve, but it will not indicate why these skills have not yet been achieved or what action, if any, will help the student to overcome these difficulties.
From a measurement perspective diagnostic tests have significant limitation. Consequently their scores must be interpreted conservatively. Most diagnostic tests are administered to one student at a time. The test therefore provides a structured setting through which the examiner can try to gain insight into the student's difficulty. This use of diagnostic tests would be particularly useful to individuals such as reading specialists who are trained in identifying specific learning problems.

2.2.2 CONSTRUCTION OF DIAGNOSTIC TEST

Diagnostic test may be either standardized or teacher-made. Teacher-made tests besides being more economical are also more effective, as each teacher can frame it according to the specific needs of students.

2.2.3 THE STAGES OF PREPARATION OF A DIAGNOSTIC TEST

(i) Planning
(ii) Writing items
(iii) Assembling the test
(iv) Providing Directions
(v) Preparing the scoring key and marking scheme
(vi) Receiving the test
The details regarding the stages of preparation of diagnostic test are given below.

(i) **Planning**

The unit, on which a diagnostic test is based, requires a detailed exhaustive content analysis. It is broken into learning points without omitting any point. The diagnostic procedure is based on the premise that mastery of the total process cannot be stronger than that of the weakest link in the chain of related concepts and skills. Accordingly each concept, skill of learning point called into play is identified at the time of constructing the test.

As far as a diagnostic test is concerned, it is not very necessary to know the relative importance of the learning points. All the learning points have to be covered in an unbroken sequence. Each learning point should have an adequate number of questions to help identify the area of weakness.

(ii) **Writing items**

All the forms of questions (essay, Short answer & objective types) can be used for testing different learning points. However, it appears for diagnostic purposes, short answer questions involving one or two steps, are used widely.
What ever be the form of questions, they should in general be easy, suitable for average students of that age or grade. The questions have to be specifically related to the learning points and should be such as to throw light on the weakness of the students. The question should be written in simple language. The scope of the expected answer should be clear to the students.

The questions are clubbed around the learning points, even when they are of the different forms; the learning points are arranged sequentially from simple to complex which ensures that students do not have to change their mental sets very frequently.

(iii) Assembling the test

Preparation of blue print may altogether be avoided. No rigid time limit need to be specified, though for administrative case a time limit may be set.

(iv) Providing directions and preparing scoring key

A set of instructions clear and precise, is drafted. It should also be provided with a scoring key and marking scheme.

(v) Reviewing the test

Before printing the test, it should be carefully edited and reviewed. This ensures that any inadvertent errors are eliminated.
2.2.4 ADMINISTRATION OF DIAGNOSTIC TEST

The following points need to be kept in view:

(i) The first task of the teacher is to win the confidence of the students and reassure them that test is to help them in the improvement of their learning rather than for declaring pass or fail.

(ii) It should be administered in a released environment.

(iii) Students should be seated comfortably.

(iv) Students should be asked not to consult each other while taking the test.

(v) If any student is not able to follow something, he should be allowed to seek clarification from the teacher.

(vi) The teacher may ensure that the students taking the test attempt all questions.

(vii) Time schedule should not be enforced strictly. If any student takes a little more time, he should be allowed to do so.
2.2.5 ROLE OF COMPUTERS IN DIAGNOSTIC TESTING

Computers can be used for diagnostic testing in education. Several commercial test publishers have developed programmes for interpreting scoring of available diagnostic tests and for combining test scores and other data in the prescriptive formulation of individual used instructional programmes. Forhand (1987) developed a computerized testing programme jointly sponsored by College Board and Educational Testing Service in United States of America. Ward et al. (1986) designed a testing programme for use in conjunction with a Computerized Adaptive Testing (CAT) programme for placement of students in need of remedial instruction in basic skills. Through interactive computer use, the programme is tailored to the students' own performance.

2.2.6 USE OF DIAGNOSTIC TESTS

The important uses of diagnostic tests are:

(i) Items, units or skills, which are understood by a majority of students, can be located and teaching can be adjusted to the situation

(ii) Items, units or skills which are not understood by a majority of pupils can be located and there by special emphasis in these aspects can be attempted
(iii) The causes for the difficulty in certain items can be found out, for which remedial measures can be taken

(iv) Individual weakness can be found out which would serve as the baseline for individual correction work and personal guidance

(v) Diagnostic test may be used for prognosis. It helps to predict the possible success in certain type of courses or vocation and therefore it helps in providing guidance and counseling

(vi) Diagnostic tests can be made the basis of individualized instruction. Differentiated teaching methods, ability grouping, individual drill, differentiated assignments etc. can be attempted on the basis of the results of diagnostic tests

(vii) Diagnostic test measures 'real understanding' as opposed to superficial mastery of subject areas measured by achievement of pupils in subject areas

(viii) Diagnostic tests can assist the pupil in locating one's weakness and so they can be corrected with maximum ease and economy
Theoretical Overview

(ix) Diagnostic tests can indicate the effectiveness of specific methods of teaching in dealing with specific teaching situations.

(x) Diagnosis of pupils' weakness and self-discovery can lead to motivation and interest can generate cooperation in future teaching learning situation.

2.3 REMEDIAL INSTRUCTION

The term remedial is employed in a broader sense to connote teaching which is developmental in its scope. Though our schools possess pupils who do not have any particular defects or faults which need correction, there are a group of students who urgently need assistance in developing increased competence in reading and the other fundamental processes. In their case, it is not primarily a problem of re-teaching or the remedying of errors, but it is rather teaching them for the first time those basic skills which are solely needed and are apparently lacking. Remedial teaching involves taking a pupil where one is and starting from that point leading one to greater achievement. It is just effective teaching in which the learner and his/her needs occupy the focal point.
The introduction of compulsory education is one of the main factors responsible for the fall in standards. A large number of pupils who fail to make normal progress in rural schools are merely backward or slow learners. The failure to maintain a standard of scholastic progress compatible with intellectual capacity is associated with factors intellectual and emotional, physical and environmental. According to Cyril Burt (1967) *The educationally backward is one whose disabilities are innate and general but acquired*. Very poor home conditions which result in an impoverished cultural atmosphere and a limitation of extra experience are some of the causes of backwardness.

Irregular attendance and failure are other causes. Pupil's scholastic disabilities are of a remedial kind. The problem can be solved at a comparatively low cost. Effective teaching which provides progress for all pupils in the fundamental subjects is a nutritive for the mental health of all children. Happy well adjusted children mean happy well adjusted adults. The necessary emotional adjustment together with the removal of scholastic backwardness can be effected using appropriate remedial measures. If remedial teaching is given, dropout, failure and wastage can be avoided. Remedial teaching is an integral part of
all good teaching. It takes the pupil at his own level and by intrinsic methods of motivation leads him to increased standards of competence. It is based upon careful diagnosis of defects and in general to the needs and interest of pupils.

Featherstone, Columbia University, says that the backward pupil learns best, if the teacher provides the following:

(i) Shorter units of instruction
(ii) More concrete association – to see, hear, feel etc
(iii) More motivated drill or review
(iv) More specific direction, purpose
(v) More illustration and audiovisual aids
(vi) More supervising and guidance
(vii) More time to complex work
(viii) Personalization of experience
(ix) Emotional involvement in the activity as in dramas, dancing and art
(x) Greater variety of pupil response in a given area of learning
(xi) Praise for work that shows any indication of work
(xii) Great variety of stimulation and material
2.3.1 NEED FOR REMEDIAL TEACHING

Teaching involves communication. That is, messages are being sent at one end and received at the other. When the messages are received as they are transmitted, then effective communication is believed to have taken place. Sometimes the message may not get across at all or may reach the other end in a garbled, distorted and unrecognizable version. In such instances a 'gap' develops between 'teaching' and 'learning'. Frequently the learner has not learnt what the teacher intended him to learn. In this case, a message is received, but it is not the one which was sent out.

Several problems arise in dealing with this situation. First of all, the teacher has to find out if the message received by the student is the one sent out. For that, the teacher has to rely on the feedback from the student what he has received. Usually the student finds it hard to express what he has received and this gives the teacher the impression that learning has not taken place at all. So the teacher tries to get the message across through repetition. But, if the message received is a wrong one, it has to be 'cancelled' before the correct one can be 'written in' in order not to create problems of interference. This is one of the functions of remediation.
Learning problems are of different kinds and each call for different remedial solutions. Most of the problems are caused by incomplete or inadequate learning. The diagnosis of the learning problem is, hence, very important. Wrong learning inevitably results wherever there is teaching. It interferes with the desired learning. There can also be different kinds or degrees of learning requiring different strategies of remediation. The diagnosis of the learning problem is, hence, very important. Remediation may be regarded as an activity parallel to the teaching function of motivation which maintains constant vigil over his students. But it is possible to create in the students' mind the same kind of 'alertness' which his presence seems to endure. It must be made felt that it is important for the learner not to make mistakes and draw forth censure and ridicule. The correction of wrong 'concepts' and insights, and the strengthening of desired 'concepts' can be affected through explanation of various kinds. If an error seems to be due to interference, a comparison of the two language systems at that point may be provided. The wrong learning of certain concepts may also have to be remediating. The learner can be prevented from practicing a wrong concept only if there is constant and effective monitoring, so that the correction is immediate. Unmonitored practice will invariably result in the strengthening of any wrong concept which exists.
The greatest problem in any type of remediation is to make the new learning abide. Old errors have the habit of 'coming home to the roots'. However effectively they are remediated and there is a point beyond remediation is impossible because no more learning takes place at that stage. The errors become fossilized. Development of the necessary attitudes and determination on the part of the learner is far more crucial than the development of 'concepts' or mere 'habits'.

It can be inferred that diagnosis is an important factor in imparting instruction. Instruction will be incomplete without diagnosis and remedial teaching. Individuals differ in abilities. Pupils of different levels of ability are likely to be present in a class of forty or fifty. Slow learners, fast learners and average learners – all have to be catered to in different ways. The highly talented should be provided with additional work which requires higher intelligence level and whereas the slow learners have to be specially cared for in order to bring them to the level of the average student. It is valid to consider insight-formation, application, consolidation and revision.

Ideally, new learning should not be permitted until wrong learning has been cancelled and corrected. This is, however,
impractical since remediation is a slow and laborious process. A thing once learnt is difficult to cancel, whether correct or incorrect. Remediation, hence, has to go on simultaneously with the other teaching functions. The more teaching a learner has had, the more he may be in need of remediation.

The possible causes of failure in learning can be due to interference from concepts previously learnt or over generalization on the basis of previous learning. These errors of learning are caused by the learner taking an active part in the process of learning. They tend to adopt a particular learning strategy. Here; the learner tries to simplify the task of learning or transfers his precious learning to a new situation. The teacher is in no way responsible for these errors. He can probably do nothing to prevent them.

Learners seem to learn through their errors. It follows that the teacher should not only permit certain kinds of errors but assist him to form rules or hypotheses which may be used as touch stones and amended if necessary. Each time the error is made, the learner receives 'feed back' which he uses to amend his self-made rules. Then he finally arrives at his linguistic competence. The appropriate strategy of remediation can be
determined by the types of errors which have to be dealt with. They need classifying into groups and types as all the individual errors cannot be dealt with practically.

Remedial teaching is basically cognitive. The aim is to make the learner conscious about the rules of concept attainment and his own use of it. A teacher cannot consider remediation as a 'follow-up' or an optimal activity.

2.3.2 BASIC PRINCIPLES OF REMEDIAL INSTRUCTION

Remedial instruction consists of remedial activities taking place along with the regular instruction or outside the regular class instruction and usually conducted by a special teacher. The type of remedial treatment given to the students depends on the character of the diagnosis made. If physical factors are responsible, remedial attention should be provided. The results of diagnosis have significance only if they constitute the basis for corrective instruction and for remedial procedures, which remove, alleviate or compensate for causal factors in the child and his / her environment. If a teacher can identify several children who lack a thorough understanding of certain concepts, he / she may re-teach these concepts through group instruction, demonstrations, and supplementary silent reading by the pupils etc. General
backwardness in subject is frequently due to inadequate mastery of the basic skills of Reading, Arithmetic, Language, Handwriting and Spelling or Inadequate command of the work, Study skills, etc. Hence corrective work in the basic skills plus improved motivation in the subject may be sufficient to effect improvement.

The following are the general principles of remedial teaching:

(i) Individual consideration of the backward pupil with recognition of his mental, physical and educational characteristics

(ii) Thorough diagnosis with a pretest

(iii) Early success for the pupil in his backward subject or subjects by use of suitable methods and materials

(iv) Dissipation of emotional barriers through early success, praise, continuous help, sympathetic consideration of his difficulties and sustained interest.

(v) The need for a new orientation towards the backward subject through new methods involving play way approaches, activities and appropriately graded materials

(vi) Frequent planned remedial lessons

(viii) Co-operation with the parents
2.3.3 PREPARATION OF REMEDIAL MATERIALS

Preparation of remedial materials for a child is a crucial aspect of corrective instruction. Remedial materials prepared should meet the following criteria:

(i) The difficulty of the remedial material should be geared to the child's readiness and maturity in the subject or skill to be improved. A set of remedial materials should provide a wide range of difficulty, covering several grades.

(ii) The remedial measures should be designed to correct the pupils' individual difficulties. Through the use of observation, interview and diagnostic testing materials, the teacher would have analysed the work of the backward children in order to locate the specific retaining needs. An adequate amount of remedial materials must be provided which is designed to correct the specific difficulties identified.

(iii) The remedial materials should be self-directive. Children may differ widely as to the instructional materials needed to correct their difficulties.
(iv) The remedial measures must permit individual rates of progress

(v) A method should be provided for recording individual progress. When the child has an opportunity to record his/her successes on a progress record, he/she is given an additional incentive to achieve.

2.3.4 IMPLEMENTATION OF THE REMEDIAL INSTRUCTIONAL PROGRAMME

Although the selection of the remedial material is highly important, it is only one aspect of the teacher’s approach upon learning difficulties and underlying causative factors. The following principles should guide the teacher in planning and carrying out the programme.

(i) One of the first steps should be the correction of any physical factors, which affect learning

(ii) The co-operation of the parents should be obtained in correcting such physical factors, alleviating emotional tensions, and providing better study conditions and the like

(iii) If the child has little desire to learn, immediate steps should be taken to try to improve his/her attitude
through activities which makes the child enjoy learning

(iv) Corrective instruction should begin by analyzing with the child the specific strengths and needs, and showing how the instructional materials are designed to correct his / her deficiencies. Making the child aware of his / her problem and providing a method of solving them, based on individual effort, helps to establish a powerful motivating force

(v) Instruction should begin at or slightly the learner's present level of achievement. Short term goals should be established which the learner considers reasonable and possible to attain. By means of progress charts, praise and social recognition the child's feeling of successful accomplishment should be reinforced

(vi) Since corrective instruction must usually proceed on the basis of a tentative diagnosis, the teacher must be ready to modify the remedial programme if the approach and materials selected seem to be ineffective
(vii) Corrective procedures must be modified for children of relatively inferior or superior mental ability.

(viii) The results of corrective instruction should be evaluated. Comparable forms of a standardized test should be administered before and after a period of concentrated instruction. The effectiveness of the programme must be evaluated for each child than in terms of class averages.

(ix) A cumulative record should be made of the results of diagnosis, of methods and materials used, and of the results of corrective instruction. Such a record is helpful in the determination of next steps, and of invaluable help to the next teacher when the child is promoted.

If the children are assigned to a remedial group taught by a special teacher, great care should be taken to integrate the special corrective programme with the developmental teaching in the regular classroom.
2.3.5 DEVELOPMENT OF REMEDIAL TEACHING PROGRAMME FOR BACKWARD PUPILS

Remedial teaching is a continuous process involving testing, teaching, testing and re-teaching. In the words of Billows\textsuperscript{14} \textit{It is a moral building and an interest building enterprises for the pupils.}

In the first stage, it requires the selection of backward pupils. This can be done by conducting a pre-test. Once the backward pupils have been identified, the causes of their backwardness can be diagnosed. It is in the third stage that remedial programmes are to be used. Effective follow up is absolutely necessary and the pupils' progress has to be evaluated and in areas where weakness still lingers, remedial work has again to be done, with necessary modifications and adaptations in the light of the experience so gained.

2.3.6 LIMITATIONS OF REMEDIAL INSTRUCTION

In Remedial instruction, the teacher is constantly reminded of a principle, which is frequently overlooked in other teaching situations. To a remedial teacher, learning rather than teaching is the goal. The growth of each individual rather than the change in group averages is the criterion of success. Hence the teacher needs a rich background in child psychology and educational
diagnosis in order to successfully tackle the variety of individual problems which the child presents themselves.

A major problem in remedial instruction is the dearth of effective instructional materials. Most of the published materials have been designed for group instruction. Only a small percentage can be adapted for individual instruction. If the material is graded carefully and provided for ample practice on each of the basic steps, the teacher can adapt it for individual use by providing self-directive instruction for pupils. The teacher who understands the objectives to be attained, the analysis of individual difficulties, the types of materials needed, and the techniques essential for correction can adapt some published materials and develop additional supplementary materials which will be appropriate for corrective instruction.

Many teachers who attempt remedial instruction are faced with unusually large classes or with a large percentage of children in the class who are educationally backward. A beginning teacher with a large number of pupils in need of remedial instruction has to limit one's work to three or four pupils whose needs are greatest. As the teacher gains experience in the programme, he/she will be able to extend remedial instruction to all the children who need it.
REFERENCES


Theoretical Overview


* * * * * * *