CYPRUS

Participation in the activities of Member States in respect of educational structures

Special education

by J. Benevento

Serial No.: FMR/ED/SCM/80/150

UNESCO

Paris, 1980
SPECIAL EDUCATION

by J. Benevento

Report prepared for the Government of Cyprus by the United Nations Educational, Scientific and Cultural Organization (Unesco)

UNESCO
# TABLE OF CONTENTS

## I. INTRODUCTION
- Planning the mission ........................................ 3
- Background information ...................................... 4
  - Statistics .................................................. 4
  - Existing programmes and legislative measures .......... 5
  - Blind and deaf ........................................... 5
  - Physically handicapped .................................. 5
  - Severely handicapped .................................... 5
  - Mentally retarded ........................................ 5
  - Maladjusted ................................................ 5
  - Recent legislation ........................................ 6
- Teacher training ............................................. 6
- Assessment procedures ...................................... 8
- Medical services ............................................ 8
- Psychological services ...................................... 8
- Ancillary services .......................................... 11
- Voluntary organizations .................................... 11
- Parents ......................................................... 12
- Building, classrooms and equipment ....................... 12
- Curriculum guidance ....................................... 12
- Older handicapped .......................................... 12
- Research and development .................................. 13

## II. CONCLUSIONS AND RECOMMENDATIONS
- Preparation of special education teachers ............... 13
  - Pre-service training .................................... 14
  - In-service training ...................................... 14
  - Capabilities of special education teachers ........... 14
  - Programme instructors .................................. 15
  - Selection of teacher trainees ........................... 15

- Mainstreaming ............................................... 58
- Buildings ....................................................... 16
- Classrooms ...................................................... 17
- Size of class ................................................ 17
- Teacher-pupil ratio ........................................ 17
- Curriculum guidance ...................................... 17
- Instructional media centre ................................ 17
- Interministry committee on the handicapped ............ 18
- District committees on the handicapped .................. 19

- Assessment .................................................... 19
- The very young handicapped ................................ 19
- School-age handicapped .................................... 20
- Adult handicapped .......................................... 20
I. INTRODUCTION

1. At the request of the Government of Cyprus, the Director-General of Unesco arranged for a consultant mission, financed under the Organization's Regular and Participation Programmes, to be carried out in Cyprus from 7 January to 7 May 1980 with the following terms of reference:

   (a) study the present situation of special education in Cyprus;

   (b) advise the Government of Cyprus on the development of educational facilities for handicapped children in the country, in particular for the mentally retarded, and on modern teaching techniques in their education;

   (c) advise the government on the training of teachers of the handicapped and on educational equipment for special education.

2. Planning the mission. In keeping with the above description and in co-operation with Mr. Christos Kombos, Inspector of Special Education, it was decided that the consultant would concentrate her efforts on teacher training and on programming for the mentally retarded and the maladjusted. In mutual agreement, the consultant's work plans were as follows:

   (a) three to four weeks of collecting data; making initial, introductory visits to existing programmes; and meeting appropriate personnel;

   (b) returning to each special education site for a two- to three-day period to evaluate programmes;

   (c) preparing and teaching two one-week seminars for all those teaching mentally retarded or maladjusted children;

   (d) preparing and teaching an advanced seminar for those teachers of the mentally retarded or maladjusted who had had previous formal special education training (one week);

   (e) preparing and teaching a three-day seminar on basic special education principles and practices to regular education teachers;

   (f) assisting the headmistress of classes for the maladjusted to evaluate her staff and programmes (one week);

   (g) meeting with the Special Education Committee to advise on current conditions and immediate future planning.

   (h) meeting with the school psychologists to advise on current assessment procedures and future needs.

   (i) meeting and advising members of the Cyprus Parents of the Handicapped groups;

   (j) assisting the Inspector of Special Education with identifying sources for obtaining teaching materials for the handicapped.
Background information

3. Statistics. Figures and facts concerning the Cyprus population, birth rate, school population, and special education facilities were kindly provided by the Ministry of Education, the Inspector of Special Education, and the headmasters/mistresses of special education programmes.

4. The latest official statistical report (mid-1970) shows a total population in Cyprus of approximately 650,000 inhabitants. Of this total, 77 per cent are of Greek origin, 18.3 per cent are of Turkish origin and 7.7 per cent are other minorities. The consultant, being assigned to the Cyprus Government, worked exclusively with Greek Cypriots.

5. The birth rate figure is approximately 20 per thousand per year. The report of the Ministry of Education in Cyprus for the period of 1979-1980 gives the following data:

- estimated total population ages 5-8 is 22,597
- estimated total population ages 9-11 is 26,089
- estimated total population ages 12-18 is 44,600

Total 93,886

number of pupils attending school 1979-1980:

- primary school 49,286
- secondary school 42,390

Total 91,676

special education 1979-1980:

- mentally retarded 303
- maladjusted 70
- blind 59
- deaf 95

Total 527

6. Based on Cyprus educational statistics the proportion of children of compulsory school-age (in Cyprus, 5-18) needing special education, provisions are approximately as follows:

- mentally retarded 10 per 1,000
- maladjusted 10 per 1,000
- blind less than .002 per 1,000
- deaf less than .006 per 1,000

7. If these statistics are applied to the 91,676 children in the Cyprus school system for 1979-1980, the following predictions can be made for 1980-1981:

- mentally retarded 916
- maladjusted 916
- blind 2
- deaf 6

Total 1,840
8. Analysis of these figures show that the areas demanding serious attention are mental retardation and maladjustment. Cyprus must concern itself with the children in these categories who are not yet being served.

9. Existing programmes and legislative measures. Primary education has been in the domain of the Cyprus Government since 1924. With independence in 1960, the government assumed responsibility for both primary and secondary schools. Compulsory general education for children aged six to twelve was legislated in 1962.

10. Blind and deaf. A school for the blind was established in 1929 and remained under philanthropic auspices until 1957, at which time it came under government support. A school for the deaf, established in 1953 as a charitable facility came under government control in 1956. Each of these schools is ruled by its own Board of Management which is appointed by the Cyprus Council of Ministers. Each Board of Management is then in turn directly responsible to the Council of Ministers.

11. Physically handicapped. At present there is no specific government facility in Cyprus for school-age physically handicapped. Those children who have cerebral palsy, orthopaedic involvement, and/or chronic health problems are placed among children in other categories of handicap, or among normal children. A recent movement has begun to assist in developing and implementing appropriate services for these children. Cyprus has two separate groups specifically organized for spastic children. In addition, the Cyprus Red Cross has recently opened a charitable facility, housing approximately 32 children who are physically/orthopaedically handicapped and/or chronically ill. The adult physically handicapped (aged 18 and above) are provided for in a government-supported rehabilitation centre which strives to offer both educational and vocational training.

12. Severely handicapped. In 1964 a philanthropic women's group in Cyprus, Enosis, established a small home for severely retarded youngsters. In 1977, with assistance from Unesco, this home developed into a residential institution which now houses 42 children. Since that time it has been under government control. This institution is located in the city of Nicosia. In addition, a small private residence serving severely handicapped children exists in the city of Limassol.

13. Mentally retarded. At present, the mildly (educable) mentally retarded (IQ 50-70), as a group, do not have any special education programmes particularly designed for them. These children remain in regular school classrooms. In 1965, in Nicosia, the first facility, a day school, was built for the moderately (trainable) mentally retarded (IQ 25-50). Services continued to grow so that similar day schools for moderately retarded children arose in the cities of Limassol (1966), Paphos (1967), Larnaca (1968) and in the village of Liopetri (1980). In addition to the day school, the sites at Limassol and Paphos each have a sheltered workshop and a boarding house attached. The boarding houses are charitable organizations and are not yet government supported. A vocational training facility for older moderately retarded persons was built in Nicosia in 1977.

14. Maladjusted. It was with the maladjusted children that Cyprus made its initial attempt at integrating special education programmes into the regular schools. Begun in 1973 the programme now consists of eight classes located in various regular schools throughout Nicosia. They provide for maladjusted children from the ages of five to fifteen. These classes are supervised by a headmistress and a deputy headmaster. In cooperation with the headmasters/mistresses of the regular schools, they strive to expose the maladjusted children
to a normal school environment, while at the same time offering specialized curricula. The Cyprus Government has recently begun (1979) a school for older delinquent children. Because these children have had difficulty with the law, placement in this school is by court order.

15. Recent legislation. In May 1979, the Cyprus Government by law undertook responsibility for educating children between the ages 5-18 who fall into the categories of the moderately mentally retarded (IQ 25-50); the mildly mentally retarded (IQ 50-70); the slow learner (IQ 70-85); the maladjusted; and those children who do not fit into the above categories and have normal or above average intelligence, but yet do not learn from traditional school curricula.¹

16. The Council of Ministers is empowered to organize schools and programmes for any of the above categories throughout Cyprus. This legislation also requires each district in Cyprus to form a committee on the handicapped. Included in this committee must be a psychiatrist, a clinical psychologist, an educational psychologist, and a representative from the Ministry of Education. The duty of these committees, (yet to be formed) is to regulate (1) the establishment of programmes, (2) physical facilities and equipment, (3) development of boarding houses, (4) procedures for getting referrals from regular schools, (5) assessment (6) placement procedures, (7) criteria for teacher qualification, (8) communication of available facilities to parents.

17. The legislative actions and the already existing special education facilities offer a firm foundation for the expansion of services to the handicapped. Cyprus has shown a clear commitment to increasing special education programmes and personnel. Table I summarizes existing government-supported programmes in Cyprus.

18. Teacher training. At present there is no university or degree-issuing college in Cyprus. There is a pedagogical academy which offers a three-year training programme leading to a certificate in primary education. Those seeking certification in secondary education must take their training in other countries. However, Cyprus has a pedagogical institute which regularly offers seminars in elementary and secondary education.

19. Programmes issuing degree status, diploma status, or certificate status in special education do not exist in Cyprus. Those persons wishing to obtain extensive training in special education must travel to other countries to do so. It becomes immediately evident that this procedure is costly and ineffective in terms of the number of persons trained.

20. Also, teachers seek knowledge of working with the handicapped by attending seminars presented in Cyprus either by the government itself or by consultants invited from other countries. Since 1967 the Cyprus Government has offered a week's seminar in special education annually. During 1969-1970 a one-month training seminar was offered by a consultant from England. Another two-week seminar was presented during 1977-1978 by a consultant from Greece. The most recent seminar is the subject of this Unesco report. While this approach can reach a slightly larger number of teachers, it cannot hope to prepare enough personnel to meet the special education needs at present existing in and immediately predicted for Cyprus.

21. In Cyprus, regular education teachers with no formal education or actual teaching experience in special education are often assigned to teach classes of handicapped children. These teachers must rely on whatever in-service training is provided at their particular site. The quality and quantity of these in-service sessions needs to be developed.

¹In the United States this category is referred to as "Learning Disabled".
# TABLE I

GOVERNMENT SUPPORTED SPECIAL EDUCATION FACILITIES IN CYPRUS

<table>
<thead>
<tr>
<th>Facility</th>
<th>Year established</th>
<th>Number of pupils</th>
<th>Number of personnel</th>
<th>Admin.</th>
<th>teaching staff</th>
<th>non-teaching staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5-8</td>
<td>9-11</td>
<td>12-18</td>
<td>18+</td>
<td>full</td>
</tr>
<tr>
<td>Nicosia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School for Blind</td>
<td>1929</td>
<td>8</td>
<td>5</td>
<td>27</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>School for Deaf</td>
<td>1953</td>
<td>34</td>
<td>25</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Institution for Severely Handicapped</td>
<td>1977</td>
<td>11</td>
<td>18</td>
<td>15</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Vocational School for the Mentally Retarded</td>
<td>1977</td>
<td>-</td>
<td>-</td>
<td>18</td>
<td>47</td>
<td>1</td>
</tr>
<tr>
<td>School for Moderately Retarded</td>
<td>1965</td>
<td>5</td>
<td>11</td>
<td>28</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Classes for Maladjusted</td>
<td>1973</td>
<td>6</td>
<td>24</td>
<td>30</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Vocational Rehabilitation Centre for Physically Handicapped</td>
<td>1969</td>
<td>-</td>
<td>-</td>
<td>60</td>
<td>34</td>
<td>1</td>
</tr>
<tr>
<td>Limassol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School for Moderately Retarded</td>
<td>1966</td>
<td>36</td>
<td>63</td>
<td>31</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Reform School for court-appointed cases</td>
<td>1979</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Larnaca</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School for Moderately Retarded</td>
<td>1963</td>
<td>8</td>
<td>18</td>
<td>8</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Paphos</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School for Moderately Retarded</td>
<td>1967</td>
<td>4</td>
<td>6</td>
<td>20</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

x These are on a rotating 24-hour basis. There are no less than 10 staff on duty at any one time.
### Facility Liopetri School for Moderately Retarded

<table>
<thead>
<tr>
<th>Year established</th>
<th>Number of pupils</th>
<th>Number of personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5-8</td>
<td>9-11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Totals</td>
<td>126</td>
<td>178</td>
</tr>
</tbody>
</table>

22. In the twelve government-controlled special education sites described in Table I, there are 15 administrators and 127 teaching staff. The 15 administrators have the following special education training:

- 4 - university or college degree
- 5 - diploma status
- 1 - certificate status
- 5 - seminar/in-service training

The 127 members of the teaching staff have received the following special education training:

- 0 - university or college degree
- 3 - diplomat status
- 3 - certificate status
- 121 - seminar/in-service training

23. Table II summarizes the type of special education training of those currently working with the handicapped. Table III summarizes the years of experience in both regular education and special education of this group.

24. Assessment procedures. According to recent legislation, any child between the ages of 5-18 suspected of having learning and/or behaviour problems may be referred to the proper authorities for possible special education placement. Before such placement can occur the child must have had complete medical and psychological examinations.

25. Medical services. Medical services for the initial examinations appear to be relatively adequate. Follow-up is provided by the school medical service, which is responsible for all public schools. Medical personnel connected with this service visit public schools on a routine basis. Headmasters and headmistresses can if necessary call upon this service for general and specialized medical care for their pupils.

26. Psychological services. At present there are only four government-employed school psychologists in Cyprus. They are responsible for rendering both psychometric and vocational guidance services to the entire school population. This is clearly not sufficient. For the handicapped, the school psychologists function primarily as psychometricians even though they are very well trained and
TABLE II

SPECIAL EDUCATION TRAINING OF THOSE WORKING WITH THE HANDICAPPED IN CYPRUS

1979-1980

<table>
<thead>
<tr>
<th></th>
<th>Blind</th>
<th>Deaf</th>
<th>Mentally Retarded</th>
<th>Maladjusted</th>
<th>Physically Handicapped</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A (1)</td>
<td>TS (2)</td>
<td>A</td>
<td>TS</td>
<td>A</td>
</tr>
<tr>
<td>Total number of personnel</td>
<td>1</td>
<td>12</td>
<td>1</td>
<td>13</td>
<td>9 (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>78</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

REGULAR EDUCATION

<table>
<thead>
<tr>
<th></th>
<th>Master's Degree</th>
<th>Bachelor's Degree</th>
<th>Diploma</th>
<th>Certificate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Deaf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Mentally Retarded</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Maladjusted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Physically Handicapped</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9 (3)</td>
</tr>
</tbody>
</table>

SPECIAL EDUCATION

<table>
<thead>
<tr>
<th></th>
<th>Master's Degree</th>
<th>Bachelor's Degree</th>
<th>Diploma</th>
<th>Certificate</th>
<th>Seminar/In-Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentally Retarded</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maladjusted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physically Handicapped</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) A. Administrators
(2) TS. Teaching staff
(3) This number includes the Inspector of Special Education.
### TABLE III

YEARS OF TEACHING EXPERIENCE OF THOSE WORKING WITH THE HANDICAPPED IN CYPRUS

1979-1980

<table>
<thead>
<tr>
<th></th>
<th>Blind</th>
<th>Deaf</th>
<th>Mentally Retarded</th>
<th>Maladjusted</th>
<th>Physically Handicapped</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A (1)</td>
<td>TS (2)</td>
<td>A</td>
<td>TS</td>
<td>A</td>
</tr>
<tr>
<td>Total number of personnel</td>
<td>11</td>
<td>12</td>
<td>1</td>
<td>13</td>
<td>9 (2)</td>
</tr>
<tr>
<td><strong>REGULAR EDUCATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>2</td>
<td></td>
<td>1</td>
<td>2</td>
<td>37</td>
</tr>
<tr>
<td>1-5 years</td>
<td>3</td>
<td>1</td>
<td>12</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>6-10 years</td>
<td>4</td>
<td></td>
<td>1</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>11-15 years</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>16-20 years</td>
<td>3</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 20 years</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SPECIAL EDUCATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 years</td>
<td></td>
<td></td>
<td>2</td>
<td>5</td>
<td>63</td>
</tr>
<tr>
<td>6-10 years</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>11-15 years</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>16-20 years</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>More than 20 years</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

(1) A. Administrators
(2) TS. Teaching staff
(3) This number includes the Inspector of Special Education.
offer other services to teachers, parents and children. After undertaking the ini-
tial psychometric evaluation and subsequent placing of the handicapped in a special
education programme, the school psychologists cannot provide the continuous psycho-
logical assistance the children and their families so desperately need.

27. Summary copies of all medical and psychological reports are made available to
school personnel.

28. Ancillary services. One of the most serious problems facing the Cyprus
Government in providing for its handicapped is the lack of sufficient ancillary
services. Speech therapy and physical therapy are crucial for the handicapped.
Yet there is no special education facility in Cyprus which has a properly trained
full-time speech therapist. There is one qualified speech therapist who works
part-time at the boarding house in the city of Limassol. Parents seeking speech
therapy for their handicapped children must do so on a private patient basis. Staff
members in the special education facilities who are doing speech correction have no
training for the rigorous standards of this discipline.

29. Except for the rehabilitation centre for the physically handicapped only one
other centre, the institution for the severely handicapped, has a full-time
physical therapist. Occasionally a physical therapist will donate services to one
of the special education facilities, but not on a regularly scheduled basis.

30. Of all the facilities referred to in this report, there is only one, the
vocational school for the retarded, which has a full-time qualified occupa-
tional therapist.

31. There are no social workers directly attached to the Ministry of Education
specifically assigned to the special education sites. Although there is the
possibility of obtaining assistance from the social workers of the welfare office,
this is usually done through individual contact by a headmaster/headmistress. This
procedure cannot begin to meet the needs of the handicapped and their families.

32. There are no vocational guidance advisors, physical educational therapists,
recreation therapists, music therapists or art therapists for the handicapped
in Cyprus.

33. Voluntary organizations. For many years a number of charitable organizations
in Cyprus have made significant contributions on behalf of the handicapped.
In addition to the Lions Club and the Rotary Club there are a number of special
purpose groups which have provided direct services to the handicapped. Some of
the special service groups are:

Enosis;
Pan Cyprian Association for Mentally Retarded Persons;
Pan Cyprian Association for Children with Speech Problems;
Pan Cyprian Association for Blind People;
Pan-Cyprian Association for Rehabilitation of Physically Handicapped Children;
Pan-Cyprian Council of Welfare;
Pan Cyprian Association for Spastics;
Friends of the Deaf.
Many of the currently existing facilities for the handicapped were originally begun by these charitable organizations.

34. Parents. Cyprus parents have formed strong, active, cohesive groups which have become deeply involved in the promotion and development of more complete and effective programmes for their children. Each school has a parent council which contributes time, money and effort to improving services for the handicapped. In addition, they constantly strive to promote public understanding and to encourage legislation on behalf of their children.

35. Buildings, classrooms and equipment. During the past five or six years there has been a growth in the number of new school buildings in Cyprus. This includes sites for the handicapped. There is evidence that this trend will continue for some time. Many of the sites for the handicapped come from joint funds from private and government sources. The parents of the handicapped are actively involved in the creation and development of these sites.

36. The oldest buildings are those used for the moderately retarded in Larnaca, Nicosia and Paphos. Plans to move these programmes to new sites are currently being made. The building in Larnaca needs immediate attention. It is much too small to offer decent classroom space to the children there. The sites at Nicosia and Paphos, while certainly old, are used wisely in terms of classroom space and programme management.

37. All facilities need more teaching equipment and materials. This problem is crucial in the schools for the moderately retarded and in the classes for the maladjusted.

38. Curriculum guidance. The administrators and teaching staff of all the facilities meet regularly to discuss individual clients and to work out curriculum development for the handicapped. The level of sophistication is not always high; when concepts are discussed they are often seen in isolation and not in a total pattern of quality curriculum design for the handicapped.

39. The curriculum guide for the moderately retarded has recently been prepared and distributed to the teaching staff. This consultant had an opportunity to see it before its distribution. While it follows modern trends in its general aims, it lacks specificity in task analysis and in teaching activities.

40. Older handicapped. There is a decided lack of programmes for the older handicapped in Cyprus. Table I of this report shows twelve government agencies servicing a total of 664 clients, only 119 of which are over 18 years of age. A total of 164 clients are between the ages 15 to 18.

41. The vocational rehabilitation centre for the physically handicapped has the largest number of older clients and strives to give them specific job training with placement in the normal working world as its goal. In addition to this programme the centre is now building a boarding house and will establish a sheltered workshop for those unable to travel to, or adjust to, the normal working world.

42. The school for the blind and the school for the deaf have secondary programmes at their respective sites but strive to enrol as many of their students in regular secondary schools and even college programmes as possible. Currently they have a combined number of 26 clients over 18 and approximately 30 from 15 to 18 years of age.
43. The vocational education school for the mentally retarded services 18 persons between the ages 15-18 and 47 persons aged 18 and above. In combination the schools for the moderately retarded service 45 persons between the ages 15-18. The schools for the moderately retarded in Limassol and Paphos have sheltered workshops which together service approximately 37 persons aged 18 and above.

44. Eleven secondary level students are housed in a reform school in the city of Limassol. And, as mentioned earlier in this report, the maladjusted students are housed in regular school buildings. The only classroom for the maladjusted aged 15 to 18 is a small one-room building in the grounds of a regular school with elementary and secondary programmes. The ten children of this class do not participate in the activities of the regular school. This, of course, violates the basic concept of integration and has presented problems which warrant serious investigation and remedy. There are no secondary classes for the handicapped in the regular schools, even though the law stipulates their formation.

45. Research and development. Those who work directly with the handicapped and who also have research skills are just beginning to initiate some basic studies on an informal basis. One study concerns the incidence of Down's Syndrome in Cyprus. In addition, a more extensive child-find study is about to be launched throughout Cyprus, seeking the number of mentally retarded and maladjusted school-age children. Questionnaires, sent to regular schools to be completed by headmasters, headmistresses and teachers, will be an initial move towards identifying those children suspected of learning and/or behaviour problems.

II. CONCLUSIONS AND RECOMMENDATIONS

46. The education and training of the handicapped must be designed to provide opportunity for physical, social, emotional and intellectual growth in order that a maximum degree of independence and social adjustment may be realized. This purpose applies whether programmes are located in any of a variety of community settings, residential, non-public, public. Cyprus has made a decided commitment towards this purpose. It has taken some serious, important, initial steps in this direction by its recent legislation, its building programme, and its new appointment of an Inspector of Special Education. The following conclusions and recommendations are intended to facilitate the further organization of existing programmes and the implementation of new programmes.

47. Preparation of special education teachers. One of the most serious problems facing Cyprus is a severe lack of properly trained personnel to teach the handicapped. It is recommended that establishing teacher training programmes be among the top special education priorities. More effective and extensive manpower recruitment and training programmes for work with the mentally retarded and maladjusted are needed.

48. During meetings with the Committee on Special Education the consultant described the competency-based teacher education approaches used in many American universities and colleges. To serve as guidelines for future teacher education programmes in Cyprus she gave the Inspector of Special Education detailed copies of three such programmes:

(1) Special Education - undergraduate degree program
(2) Special Education - graduate degree program
(3) Reading Specialist Program (with a learning disabilities component) - graduate degree program
49. **Pre-service training.** Also discussed at these meetings was the possibilities of expanding the current programmes at the pedagogical academy to include a special education component. These alternatives were offered until such time as Cyprus has a degree-granting college or university.

50. It is recommended that those training in regular education have two or three courses in special education. Also, part of their practical experience should be with the handicapped. This is not only to provide knowledge of, and sensitivity towards, learning and behaviour problems, but to prepare the regular educators for the integration of the mildly handicapped which Cyprus plans for the near future.

51. It is recommended that at the pedagogical academy, those who will work exclusively with the handicapped be given a minimum of one year's training in special education beyond the three-year programmes presently offered at the pedagogical academy. Because many authorities believe that knowledge of the normal child is essential for working with the handicapped, most teacher education programmes consider certification in regular education as a prerequisite for special education. Such a programme could lead to dual certification.

52. **In-service training.** For those regular education teachers who wish to work with the handicapped in regular grades and for those already teaching classes of the handicapped but having no special education certification, it is recommended that summer courses and evening courses be offered.

53. It is recommended that those who have formal training and experience in special education form a committee and prepare seminars and workshops which they can present to small groups of teachers. A rotating lecture series approach could be used.

54. **Capabilities of special education teachers.** Rather than express the teacher education programme by listing course titles, competency statements are presented below for the special education component. The competencies have been arranged in order of complexity, beginning with those dealing with introductory information followed by those dealing with skills of higher order. The teacher must demonstrate knowledge of:

   (a) characteristics, prevalence, resources relevant to appropriate categories of handicapping conditions in general;

   (b) nature, needs and problems of specific groups of handicapped children;

   (c) systematic use of relevant techniques and approaches available for assessing handicapped children;

   (d) systematic use of relevant techniques and approaches available for teaching individual and groups of handicapped children;

   (e) development, organization and evaluation of instructional programmes for handicapped children;

   (f) construction, evaluation, adaptation and modification of instructional materials for the handicapped;

   (g) language and speech development;

   (h) classroom management techniques:

      (1) methods of motivation;

      (2) individualization of learning experiences;

      (3) grouping for effective instruction;

      (4) scheduling of activities;
(5) writing goals and objectives;
(6) continuous monitoring of pupil progress;
(i) effective communication with other professionals
(j) effective communication with parents of handicapped children;
(k) effective co-ordination of school and community resources to provide social, vocational, academic, and related learning experiences for the handicapped.

55. It is recommended that each of the above topics be the focus of one twelve-session seminar; each session being 2-2½ hours long. In addition a supervised practicum should complete this training programme.

56. **Programme instructors.** Persons with degree or diploma status in special education or a related field should be responsible for writing and implementing an organized plan of instruction for each of the above-mentioned competencies. Visiting professors from other countries should augment this staff of instructors on a regularly scheduled basis.

57. **Selection of teacher trainees.** It is recommended that:
   
   (a) there should be written criteria and procedures for admission to the programme;
   
   (b) the evaluation process should include techniques to measure teaching potential and should use appropriate measures to assess the intellectual, psychological, social and physical abilities of the trainees;
   
   (c) all referrals for the programme should be screened by personal interview and by review carried out by pertinent personnel;
   
   (d) trainees be selected on the basis of interest, aptitudes, and abilities as reflected by the above procedures and by adequate performance.

58. **Mainstreaming.** Special education has two obvious dimensions: (1) a developmental one in which the field is held responsible for the total education of more severely handicapped children from an early age and (2) a supportive one in which it serves to devise educational programmes for children with mild learning/behaviour problems assigned to a regular classroom. It acts as a catalyst to assist schools in modifying programmes to deal with a broad range of handicaps which impede the learning process.

59. The traditional role of the special educator has been that of a teacher of the handicapped in a self-contained classroom or special school. Special education classes have been segregated from the mainstream of regular education. The children enrolled therein have been grouped according to the traditional disability categories. The special educator has been responsible for conducting a programme of education almost parallel to the regular class programme but presumably specially tailored for handicapped children. This restricted concept of the role of the special educator has given way to broader and more varied ideas of the times, places, and goals of special education services.

60. Because Cyprus legislation has mandated that educational opportunities be made available to the handicapped aged 5-18, it now must begin implementing these experiences in all possible settings within the school environment.
61. The following is a proposed model for delivering services to the handicapped:

- Regular Classes
  - Outside facilities such as agencies, private schools, clinics, etc.

- Non-Categorical Resource Rooms
  - Categorical Resource Rooms or Itinerant Programme

- Self-Contained Classes

- Categorical Resource Rooms or Itinerant Programme
  - Mildly Mentally Retarded
  - Moderately Mentally Retarded
  - Learning Disability, Educationally Handicapped, Brain-Injured
  - Emotionally Disturbed
  - Visually Impaired
  - Auditorially Impaired
  - Physically Handicapped

- Speech
  - Remedial Reading
  - Auditorially Impaired
  - Visually Impaired

1. A non-categorical approach does not rely on traditional definitions of handicap but groups children according to specific learning/behaviour strengths and weaknesses.

2. For the categorical approach, traditional definitions of handicap are used;

3. Resource room is a classroom managed by a special educator who provides special programming for the handicapped, assigned there regularly but on a part-time basis.

62. Buildings. The schools which have been built recently for the moderately retarded are adequate in terms of number and size of classrooms, vocational areas, and home economics areas. The facilities are in need of (1) much larger pupil personnel-service areas including space for speech therapy, counselling, and individual instructions; and (2) indoor recreational areas for music, art, physical education.

63. No school has a properly constructed outside recreation area. There is either a complete lack of equipment or the equipment is too old or too inappropriate to be usable. It is recommended that the school staff take on a joint project with parents and voluntary organizations to develop such areas. There are many sources

which describe how to develop an outdoor recreational area specifically for the handicapped, using relatively inexpensive equipment.

64. Classrooms. The older schools and some of the classrooms for the maladjusted who are integrated into regular schools are very small. Regardless of the specific location, classrooms for the handicapped must be selected carefully. They should be large and pleasant. Special education authorities throughout such countries as the United Kingdom and the United States of America continually cite the importance to the handicapped of having more space, in order to facilitate adaptation to their limitations. The room must be large enough to permit the creation of interest centres and to house the wide variety of materials and equipment needed by the handicapped. It must not be placed in a dim, remote area of the school. It must be accessible to and by the needed personnel and facilities. It should be well lighted and contain plenty of closet space and a storage room. Such items as a full-length mirror, a sink or kitchen facilities, chalkboards, bulletin boards, bookcases, individual storage cubicles for each child and individual study booths are necessary. The room should be divided into centres around specific topics - reading area, maths area, science area, personal grooming area, etc.

65. Size of classes. Administratively most classes for the handicapped are (1) primary or level I (ages 6-8.9), (2) intermediate or level II (ages 9-11.9), (3) prevocational or level III (ages 10-15.9) and (4) vocational (ages 16+) for levels of instruction. The size of the class varies with the level and ranges from 6 children at the lower levels to about 12-15 at the upper levels.

Teacher-pupil ratio. It is recommended that more serious thought be given to teacher-pupil ratio in Cyprus. A ratio of two teachers (or a teacher and a teacher-aide) per 8-10 children will provide the individual social and educational attention needed in a programme for handicapped children.

66. Curriculum guidance. The teachers of the handicapped are in need of a carefully planned systematic approach to curriculum development. Guides, materials and equipment are greatly lacking. Curriculum approaches for education of the handicapped include behavioural task analysis, clinical prescriptive teaching and competency based instruction. Curriculum content for the handicapped should basically include self-help skills, communication skills, perceptual motor/physical education skills, functional academic skills and economic usefulness/vocational skills. Any curriculum guide, regardless of approach, should be detailed, developmental, sequential, and contain a measurement component.

67. Instructional media centre. In order to provide the special education teachers with guidance in curriculum development and materials selection, it is recommended that Cyprus establish an instructional media centre. Such a centre could gather, store and disseminate information to all types and levels of concern in handicapping conditions. It could provide a source of consultative assistance as needed and could be a source of information for those in any area of the country seeking programme help. It could serve by:

(a) acquiring and loaning professional and instructional materials for examination by teachers;

(b) offering consultation and guidance concerning the use of methods and materials;

(c) offering courses, institutes and workshops;
(d) developing materials specifically for the Cyprus culture(s);
(e) engaging in research and evaluation of materials and providing guidance in the assessment of materials.

68. This centre should be directed by a special education curriculum development specialist and be located within easy access to persons needing its services.

69. To use as initial guidelines for equipping this centre the consultant provided the Inspector of Special Education with the following:

(a) several extensive, comprehensive bibliographies of books and journals relative to many categories of handicapping conditions;
(b) approximately 35 sources from which to obtain materials;
(c) detailed guidelines for the systematic selection of instructional materials for the handicapped.

70. In addition, it is recommended that there be much more teacher input in the development of programmes for the handicapped. This could be done initially through a questionnaire designed to identify their needs and ideas. It should be followed up by meetings during which teachers could investigate theories of teaching the handicapped in general and then could develop curricula specifically for the handicapped in Cyprus.

71. **Interministry committee on the handicapped.** Although the direction that special education in Cyprus is taking is basically in accord with practices in many other countries, there is an acute shortage of manpower in all disciplines needed to serve the handicapped. Those persons who have professional skills to render to the handicapped are spread throughout all ministries. In order to use the existing personnel and programmes more fully and to facilitate any expansion and creation of new programmes, more effective and efficient co-ordination of all resources is needed. More handicapped persons could be more effectively served through such co-ordination. Therefore, it is recommended that Cyprus form an interministry committee on the handicapped. Its function would be to co-ordinate educational, psychological, health, financial, employment, rehabilitational, architectural, residential and transportational issues relating directly to the handicapped. Its general aims would be to:

(a) assure that all handicapped persons in Cyprus are receiving appropriate educational programmes and services;
(b) assure that each handicapped person receives career-education training relevant to the Cyprus job market, consistent with his career aspirations, and realistic as it relates to his maximum potential;
(c) consider enrolment of pre-school age handicapped children in education day-care facilities;
(d) assist the more severely handicapped to gain maximum independence and thus reduce the need for institutional care;
(e) provide for programmes of research and evaluation related to such services to determine (1) consistency with the application of the recent legislation, and (2) progress toward meeting goals;
(f) eliminate unnecessary duplication and overlap in programmes;
(g) prepare and provide information and data concerning the locations, provisions and availability of services and programmes for handicapped persons;
(h) ensure a sufficient supply of trained personnel so as to achieve the above objectives.

72. Membership of this committee should consist of a representative from:
   (a) each ministry;
   (b) each district committee on the handicapped;
   (c) appropriate parent councils;
   (d) appropriate school councils;
   (e) legal personnel when warranted.

73. District committees on the handicapped. As mandated by the recent legislation, each district in Cyprus must establish a committee on the handicapped. The duties of their committee are described in the law and are outlined on page 6 of this report. In keeping with these legal directives the following recommendations are made, with the aim of each committee developing facilities in its own district. The reason for this is that services for the handicapped are not made evenly available throughout Cyprus. The specific need for services in remote, low-income and disadvantaged areas is clearly evident. Under the management of an interministry committee on the handicapped, each district committee could more evenly distribute necessary services throughout its own region.

74. Added advantages in developing services and facilities in each district are:
   (a) case loads could be kept small so that rather than large facilities in urban areas serving a large number of clients, smaller facilities in each district could supply quality services in a more normal atmosphere;
   (b) close involvement of families could be maintained;
   (c) transportation difficulties, a problem in Cyprus, would be decreased;
   (d) identifying the number of handicapped would be made easier;
   (e) referral, assessments and placement would be facilitated;
   (f) evaluation of services could be more easily carried out.

75. Assessment. Assessment is a multidisciplinary process involving a variety of professional disciplines plus specific information from parents. Realistic planning for the handicapped requires a comprehensive assessment of the child's health, intellectual ability, adaptive behaviour, perceptual-motor skills, and speech and language development. The disciplines needed for such assessment may include school and clinical psychologists, social workers, educational specialists, speech, hearing and vision specialists, various medical specialists and physical and occupational therapists.

76. It is recommended that each district committee establish an interdisciplinary assessment team, not only to identify the number, kinds and degrees of handicapped persons but also to determine the kinds of immediate and projected programmes and facilities needed.

77. The very young handicapped. Since the number of certain categories of handicapped children is predictable with fair accuracy social, institutional and educational planning for the future must take into account the special needs of the handicapped. Until there is real progress in prevention, facilities for the handicapped should be a part of basic social service planning. The needs of those who may require full or part-time residential care in the future must also
be carefully considered. It is recommended that visiting nurses and social workers carry out a systematic child-find survey throughout each district in Cyprus to identify the pre-school age severely handicapped and the primary age moderately handicapped.

78. Also, it is recommended that the existing nursery and kindergarten classes be surveyed to identify children who may have learning and/or behaviour problems.

79. In both approaches, early identification with subsequent proper programme placements allows opportunities for the young handicapped child to receive the sensory-motor, social, language training he needs and may lessen the future detrimental effects of the handicapping condition. An additional, highly important benefit in the identification of pre-school and young primary age handicapped is the possibility of early parental involvement and meaningful parent education.

80. School-age handicapped. When a handicapped child is placed in a special education programme, careful attention must be made to the assessment data. Although the classifications of handicapping conditions are often arbitrary and in most cases multi-handicaps exist, no child should be placed in a programme totally unsuited to him. The mildly mentally retarded or the maladjusted and severely psychotic children with normal or above average intelligence should not be placed in classes for the moderately retarded.

81. Each district committee, taking into consideration the various kinds and degrees of handicapping conditions, should strive to establish in its respective region a hierarchy of special education programmes. Accordingly, a handicapped child could conceivably receive:

(a) regular classroom placement with special education consultance to a regular education teacher;
(b) regular classroom placement with direct assistance to the child by a special educator on a regularly scheduled basis;
(c) regular classroom placement with regularly scheduled hours in a resource room conducted by a special educator;
(d) part-time special classroom placement with integration from time to time in a regular class;
(e) full-time special classroom placement;
(f) special day-school placement;
(g) residential placement.

82. It is recommended that a systematic way of moving a handicapped child from class to class, school to school, and level to level be established. It must be a dynamic system, allowing the child freedom to be moved to a more appropriate educational environment when warranted.

83. Adult handicapped. Providing skills that contribute to economic usefulness or vocational success is one of the major goals of the total curriculum for the handicapped. Skills of economic and vocational usefulness are vital and necessary whether the handicapped will remain at home, work in a workshop-activity centre, or live in a residential setting.

84. The group needing immediate attention is the older maladjusted. It is recommended that combined educational/vocational programmes be established for them on the secondary school level. In addition, for those adult maladjusted who
cannot function successfully in the community, appropriate workshop placement must be considered.

85. While workshops for the mentally retarded exist in Cyprus, they have the following difficulties:

   a) the number of workshops does not meet the demands of the number of clients;

   b) they are at a distance and transportation is difficult;

   c) they are poorly equipped;

   d) they do not have sufficient staff;

   e) they lack meaningful on-the-job vocational tasks.

86. It is recommended that a work study counsellor(s) be employed for those retarded in a workshop settings.

   a) the function of this counsellor would be to examine the actual job possibilities throughout Cyprus for the retarded - industrial, agricultural, service, etc;

   b) consult with potential employers of the retarded to learn specific job positions and skills and to educate employers as to the characteristics of the potential employee;

   c) advise the training staffs at the vocational training sites as to the specific skills that need to be learned for specific jobs;

   d) place the retarded in appropriate jobs;

   e) conduct follow-up to prevent job adjustment problems;

87. Boarding houses. The currently existing boarding houses for the handicapped are operated by charitable organizations and/or parent groups. Legislation now dictates that the government assume responsibility for these facilities.

88. It is recommended that each boarding house be managed by a professional, full-time administrator who can co-ordinate all residential, educational, recreational, vocational, professional, personal, financial, transportational, and staffing issues.

89 It is recommended that boarding houses be kept small and as home-like as possible. Dormitory-type sleeping arrangements should be avoided.

90. It is recommended that immediate attention be given to providing both indoor and outdoor recreational equipment for the boarding house in Limassol.

91. It is recommended that a volunteer recruitment programme be carried out to get more one-to-one contact for the clients in this boarding house. A training programme should be prepared for any potential volunteer. He should be expected to go through this training programme before he works with the clients. This approach would maintain consistency of treatment for the clients.
92. The need for ancillary services. Providing for the handicapped requires more thoroughness and consideration than has been assumed in the past. A variety of support personnel is needed to assist the educator in any serious planning for the handicapped. The lack of such support personnel in Cyprus is crucial.

93. It is recommended that members of the following disciplines be employed to work exclusively with the handicapped:

(a) school psychologists;
(b) speech therapists;
(c) physical therapists;
(d) occupational therapists;
(e) recreational therapists;
(f) vocational counsellors;
(g) curriculum specialists;

94. The number of the above-mentioned personnel needed would depend on the case load deemed feasible for a professional in each discipline (e.g. the school for moderately retarded in Limassol is large enough to have a full-time psychologist, speech therapist, recreational therapist).

95. Residential settings for the severely handicapped. Current world trends of residential institutions include:

(a) efforts to return some of the community;
(b) a decrease in overall size of institutions;
(c) an increase in the more severe levels of handicapping conditions;
(d) an increase in parental involvement;
(e) an overall effort at reducing dehumanizing conditions caused by understaffed and underfinanced institutions.

96. For those in Cyprus requiring residential placement it is recommended that each district committee establish small, intensive treatment units. Accordingly then, using this approach:

(a) there should be a small number of residents (less than 100);
(b) all except the most severe cases should spend 1 or 2 days a week in the community;
(c) there should be a flexible, open-door policy regarding services and relatives.
(d) trained professionals should be made routinely available for the needed specialized services;
(e) every resident should receive extensive intervention treatment;

97. Advisory boards for parents of the handicapped. The professional worker who serves the handicapped, whether his discipline is education, social work, psychology, medicine, rehabilitation, can no longer ignore the importance of counselling services to parents, and in many instances, to the individual handicapped. Major types of counselling services in handicapping conditions include genetic counselling, parental counselling, and counselling the handicapped. There are very few of these services in Cyprus.
98. It is recommended that each district form an advisory board whose function is to provide the counselling that will assist parents of the handicapped to:

(a) accept their reactions to their children;
(b) seek proper diagnosis and placement;
(c) seek genetic counselling when appropriate;
(d) cope with the demands placed on the family by the handicapped;
(e) cope with any additional financial burden resulting from having a handicapped child;
(f) cope with any limitations of family mobility as a result of having a handicapped child.

99. As a guideline the consultant has made available to the Inspector of Special Education a book from the United States describing the organization, personnel, duties and functions of committees on the handicapped.

100. Roles of parents of the handicapped. The already existing strong, active group of parents of the handicapped can play a major role in getting more parents of the handicapped involved in fostering quality services for their children. This can be done by:

(a) creating an information materials service which keeps parents informed as to recent actions and decisions which might effect the welfare of the handicapped;
(b) holding workshops on such topics as sex education, vocational education, legal rights, social benefits, medical and psychological aspects of handicapping conditions, etc;
(c) supporting medical, psychological and social research concerning the handicapped;
(d) supporting the establishment of pre-school and post-school services for the handicapped;
(e) supporting the development of special education teaching training programmes in Cyprus;
(f) providing, with the help of philanthropic organizations, scholarships for teachers to study special education;
(g) supporting the enactment of appropriate legislation for the handicapped;
(h) promoting public understanding and community support through public media;
(i) holding interprofessional public forums for discussion of major issues concerning the handicapped;
(j) making a conscious effort to reach the parents of the handicapped in the remote areas of Cyprus.

101. Research projects. It is recommended that a research and development team consisting of statisticians, psychologists, social workers, medical people, etc., be formed for the purpose of:

(a) conducting case-finding surveys in various communities of Cyprus to locate handicapped persons requiring services;
(b) conducting studies to determine how the service needs of the handicapped
are or are not being met;
(c) establishing a priority list of services required, based upon the needs
identified;
(d) assessing all available and potential resources;
(e) conducting research into developments bearing on handicapping conditions
in Cyprus relative to their causes, prevalence, prevention, amelioration, cure.

102. Classes for the maladjusted. The Inspector of Special Education requested the
consultant to evaluate the classes for the maladjusted. Below is a report of
that evaluation.

103. Classes for the maladjusted were visited by the consultant and the headmistress
from 11 to 16 February 1980. Currently all such classes are housed in normal
schools. Individual discussions were held with the special education teachers and
with the administrators in each school. A seminar was held with all special
educators of the maladjusted on 16 February 1980, during which the following
recommendations were made:

104. A child placed in such a class should have a maladjustment problem which has
been determined by a school psychologist, an approved mental health clinic,
or a psychiatrist. The condition should be of psycho-social origin leading to
behaviour which interferes with the child's ability to adjust to and benefit from
existing regular class placement. This ordinarily implies normal or above
intellectual potential, even though the child may not be performing at this
capacity. Those children whose prime difficulty is true mental retardation and
who may also have an emotional problem should be assigned to classes specifically
designed for them. Classes for the maladjusted should hold children who have
average or above intelligence and who may have educational difficulties. This
should be kept in mind when assigning children to special classes. Also, when
programming for such children one must keep in mind the level of maladjustment.
For those children who have mild and moderate psychological-social problems and
who have normal or above intelligence, placement in a regular school is advised.
It is assumed that these children will be able to make relatively adequate
adjustment in adult life and will eventually be able to develop sufficient indepen-
dence. Their problems call for as much exposure to a normal educational situation
as possible.

105. For those children whose maladjustment is such that there is a serious lack
of contact with reality and whose chance of independence is poor, a special
day school may be a more appropriate setting. As yet there is no such facility
in Cyprus and it is strongly suggested that serious consideration be given to
establishing one. It should be a typical school building and not merely a one-room
facility. It should have all the necessary space for not only classrooms but
administrative and ancillary staff.

106. Thought should be given to changing the teacher/pupil ratio. Currently there
is one teacher to 10-12 children. It is customary in other countries to have
two fully trained teachers in classes for the maladjusted. Also, in order to bring
better services to children and to develop a sense of co-operation in the special
education teachers, it is recommended that two or three classes be established in
each normal school. Teachers would be better able to render a greater variety of
services to the children and provide a more organized system of integration into
the regular classroom.
107. The chronological age-range in the classes observed is much too wide. If more than one special class was established the children could be divided according to chronological age, thus allowing more homogeneous grouping. An advanced procedure could be established with the children being "promoted" to the next group.

108. Establishing classes for the maladjusted on the secondary level is imperative. As Cyprus has committed itself to educating these students, it must provide properly integrated programmes for them in the secondary schools. Those students who are currently on secondary level are not being effectively mainstreamed.

109. The special classroom should not be used as a storage room for the unused equipment of the school. In one case the special class was placed in the same room with a home economics class. This is a situation which violates every known concept of good education for the handicapped. It needs immediate remedy.

110. There is a great lack of equipment and materials for these classes. The teachers are left to their own devices to develop teaching materials for the children. Although one can expect some of this, there must be materials which provide the developmental guidelines in visual, auditory, kinesthetic, number, language and social learning. The children work too much in notebooks with teacher-prepared assignments which are not based on developmental scales and sequences. Curricula in each area of study must be prepared for the maladjusted from the first class through the secondary level classes.

111. The maladjusted do not receive the continuous psychological assistance they so desperately need. With the existing eight classes surely to be added soon, it is not unthinkable to have a full-time psychologist assigned just to the classes for the maladjusted.

112. The teachers who are currently teaching the maladjusted meet once a week to discuss their immediate problems. This should be continued. Another weekly session should be held in which in-service training occurs. Discussions on the most recent theories and techniques of teaching the maladjusted would be the purpose of the second meeting. The group as a whole was very open to this.

113. The programme has grown to the extent that the headmistress must have a full-time non-teaching deputy to assist her with the responsibilities of child-placement, in-service teacher training, parent counselling, curriculum development, mainstreaming and transportation.

114. There is a strong, cohesive group among the parents of the maladjusted. The consultant met with some of them and recommended that they exert their energies in urging the government to establish an array of educational and psychological services for the maladjusted, in obtaining funds for classroom and playground equipment, in encouraging the development of a special education teacher training programme in Cyprus.

115. An all-out effort must be made throughout Cyprus to bring the recent law on educating the handicapped to public attention, with a clear explanation of its ramifications and implementation. Seminars should be held for normal school administrators and teachers on the integration of these maladjusted children.
APPENDIX A

VISITS, MEETING AND SEMINAR DATES

(9 January to 7 May 1980)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 11</td>
<td>Visit to school for moderately retarded, Nicosia.</td>
</tr>
<tr>
<td>14</td>
<td>Meeting with Chairman, Department of Primary Education.</td>
</tr>
<tr>
<td>16</td>
<td>Visit to school for moderately retarded, Limassol.</td>
</tr>
<tr>
<td>18</td>
<td>Visit to school for moderately retarded, Paphos.</td>
</tr>
<tr>
<td>21</td>
<td>Visit to school for moderately retarded, Larnaca.</td>
</tr>
<tr>
<td>22</td>
<td>Meeting with UNDP staff.</td>
</tr>
<tr>
<td>23</td>
<td>Meeting with Committee on Special Education, Ministry of Education.</td>
</tr>
<tr>
<td>24</td>
<td>Meeting with General Director, Ministry of Education.</td>
</tr>
<tr>
<td>25</td>
<td>Visits to three regular schools in Limassol.</td>
</tr>
<tr>
<td>30</td>
<td>(a) Meeting with Minister of Education.</td>
</tr>
<tr>
<td></td>
<td>(b) Visit to Rehabilitation Centre for Physically Handicapped.</td>
</tr>
<tr>
<td>February 1</td>
<td>(a) Meeting with Inspector of Special Education (concerning teaching materials for the handicapped).</td>
</tr>
<tr>
<td></td>
<td>(b) Meeting with Committee on Special Education, Ministry of Education.</td>
</tr>
<tr>
<td>2</td>
<td>Meeting with school psychologists.</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Evaluation visits to school for moderately retarded, Nicosia.</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Evaluation visits to school for moderately retarded, Limassol.</td>
</tr>
<tr>
<td>11-16</td>
<td>Evaluation visits to classes for maladjusted.</td>
</tr>
<tr>
<td>14</td>
<td>Meeting with parents of the maladjusted.</td>
</tr>
<tr>
<td>19</td>
<td>Evaluation visit to school for moderately retarded, Larnaca.</td>
</tr>
<tr>
<td>21, 22</td>
<td>Evaluation visits to school for moderately retarded, Paphos.</td>
</tr>
<tr>
<td>25-March 1</td>
<td>In office for preparation of seminars.</td>
</tr>
<tr>
<td>March 3-7</td>
<td>Presentation of first seminar to special educators.</td>
</tr>
<tr>
<td>10, 12, 14</td>
<td>Presentation of advanced seminar to special educators.</td>
</tr>
<tr>
<td>17, 19, 21</td>
<td>Visit to vocational school for mentally retarded, Nicosia.</td>
</tr>
<tr>
<td>19</td>
<td>Meeting with parents of handicapped.</td>
</tr>
<tr>
<td>24</td>
<td>Visit to boarding house for moderately retarded, Limassol.</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>March</td>
<td><strong>Presentation of seminar on special education to regular education teachers.</strong></td>
</tr>
<tr>
<td>26,27,28</td>
<td>Visit to school for the blind, Nicosia.</td>
</tr>
<tr>
<td>April</td>
<td>In office for preparation of seminar.</td>
</tr>
<tr>
<td>8-12</td>
<td>Meeting with UNDP personnel.</td>
</tr>
<tr>
<td>10</td>
<td>Meeting with UNDP personnel.</td>
</tr>
<tr>
<td>12</td>
<td>Presentation of second seminar for special educators.</td>
</tr>
<tr>
<td>14,16,18</td>
<td>Visit to school for the deaf, Nicosia.</td>
</tr>
<tr>
<td>21,24,25</td>
<td>Visit to institution for severely handicapped, Nicosia.</td>
</tr>
<tr>
<td>17</td>
<td>Meeting with Committee on Special Education, Ministry of Education.</td>
</tr>
<tr>
<td>23</td>
<td>(a) Visit to reform school, Limassol.</td>
</tr>
<tr>
<td>25</td>
<td>(b) Visit to residential centre for severely handicapped, Limassol.</td>
</tr>
</tbody>
</table>
APPENDIX B

REFERENCES


Kephart, N.C. *The Slow Learner in the Classroom*. Columbus, Ohio: Charles E. Merrill, 1971.


LECTURE NOTES, OUTLINES AND ASSESSMENT CHECKLISTS

Lectures and discussions were based on the following topics with presentations adjusted according to each group of participants. Each special educator received a copy of the printed information. Each regular educator who attended the special education introductory seminar received copies of appropriately selected papers.

(a) The Preparation of Teachers: Some Crucial Needs and Issues
(b) Curriculum Approaches
(c) Assessing Individual Differences in Handicapped Children
(d) Teacher's Checklist: Instructional Management
(e) Causes of Mental Retardation
(f) Symptomatology - Identification of the Child
(g) Defining Mental Retardation
(h) Definitions of Retardation
(i) Perceptual Motor Processing
(j) Gross Motor Evaluation
(k) Motor Development - Normal
(l) Visual and Auditory Processing (based on Illinois Test of Psycholinguistics)
(m) Pupil Behaviour Rating Scale
(n) Behavioural Objectives Sequence (in various skill areas)
(o) Normal Stages of Social-Emotional Development
(p) A Teacher's Checklist for Emotional Disturbance
(q) Behaviour Modification
(r) Four Basic Types of Behaviour (for maladjusted)
(s) A Taxonomy of Behaviour Modification Techniques
(t) Teacher Rating Scale: Affective Competency Scale
(u) The Systematic Selection of Instructional Materials Based on an Inventory of Learning Abilities and Skills
(v) Profile Development - for Educational Remediation
(w) Communication Problems - Normal Stages in the Development of Verbal Communication
(x) Continuous Pupil Progress Profile in Reading
(y) Reading: Assessing Reading Problems
(z) Reading Readiness Checklist
(aa) Behavioural Objectives - Reading
(bb) Arithmetic (notes on Piagetian approach)
(cc) Problems with Symptomatology
(dd) Skills to be Acquired in an Elementary Mathematics Programme
(ee) Arithmetic Facts and Processes
(ff) A Piagetian Conceptualization of Cognitive Objectives
The growth of special education in Cyprus, along with the recent legislation, has created a demand for personnel. Consequently, the Inspector of Special Education requested that the consultant attend primarily to the task of conducting training seminars for teachers.

Planning the seminars. The following schedule was agreed upon by the Inspector of Special Education and the consultant:

(a) two one-week seminars for all those teaching the mentally retarded or the maladjusted;
(b) an advanced one-week seminar for all those having formal training in special education;
(c) a three-day seminar for regular education teachers.

Content of the seminars. After three weeks of on-site evaluations of the classes for the mentally retarded and the maladjusted, the consultant decided to conduct the seminars around the following topics:

(a) characteristics of special education teachers;
(b) causes of handicapping conditions (emphasis on mental retardation and maladjustment);
(c) definitions of mental retardation and maladjustment;
(d) curriculum approaches to the handicapped;
(e) assessment of:
   (1) sensory-motor processing;
   (2) visual processing;
   (3) auditory processing;
   (4) language;
(f) classroom management techniques;
(g) basic principles of teaching reading and arithmetic to the handicapped.

Materials for the seminars in the form of packets of lecture notes, outlines and assessment checklists were prepared for, and handed out at, each session.

Characteristics of special education teachers. Because of the unique learning characteristics of the handicapped and the substantial alteration required in the basic objectives of the school programme, it is necessary for a teacher to receive special clinical and remedial preparation. Moreover, it would seem desirable that the special education teacher exhibit certain personal traits. In addition to those traits desired of a good teacher of normal children which result in a classroom environment conducive to effective learning, a teacher of the handicapped must be
satisfied with demonstrations of a small amount of learning and behavioural change at any given time. Often it will take longer for a handicapped child to learn a concept or fact, and a lesson will need to be repeated several times, in a variety of ways, and using many sense modalities. Children will forget quickly, and the teacher will need to review and repeat material. Many teachers find this situation difficult to tolerate, perhaps because of a personal need to see dramatic changes in behaviour and intellectual growth on the part of the students. To press students for a performance beyond their present level of capabilities because of a desire to see more dramatic change is inconsistent with good teaching strategy for the handicapped.

Flexibility is a second important characteristic for the teachers of the handicapped. Teachers must be able to switch quickly from one method of instruction to another when a child exhibits difficulty in learning a concept. Frequently it is necessary to abandon a lesson plan and return to the students' earlier level of skill development, when it is obvious that more work is needed in a necessary foundation area. Not to adapt instruction spontaneously will result in ineffective teaching and the development of negative feelings towards the total school programme.

Adequate preparation for teachers of the handicapped include the following types of experience and understanding:

A stable and comprehensive philosophical point of view should be developed which considers:

1. individual differences;
2. the value of the individual;
3. the place of the handicapped in society;
4. reasonable goals and expectations in training and educating the handicapped;
5. the relationship between conceptual and rote understanding of the handicapped.

The teacher needs to have a firm understanding of appropriate objectives and goals which are sensitive to the common characteristics of the different levels of handicap, as well as to the unique characteristics of each handicapped child. A sensitivity to and a concern for educationally significant individual differences should be focused upon a teacher education programme.

Teachers of the handicapped should have a complete understanding of some of the basic theoretical positions against which classroom practices and techniques can be evaluated. Theories chosen should be sufficiently broad in scope to include areas concerning appropriate sequencing of activities and those foundation skills basic to efficient and effective learning.

Teachers of the handicapped should have some sensitivity to and minimal skill in elementary and informal educational diagnostic procedures appropriate to the classroom. The teacher must constantly assess a child's performance and alter the mode of instruction, materials and curriculum according to each child's pattern of strengths and weaknesses.

Since the teacher of the handicapped is interested in manipulating a child's environment in order to provide the best conditions for learning, there is needed, first, an awareness of what constitutes an ideal environment for learning and,
second, an understanding of techniques available for effecting such environmental conditions. It is possible to view the manipulation of the child's environment from a general perspective (for example, the total special class environment) as well as in terms of a specific technique for organizing materials and the instructional strategy for teaching (for example, discrimination among shapes).

Teachers should be provided with an opportunity to develop basic skills in interpreting and translating research findings from various disciplines into practical classroom activities.

Causes of handicapping conditions. Three taxonomies were used as bases for discussion on etiology. The first is from the American Association on Mental Deficiency:

The causes of mental retardation are numerous and could be the result of single or multiple factors. The mildly retarded whose IQ scores are in the 50 to 75 range, represent 80 per cent to 85 per cent of the retarded. The majority of these cases have no demonstrable brain pathology and often come from impoverished backgrounds. The majority of moderately retarded IQ 25 to 50 have medically related causes. A medical classification offered by the American Association on Mental Deficiency follows:

A. Infections and intoxications
   (a) Prenatal infection
   (b) Postnatal cerebral infection
   (c) Intoxication

B. Trauma or physical agents

C. Metabolism and nutrition
   (a) Neuronal lipid storage disease
   (b) Carbohydrate disorders
   (c) Amino acid disorders
   (d) Nucleotide disorders
   (e) Mineral disorders
   (f) Endocrine disorders
   (g) Nutritional disorders
   (h) Other

D. Gross brain disease (postnatal)
   (a) Neurocutaneous dysplasia
   (b) Tumours
   (c) Cerebral white matter (degenerative)
   (d) Specific fiber tracts (degenerative)
   (e) Cerebrovascular system
   (f) Other

E. Unknown prenatal influences
   (a) Cerebral malformation
   (b) Craniofacial anomaly
   (c) Status dysraphicus
   (d) Hydrocephalus
(e) Multiple formations
(f) Single umbilical artery
(g) Other

F. Chromosomal abnormalities

G. Gestation disorders

(a) Prematurity (before 37 weeks from the first day of the last menstrual period)
(b) Small for date (full-term but weighing 5 pounds 8 ounces or less)
(c) Postmaturity (exceeding the normal gestation period by 7 days or more)
(d) Other

H. Following psychiatric disorder

Environmental influences

(a) Severe due to severe deficit of special senses
(b) Sensory deprivation
(c) Severe stimulus deprivation
(d) Other

Other conditions

The second taxonomy is from the child developmentalists Arnold Gessell and Catherine Amatruda:

Six broad aspects of neuropsychiatric disability

1. Mental subnormality
2. Cerebral palsy
3. Convulsive disorders
4. Peripheral and/or central sensory deficit
5. Emotional disturbance
6. Central nervous system dysfunction

Etiological classification

Genetic

1. External trauma
2. Low birth rate
3. Malformation
4. Maternal infection
5. Maternal irradiation
6. Maternal malnutrition
7. Other complications during pregnancy
8. Placental defects
9. Seasonal and geographic factors
10. Social-economic factors
11. Stress
Perinatal factors

1. Anorexia
2. Crushing or laceration of central nervous system tissues
3. Haemorrhage
4. Hyperbilirubinemia (Rh factor)
5. Other neonatal disorders

Postnatal factors

1. Degenerative and neoplastic diseases
2. Infection
3. Intoxication
4. Malnutrition
5. Maternal deprivation
6. Socio-cultural and educational impoverishment
7. Trauma

The third taxonomy has been compiled from learning disabilities specialists, who give the following as causes of educational dysfunction:

I. The child's own make-up (internal)

A. Constitutional problems (predetermined or present at birth)

1. Hereditary (gene aberrations)
2. Genetic (genetic combinations)
3. Congenital (genetic and environmental - e.g. allergies)

B. Constitutional problems (acquired after birth)

1. Perinatal problems
2. Infection
3. Toxics and poisoning
4. Nutritional
5. Injury
6. Emotional (from within the child)
7. Other severe illness
8. Miscellaneous (idiopathic - no specific cause identified)

C. Description of "specific" categories

1. "Diagnostic" categories:
   (a) subnormal intelligence
   (b) physical deformities
   (c) growth problems
   (d) disorders of special senses (hearing, visual)
   (e) language disorders
   (f) convulsive or seizure disorders
   (g) specific neurological disorders
      (1) cerebral palsy
      (2) neurological "hyperkinetic" disorder
      (3) specific learning disability (dyslexia)
      (4) "perceptual" disorders
   (h) maturational delay
2. Symptomatic categories

Groups of behaviour or symptoms that seem to occur in clusters in various children.

II. The child's environment (external)

A. The school
B. Cultural and environmental difficulties
C. Emotional disorders (from without)
D. Illness
E. Miscellaneous (motivation, attitude)

Defining mental retardation. Systematic examination of the nature of intelligence started with Binet and Simon in the 1890's. They attempted to find characteristics which were related to intellectual adequacy. Up to this time the bright and dull were compared on physical characteristics. Binet and Simon switched their questions to "what they could do". They presented tasks which required the use of "judgement" for successful completion (1904-1905).

In 1912 J. Shaw Bolton distinguished between two types of mental retardation:

Primary amentia: attributable to causes operative on the fertilized ovum and resulting in an insufficiency of neuroblasts and neurons

Secondary amentia: those cases where the causative factor is to be sought at, or after birth

At this time no causative agent was identified.

In 1913 the English Mental Deficiency Act gave their definitions:

Idiot: persons in whose case there exists mental deficiency which is so pronounced that they are incapable of managing themselves or their affairs or (in children) of being taught to do so.

Feeble-minded persons in whose case there exists mental deficiency so pronounced that they require care, supervision and control for their own protection and for the protection of others, or (in children) that they appear to be permanently incapable of receiving proper benefit from instruction in ordinary schools.

For the first time mental retardation was considered in the light of social consequences or adaptive behaviour and that behavioural control rather than intellectual inadequacy assumed dominance.

Expansions of the definition followed. Tredgold (1922) proposed:

(1) amentia due to inheritance
(2) amentia due to environmental causes
(3) amentia due to both heredity and environment
(4) amentia without discernible cause
He suggested specific factors of genetic make-up; deprivation (presumably sensory) trauma; and infection.

In 1929 (from England): the only really satisfactory criterion of mental deficiency is the social one, and if a person is suffering from a degree of incomplete mental development which renders him incapable of independent social adaptation and which necessitates external care, supervision and control, then such a person is a mental defective.

Doll (1941) continued the theme of social incompetence further: the mentally deficient person is (1) socially incompetent and occupationally inadequate and unable to manage his own affairs (2) mentally subnormal (3) retarded intellectually (4) retarded at maturity (5) mentally deficient as a result of constitutional origin through heredity or disease (6) essentially incurable.

Sarason (1955): mental retardation refers to individuals who, for temporary or long standing reasons, function intellectually below the average of their peer groups but whose social adequacy is not in question. In rejecting the social adequacy criterion Sarason raises the question again of quantitative versus qualitative intellectual functions. He differentiates between the mentally retarded and the mentally deficient: He suggested that mental retardation is a quantitative difference subject to improvement and that mental deficiency is a qualitative difference not readily ameliorable. He sees them as belonging in discrete groups. In short, an individual has been identified as mentally retarded when he consistently (over a period of several years) earns a low score on a test which yields an IQ, provided the low score is not the product of poor motivation, sensory deficit, emotional problems, motor incoordination, language problems, or based on a culture to which he has not had the same exposure as his peers. The persistent theme of "ability to reason" permeated nearly all of the early thinking and has recently been suggested again by Jensen (1969) as a synonym for high intelligence.

Spearman (early 1900's) was the first to suggest that intelligence was not a unitary thing:

(1) a "g" factor (general factor) in which individuals differed by a quantitatively measurable amount;

(2) an "s" factor (specific factors); for example, social judgement, motor ability, non-verbal abilities;

Thurstone (1938) through factor analysis of about 32 different tests identified five primary mental abilities: reasoning, memory, space, arithmetic, word fluency.

Guilford (1968) extended the factors of Thurstone and proposed a model of the structure of intellect:

(a) five processes - memory, cognition, convergent thinking, divergent thinking, and evaluation;

(b) four content - figures, symbols, semantics, behaviours;

(c) six products - units, classes, relations, systems, transformations, implications.

The departure of Piaget from the work of previous psychologists is most notable because he rejects the assumption of intelligence as a quantitative construct. He emphasizes that each stage in intellectual development is characterized by qualitative changes in thinking. From the early sensory-motor exploration of the environment up to the concrete operational level, the child deals with "what is".
At the formal operational level he is able to deal with "what might be". It would seem that the mentally retarded do not display this quality of becoming conversant with the possible. And the research on the concept of mental age indicates a delay, in the mentally retarded, in the age at which their thought processes appear. The sensory-motor stage for the retarded may extend a year or two longer than the usual age of two. Succeeding stages may require an extra year or two for development. If this is so, then:

intelligence is fundamentally a neuro-physiological capacity to develop more complex thought processes as a function of maturation and environmental interaction; and

mental retardation is a condition of intellectual arrest at some level below Piaget's level of formal thought; and

mental retardation is a diminished efficiency of the central nervous system which results in a limited capacity for the formation of cell assemblies, intercellular and super-ordinate associations and a consequent reduced ability for perceptual and conceptual integration.

Advantages of this definition:

(1) it accommodates all the known causes of the condition; medical, genetic, environmental and dietary; it is the level of thinking, not the causes of the intellectual arrest, which is the core of the condition;

(2) the various degrees of mental retardation can be ordered by the kind of thought-processes demonstrated:

(a) at the most severe level, thinking would be confined to goal-oriented behaviour, object permanence and sign and symbol systems;

(b) at a more moderate level, the individual can order by one dimension, use a symbol system for communication, be aware of form constancy; but is limited in cause-effect relationships to consequence or coincidence rather than principle;

(c) at a mild level, the individual can use the intellectual processes of form constancy, class inclusion, serial ordering by two dimensions, and reversibility. His thinking is still limited to "what is";

(3) the definition has the distinct advantage of not dealing with social behaviour. By attending to intellectual complexity, we relegate social behaviour to the area of learned behaviour;

(4) it emphasizes the kinds of thinking which the mentally retarded can perform rather than those they cannot;

(5) it implies an orderly sequence of development of successively more complex thought-processes as they apply to the acquisition of skills and content. Thus, a curriculum guide of a developmental nature which emphasizes positive abilities is provided. Teachers can concentrate on course content consistent with the thought processes of the children so that both methods and materials are relevant to what the child can do.
Defining maladjustment

Several commonly used definitions of the maladjusted follow:

(a) a moderate to marked reduction in behavioural freedom which results in:

1. an inability to learn which cannot be explained by intellectual, sensory, neurophysiological, or general health factors;
2. an inability to build or maintain satisfactory interpersonal relationships with peers and teachers;
3. inappropriate or immature types of behaviour or feelings under normal conditions;
4. a general pervasive mood of unhappiness or depression;
5. a tendency to develop physical symptoms, such as speech problems, pains, or fears, associated with personal or school problems. (Bower and Lambert, 1971);

(b) a child is maladjusted when his behaviour is so inappropriate that regular class attendance:

1. would be disruptive to the rest of the class;
2. would place undue pressure on the teacher;
3. further the disturbance of the child himself (Pate, 1963);

(c) maladjustments are defined as a variety of excessive, chronic, deviant behaviours ranging from impulsive and aggressive to depressive and withdrawal acts:

1. which violate the perceivers' expectations of appropriateness;
2. which the perceiver wishes to see stopped (Graubard, 1973);

(d) A maladjustment is that behaviour of a child which:

1. has a detrimental effect on his development and adjustment;
2. interferes with the lives of other people (Kirk, 1962);

(e) one who because of organic and/or environmental influences, chronically displays:

1. inability to learn at a rate commensurate with his intellectual, sensory-motor and physical development;
2. inability to establish and maintain adequate social relationships;
3. inability to respond appropriately in day-to-day life situations;
4. a variety of excessive behaviour ranging from hyperactive, impulsive responses to depression and withdrawal (Maring, 1963);

(f) the child who cannot or will not adjust to the socially acceptable norms for behaviour and consequently disrupts his own academic and interpersonal relations, as well as the learning efforts of his classmates. (Woody, 1969).

Curriculum approaches. Educational provisions for the handicapped have developed at a rapid rate in the past few years. Currently, the three main instructional approaches are (1) behaviouristic task analysis, (2) clinical-prescriptive teaching and (3) competency-based instruction.

The behavioural approach is concerned with the analysis of a task, the specific behavioural objectives contained in the task, and direction of a child in reaching the objectives. This approach gives major emphasis on defining and measuring specific educational tasks to be taught. The underlying philosophy of behaviourist task analysis is as follows:

1. educational objectives must be stated in a series of specific tasks;
2. all teaching activities must come from the stated tasks;
3. every concept needed for the successful performance of the task must be stated;
4. each teaching activity must allow one and only one interpretation;
5. the programme should be designed so that one new concept at a time is learned;
6. the teacher must infer from the child's performance whether he mastered the task or not; the teacher must provide appropriate remediation for children who have developed misconceptions or who have formed inadequate conceptions;
7. the programme must be evaluated in terms of whether or not the child can perform the tasks stated in the series.

In order to establish a curriculum within this approach the teacher:

1. must specify terminal objectives in behaviouristic terms, that is, he must write the required performance in observable response terms;
2. must analyse these responses and divide them into a series of less complex responses;
3. must arrange the responses necessary for the completion of a task in a series;
4. must teach or verify the existence of the student's ability to perform each task in the series;
5. must teach the student to perform each task in serial order;
6. must record the student's performance during each training period so that adjustments can be made in the teaching process.

The clinical-prescriptive approach relies on extensive diagnosis, an educational prescription written from the diagnosis, and continuous evaluation and modification. Clinical teaching can be viewed as a cycle. The phases of the cycle are: (1) diagnosis, (2) planning of the teaching task, (3) implementation of the teaching plan, (4) evaluation of student performance, leading to, (5) a modification of the diagnosis. Included in this approach is the deliberate manipulation of the following six environmental factors in the learning situation:

1. space - the physical setting or work space. An attractive, non-distracting room is necessary;
2. time - the length of a lesson for a child with a very short attention span; short lessons are needed;
(3) multiplicity variables - the number of factors a child can manipulate in a task; included are the number of pieces of work, extraneous material, and modality channel (visual, auditory, etc.,);

(4) difficulty of the tasks involved - the key here is to present challenging tasks but within the present ability level;

(5) teacher's language - communication by the teacher should be direct, simple and meaningful; it may be helpful to touch or maintain visual contact when talking;

(6) the interpersonal relationship factor - rapport between teacher and child. The clinical-prescriptive approach postulates that teachers will be better able to determine individual educational needs of handicapped children if trained in the use of informal evaluative techniques.

Competency based instruction requires that: (1) behavioural objectives be stated in measurable terms, (2) teaching activities meet the stated objectives, and (3) proficiency assessment follows instruction. The statement of objectives must denote measurable attributes observable in the learner, otherwise it is impossible to determine whether or not the programme is meeting the objectives. Before defining a behavioural objective, two components need definition: behaviour and objective. "A behaviour" refers to any measurable activity displayed by a learner. "An objective" is any statement of what the learner is to be like when he has successfully completed a learning experience. A behavioural objective then is an objective that is observable or measurable after the student has undergone a learning experience. A behavioural objective is well written if it answers these six questions:

1. Who is going to perform the behaviour?
2. What behaviour is desired?
3. What instructional variable is desired?
4. How will the behaviour be measured?
5. What is the length of time required for performance of the behaviour?
6. What is the proficiency level expected?

When writing the behavioural term clear action verbs should be used. A clear description of what the child is to do as a result of instruction and an identification of what behaviour is to be performed are needed. The limitations, restrictions and conditions which are imposed on the child when he is demonstrating the final behaviour must be listed. They might include information, tools, equipment, source materials. Then, the minimum acceptable level of performance required to indicate mastery of a task must be stated. In setting the general goals for the behavioural objectives, appropriate curriculum areas shall be selected by the teacher. Areas of the curriculum include cognitive, psychomotor, and social and emotional growth. The behavioural objective is designed to include the areas in which the student needs a special technique or modification because of a handicapping condition. Often contained in the behavioural objective is a statement of the child's present level of performance which should reflect norm reference and criterion-referenced test results, anecdotal records and the teacher's insight and experience. The statement of the level of performance should stress qualitative and descriptive information as well as quantitative data. Long term goals should first be selected and should reflect those areas which need strengthening. Determination of the long term goal is based on the assessment of the present level of functioning. Long term goals need not be measurable but they should not be so broad as to become meaningless. Behavioural objectives are short term and must derive from the long range goals. A behavioural objective must be written for each child and must be written clearly, specifically and sequentially.
Assessing individual differences in handicapped children. Children not only learn at a different rate when compared to each other, but within themselves tend to exhibit different capabilities in various areas. The fact that children are uniquely responsive according to specific strengths and weaknesses points not only to the need for greater awareness of individual differences generally, but also suggests the desirability for a more clinical approach in teaching. It is obvious that not only do individuals differ among themselves (inter-individual variations) but that most people vary substantially within themselves (intra-individual variations) in areas of educational and psychological significance. It is intended here to review the concept of inter- and intra-individual variation as it applies to teaching the handicapped. This notion is basic to clinical teaching and will establish the foundation for subsequent discussions on specific methodological techniques appropriate in the education of the handicapped.

Inter-individual assessment uses the performance of other children as the reference for determining an individual's level of competence. Inter-individual variability is a concept central to the notion of handicapping conditions. In describing characteristics of various populations of subjects, professionals in the behavioural sciences use a measure of central tendency such as the mean (average), mode or median. Children who deviate substantially from the average in one or more educationally significant areas can be considered handicapped. If a child has a disability in areas such as visual memory, auditory discrimination, perceptual-motor development, concept formation, or expression of ideas, his general performance will be reduced in areas related to learning. For this reason, when one considers a child to vary significantly from the average, the educational importance of the dimension on which variations are observed must be considered. Awareness of academic difficulty in a handicapped child's level of ability is important; however, cognizance of disabilities in very specific areas (e.g. memory, transfer, incidental learning and vocal expression) will provide a more practical basis for planning an educational programme. To base an educational programme for the handicapped solely on the inter-individual assessment indicates an insensitivity to differences within each child. Instead, moving beyond the inter-individual procedures to a within-individual analysis transcends the use of traditional disability categories and focuses attention, properly, on educationally relevant factors. Special educators most often deal with multiply-disabled children who show extremely diverse patterns of ability and disability. The onus is on the teacher to develop an educational prescription according to the unique pattern of each child.

The first step in the procedure is to establish the child's predicted level of ability. This can be determined with most precision by using some standard individually administered test. A general mental age can be determined. Mental age is an important factor in assessing capacity. It provides some general indication of a child's level of expectation in academic areas. It provides a measure of a child's present intellectual status. The emotional and academic status of retarded children in particular will be close to their mental age. Their social and physical development will be closer to their chronological age. In addition, mental age provides an estimate of a child's attention span, tolerance of frustration, ability in small motor functioning, and in other areas directly related to efficiency in learning.

The second step in the diagnostic procedure is to ascertain the level of achievement of the child in various specific areas. Whereas in the first step capacity was estimated, in this step level of performance is evaluated. Children often do not achieve at a level commensurate with their predicted level of ability. Achievement tests and criterion-referenced tests are most frequently used to evaluate performance. By seeing the child's level of achievement in all areas and comparing these data with his mental age, the teacher is able to identify areas of common strengths and weaknesses.
The third step in this procedure involves the determination of areas of difficulty within those specific subject areas in which weaknesses have been demonstrated. For example, one could initially compare a child's scores in areas of reading such as reading readiness, oral reading, speed, sight reading, work knowledge, comprehension, paragraph meaning, and sight vocabulary. A profile could be developed to determine in which areas of reading the child was particularly weak. This, then, will provide the teacher with more specific information concerning how the reading programme might be structured for the child. A similar kind of procedure could be used in arithmetic by fractioning down areas involved in the arithmetic process.

The fourth major step in analysing a child's pattern of strengths and weaknesses is to survey the technique the individual uses in working through a problem. The importance of this type of analysis cannot be overstated, particularly if a child is employing a process in which a certain weakness is manifested. For example, if a child is able to learn best through use of the visual channel and for some reason is weaker in the auditory vocal channel, the teacher should know about this and adapt methods of instruction accordingly.

Diagnosing the developmental patterns of a child requires the examination of the quality and integration of five fields of behaviour each representing a different aspect of growth. These five major fields are: (1) adaptive behaviour, (2) gross motor behaviour, (3) fine motor behaviour, (4) language behaviour, and (5) personal-social behaviour.

Adaptive behaviour is concerned with the organization of stimuli, the perception of relationships, the dissection of wholes into their component parts and the integration of those parts in a meaningful way. Included in this field are finer sensorimotor adjustments to objects and situations: the co-ordination of eyes and hands in reaching and manipulating: the ability to utilize motor skills appropriately in the solution of practical problems; the capacity to initiate new adjustments in the presence of simple problem situations. The child's integration of stimuli in a meaningful way is a complicated process and results from the intactness of his central nervous system. So, adaptive behaviour is the forerunner of later intelligent behaviour and must be the primary basis for predicting intellectual potential.

Gross motor behaviour includes postural reactions; head balance, sitting posture, standing posture, balance when walking, running, jumping, etc. Fine motor behaviour consists of the use of the hands and fingers in the prehensory approach to grasping and manipulating an object. Motor behaviour is vital for an assessment of a child. However, one must keep in mind that good motor behaviour does not always mean superior intellectual ability nor does poor motor behaviour necessarily mean an intellectual defect.

Language behaviour includes all visible and audible forms of communication, whether by facial expression, gesture, postural movements, vocalizations, words, phrases or sentences. It includes mimicry and comprehension of the communication of others. Articulate speech depends on a social situation. From about the age of two language is used as a criterion of intellectual adequacy.

Personal-social behaviour comprises the child's personal reactions to the social culture in which he lives. The relationship between the child and his environment accounts for many of his skills and attitudes: his feeding skills, his self-dependence in play, co-operativeness and responsiveness to school and social conventions. This is the field most affected by cultural differences but it is also dependent upon both neurological and intellectual integrity.
If a child is to learn by gathering information from his environment and to remember, associate, and to use this information in an appropriate way, it is essential that perceptual sensitivity, selectivity and stability be established. This means that the child must be able (1) to attend, (2) to select from his environment those perceptions which are relevant to the situation at hand, (3) to organize input by associating relevant perception with appropriate experiences, (4) to respond in a suitable way and (5) to use responses as feedback for further perceptual selection. Learning is dependent upon perceptual-motor skills. The process by which perceptual-motor skills develop is complex. In a general sense, there are four major components of the process, namely, input, association or integration, output and feedback.

The receptive or input process consists of the extraction of impressions from the environment by the sense organs and the translation of these sensations into message systems appropriate to the brain.

The development of association skills closely follows the establishment of and growth in receptive ability.

The expressive or output phase of the perceptual process occurs after the child perceives that some type of response is necessary in a situation. A response can be made vocally by gesture or in combination. Initial responses by the child are motoric. Motor patterns are developed, systematized and elaborated upon according to the perceptions the child receives from the environment.

Feedback. It is essential that the perceptual process contain an effective system for monitoring the appropriateness of the output. This monitoring results in any necessary modifications within the system and leads to greater discrimination, selectivity, and differentiation in the reception of new stimuli.

Children with specific or general difficulty in one or more of the components of the perceptual process show a reduction in the effectiveness of learning. Learning will not occur effectively if children have difficulty in:

- receiving information
- making associations properly
- perceiving differences in figure-ground relationships
- making spatial to temporal translations
- accurately perceiving objects in space
- developing co-ordination between eye and hand
- sequencing

Behaviour modification. Behaviour modification has without doubt become one of the most extensively used methods in the education of handicapped children. The focus of behaviour modification approach is an observation of overt behaviour. It holds that all behaviour, appropriate and inappropriate, is learned. Therefore the task for the teacher is to identify specifically those inappropriate behaviours which need to be diminished or extinguished, and establish reinforcement schedules accordingly. In addition, deficit behaviours must be identified and proper response repertoires established. Excessive behaviours call for reinforcement schedules to extinguish them.

The first task is to determine the problem and a means of measuring the behaviour. The teacher should observe the selected behaviour in terms of frequency, duration and intensity. This is referred to as baseline data and is established by observation and careful recording in order to use the data later to check the effectiveness of the modification programme. After determining the
behaviour which needs to be altered, behavioural objectives aiming at this alteration are stated in small progressive steps, each problem being treated separately.

Some terms which need defining are:

1. **target** - the individual whose behaviour is in need of change;

2. **reinforcers** - consequences which strengthen behaviour when presented or weaken behaviour when withdrawn; they are within the individual's environment and could be things such as a smile, an art project, a toy, and are frequently given by people in his environment;
   (a) **positive reinforcement** - the giving of something good which causes behaviour to continue;
   (b) **negative behaviour** - the holding back of something good in order to extinguish behaviour;
   (c) **punishment** - the giving of something bad which inhibits behaviour (using something which does not logically, emotionally and socially fit the situation, does not foster positive change in behaviour but causes problems to be inhibited, not solved);

3. **reinforcement schedules** - there are four types;
   (a) **fixed interval schedule** - refers to a fixed interval of time (for example, every five minutes);
   (b) **variable interval schedule** - refers to a time schedule which is intermittent (for example, reinforcing a behaviour after ten minutes, then three minutes, then five minutes, etc.);
   (c) **fixed ratio schedule** - refers to reinforcement after a fixed number of responses (for example, after every third response);
   (d) **variable ratio schedule** - refers to reinforcement after intermittent numbers of responses (for example, after the fifth response, then the fourth, then the sixth, etc.);

4. **operant conditioning** - the behaviour operates to produce the reinforcement; reinforcement is an event which follows a behaviour; the child must do something to "earn" the reward;

5. **contingency** - conditions must be fully met if a reinforcer is to be given to the child; the concept of contingency between behaviour and reinforcement is the key concept in behaviour modification techniques.

The behaviour modification plan should be an "intervention" in that it describes (1) the actions of an intervention; it describes the actions (2) of an interventionist as he comes between the events in a student's life in such a way as to bring about a desired result. Such plans assume that the vast majority of the students can be helped with an appropriate amount of effort (1) if they are based on a correct assessment/analysis, (2) if the intervention is started early enough, (3) and if all appropriate resources are utilized. They should be practical within an educational setting and primarily aimed at those exigencies operating in the school over which it can and does have control. They should also make use of and involve a variety of people such as the teacher/interventionist, the psychologist/interventionist, the principal/interventionist, the parent/interventionist, etc.
Interventions can be organized in several ways. One technique is to classify them as to where the focus of the approach occurs (whether you are attempting change in the total environment of trying to focus on the individual in a more personal way). Another approach divides interventions along a scale of the directness of approach (whether or not they work with the individual in a direct or indirect way). One advantage that the school has over many other treatment agencies is that it can work both directly and indirectly with the student. Thus by working on improving the curriculum we can help students who are already in trouble, and hope at the same time to prevent problems in future students. Those indirect techniques which avoid the problems inherent in "identifying the patient" provide us with some of our most powerful, albeit only minimally used, ways of helping people.

Another analysis suggests that there are four major methods one can use to intervene in the process of helping students:

1. Something can be done around the student, by working indirectly with him on the total setting in which he exists (environmental interventions).
2. Something can be done to the student by focusing directly on the factors which affect him but in a way which deaccentuates the interpersonal relationships (installed interventions).
3. Something can be done by the student by using a personal relationship with him to bring about specific behavioural changes indirectly (assigned interventions).
4. Finally, something can be done with the student by working directly with him in a personal way, which capitalizes on the interpersonal relationship (transactional interventions).

Environmental interventions. All the techniques described under this heading indirectly attempt to help the student by making adequate provisions for him in the total curriculum/environmental setting. The school, as it is currently constituted, causes or severely aggravates the great majority of all the problems which the school psychologist is called on to help. Energy spent to make the total environmental/curricular setting more individualized, more relevant, and more totally positive is well spent. If we can meet an individual's needs and help him to find success day after day in the school situation, he will be less likely to have difficulty or need to be referred.

Installed interventions. In these interventions, some technique, person, stimulus, etc., is added to or taken away from the child's environment or life space. Instead of emphasizing a personal relationship with the child, the installed intervention attempts to manipulate specific aspects of the student's social and/or physical environment directly.

Assigned interventions. This includes those indirect techniques which are aimed at changing specified personal/social behaviour. A specific activity or role is assigned to a student which will artificially affect his adjustment within a social setting, with enough force to eventually bring about a more permanent change.

Transactional interventions. These include a variety of techniques in which the interventionist works with the student in a direct, personal way. As used in this framework, a transaction refers to an event in which all the participants - both the interventionist(s) and the student(s) - gain meaning from their active participation in the relationship.
Communication skills. Perhaps no single area of skills is of greater importance to the process of adapting than that of communication. Included in this area are skills of oral communication, written communication, listening and reading. Each is a vital skill and thus requires specific instructional attention. Yet all are interrelated and so may be treated together. More fundamentally, the skills have both mechanical and dynamic aspects. That is, not only must the skills be taught as skills, but the use of the skills in adaptive behaviour must also be practised by the handicapped learner. Each of the sub-areas has a developmental sequence and each level of development is related to the others.

Oral communication. The function of oral communication in our culture has been described by Jordan as: (1) communication (2) behaviour control, and (3) the medium for thought. Adequate communication between people requires a common set of verbal symbols, a common set of referents for the symbols and a common set of sounds to represent the symbols and references. The task of the teacher is to help each child to learn the words, grammar, meanings and correct speech sounds appropriate for each developmental level and to provide practice in using these skills for communication behaviour control and thinking.

A. Pre-primary level:
(1) Should be able to express himself well enough to make his needs and wants understood.
(2) Can use affirmative and "not" statements: "This is a ball". "This is not a book".
(3) Can handle polar opposites: big - little.
(4) Can handle simple "if-then" deductions: "If this is big then it is not little".
(5) Can distinguish printed words from pictures.
(6) Can handle "or" statements: "You may go or stay".

B. Primary level:
(1) Speaks loudly enough without shouting.
(2) Shares experiences with peer group.
(3) Speaks in complete sentences.
(4) Talks over the telephone in an acceptable manner.

C. Intermediate level:
(1) Shares experiences with others in class in understandable speech.
(2) Uses complete thoughts in expressing himself.
(3) Makes introductions with ease.
(4) Knows how to ask for directions and help.
(5) Makes announcements to class.
(6) Knows how to give simple directions.
(7) Uses a telephone, can answer properly, take and give messages, and make emergency calls.
(8) Helps develop experience charts.
(9) Conducts and participates in committee or small group meetings.
(10) Speaks in turn.
(11) Uses good expression to show change in meaning.

D. **Pre-vocational level:**

(1) Can converse acceptably.
(2) Speaks before his peers with ease.
(3) Speaks pleasantly, courteously and clearly.
(4) Can make and complete a long-distance telephone call.
(5) Knows simple procedures of democratic meetings.

E. **Vocational level:**

(1) Has acceptable interview skills
(2) Knows and uses correctly the appropriate vocational vocabulary.
(3) Can carry on acceptable social conversation.
(4) Can participate in group discussions for problem-solving purposes.

**Listening skills:** Auditory perceptions not only are the means through which people constantly monitor the state of the world, but they also are the building blocks upon which written symbols take on the meaning which makes reading a reality. To many handicapped children, sounds do not become well differentiated because the child is flooded with auditory noises; so he learns not to hear those which have no immediate relevance to him. Listening skills involve auditory discrimination, auditory memory, auditory sequencing, and auditory closure in the early instructional programme. At later stages of development the child must learn to identify selectively those sounds which are important, and to interpret the message intended by the speaker. This involves much more than just paying attention. It involves reorganizing and synthesizing those sounds into a related group of meanings which have relevance for the child himself. The outcome of good listening skills to be developed at each level is:

A. **Pre-primary level:**

(1) Can attend to short, simple stories and music.
(2) Pays attention to others sharing experiences.
(3) Takes simple, concise directions from the teacher.
(4) Recognizes pleasant sounds.
(5) Knows the urgent sounds or commands.
(6) Is able to imitate simple sequential sound patterns.

B. **Primary level:**

(1) Listens carefully to three or more instructions.
(2) Knows the community sounds (trucks, cars, aeroplane, jets).
(3) Recognizes and responds to emergency sounds (horns, sirens).
(4) Distinguishes and associates rhyming words and alliterations.
C. Intermediate level:
(1) Develops auditory discrimination.
(2) Can respond appropriately to directions.
(3) Can reinterpret a speaker's short message in his own words.

D. Pre-vocational level:
(1) Is a courteous listener.
(2) Can listen to and carry out detailed instructions.
(3) Can describe a story read to him, a movie, television show or record listened to.

E. Vocational level:
(1) Can follow a described work plan.
(2) Can participate in group discussion.
(3) Can reinterpret messages.

Written communication: Both the mechanics of writing and the expressing of ideas are involved in this skill. First things come first, so the teacher first must concentrate on mechanics and then the communicative aspects of the skills. Outcomes to be expected at each level are:

A. Pre-primary level:
(1) Can use large muscle movements.
(2) Can trace and follow dots in developing finger dexterity.
(3) Can use colours to an acceptable degree.
(4) Can put together simple six- to eight-piece puzzles.

B. Primary level:
(1) Has adequate motor control for writing.
(2) Writes his name.
(3) Copies complete sentences.
(4) Copies headings, dates and time on papers.
(5) Copies labels accurately.
(6) Begins sentences with a capital letter.
(7) Ends sentences with correct punctuation.

C. Intermediate level:
(1) Writes legibly in cursive writing.
(2) Uses proper punctuation.
(3) Writes friendly notes and addresses them correctly.
(4) Keeps simple notes or minutes of meetings.
(5) Fills in complete date two ways.
(6) Uses abbreviations found in his experience (Dr., Mr., Mrs.).
(7) Writes telephone numbers, address, age, birthdays.
(8) Writes lists in alphabetical order.
(9) Writes notes to parents or others when necessary.
(10) Has a usable written vocabulary.
D. Pre-vocational level  
(1) Writes a good simple sentence.  
(2) Writes a complete paragraph.  
(3) Fills out application forms correctly.  
(4) Writes an acceptable letter.

E. Vocational level:  
(1) Can take and record simple messages.  
(2) Can fill out order forms.  
(3) Can record inventory records.  
(4) Can make out usable shopping lists.

Reading:  
A. Pre-primary level  
(1) Has good listening skills, such as auditory discrimination, memory and closure.  
(2) Has good visual discrimination skills, memory, sequence and closure.  
(3) Recognizes meaningful configurations - stop, men, women, warning, cautions.  
(4) Reads the letters of the alphabet.

B. Primary level:  
(1) Knows consonant sounds and blends.  
(2) Knows vowel sounds.  
(3) Knows beginning and ending sounds.  
(4) Recognizes word families.  
(5) "Reads" experience charts.  
(6) "Reads" work sheets.

C. Intermediate level:  
(1) Has a 550-word sight vocabulary.  
(2) Uses context clues.  
(3) Uses phonics to attack new words  
(4) Uses prefixes, suffixes and root words.  
(5) Can develop and read experience charts.  
(6) Achieves a 2.5 grade level on reading achievement tests.  
(7) Has an elementary grasp of newspaper readings.

D. Pre-vocational level:  
(1) Shows some interest in reading for pleasure.  
(2) Can read a newspaper to obtain information.  
(3) Can develop and read detailed experience charts.  
(4) Can use reading to get information.  
(5) Understands and can use the dictionary.

E. Vocational level:  
(1) Can read and understand crucial materials pertaining to bills and statements.
To assist the teacher in working with children having reading problems, many profiles have been developed. They can be used for pinpointing diagnoses and prescribing just what the teacher needs to do. The profiles allow for the translating of general or global goals or objectives into specific tasks to be performed on a day by day basis. They suggest what the many factors are that the teacher needs to consider in making a diagnosis. Methods and techniques to be used in this manner can be found in Barbe (1961); Lazar (1972); Smith (1970); and Smith et al., (1970).

The profiles have been developed to assist in the assessment of specific factors relating to the reading process. The factors are usually grouped and organized under six major headings: (1) Perceptual Reading Skills, (2) Word Identification and Attack Skills, (3) Comprehension, (4) Oral Reading, (5) Study Skills for Effective Reading, and (6) Interpretation and Appreciation Reading Skills. The profiles facilitate the teacher's initial survey, that will eventually lead to modifications after the teacher and pupil have had sufficient time together. The profiles are especially helpful in that the teacher can pinpoint with greater precision the specific needs of the student. Finally, the profiles allow for developmentally sequenced observation and study of pupil behaviour in operational terms that lend themselves to prescriptions written in measurable behavioural terms.

In coding the behaviour of the student, the teacher can rely on both formal instrumentation and informal teacher-made devices that will tap the specific reading skills in question.

In addition to the informal assessment approach to communication skills, the following methods of teaching reading were discussed during the seminars.

A. Basal Readers
B. Individual Reading
C. Experience Charts
D. Reading Kits (for example, Distar, S.R.A.)
E. Multi-Sensory Approaches (Fernald, Gillingham)
F. Phonics Approaches

Mathematics learning problems. One way of looking at mathematics learning problems is to focus on the problems within the pupil as explanations of the mathematical disability. Lerner (1971, 1976), for example, indicates that children with mathematics problems show (1) disturbances of spatial relationships, (2) disturbances of visual-perception and visual-motor association, (3) poor sense of body image as it may relate to lack of number sense, (4) poor sense of time and direction, (5) possible relationships between arithmetic abilities and social maturity and social perception, and (6) arithmetic problems caused or compounded by reading handicaps. Johnson and Mykelbust (1967) also indicate that children with mathematics problems (1) are deficient in visual spatial organization and non-verbal integration, (2) have superior auditory abilities, (3) may excel in reading vocabulary and skills, (4) may have disturbance of body image, (5) have possible disorientation problems, (6) show poor social perception, and (7) have higher verbal than non-verbal functions.
Earlier mathematical concepts (whether by a child or an adult) are learned through the senses. Mathematical information must be provided to the learner in a form which can be perceived by the senses and then sent to the appropriate processing mechanism in the neurophysiological system. Basic then to the earlier mathematical conceptualization is perception, the process of organizing the raw data obtained through the senses and interpreting its meaning through the operation of the brain. In contrast, the higher mathematical conceptualization is abstract and a higher level cognitive functioning and reflective thinking is necessary.

Piaget indicates that numerical concepts do not develop from the use of symbols, mechanical procedures or verbalization by the child or teacher. Instead, he suggests that the manipulation of objects and active participation during the stage of concrete operations provide the necessary and most desirable circumstances for the establishment of two important concepts which, in turn, form the foundation for understanding numbers. These two central concepts are classification and seriation.

Classification. The grouping of objects according to some common property is basic to understanding other arithmetic processes. In order to be successful in classification activities, a handicapped child must be able to perceive the unique characteristics of and differences between objects. Discrimination, then, is a sequential precursor to classification. Additionally, a certain level of language ability will enhance the development of skill in classifying. Learning how to group according to a common characteristic must be acquired first in the process of developing the concept of number. This initial skill may take a long time for the handicapped children to understand well at a conceptual level. Briefly, the steps of instruction are the following:

Correspondence. Moving to the next pre-number stage, the understanding of correspondence requires that the handicapped have previously attained an understanding of the concept of class. This concept will need to be reinforced frequently during the instruction. Relating a unit in one group or set to a unit in another group or set, regardless of the possible dissimilarity in the characteristics of the groups, requires that the children understand one-to-one correspondence. There are many subtleties involved in the notion of correspondence which may prove to be very difficult for the handicapped unless the teacher is especially aware of potential areas of misunderstanding or misinterpretation. Correspondence is vital for the subsequent teaching and learning of addition and subtraction.

Conservation and reversibility. Two additional concepts should be taught at this point in the arithmetic programme. The first is conservation, i.e. that the number of units within sets remains the same irrespective of any changes made in the arrangement of the units contained in each set. The second concept is reversibility, i.e., the idea that it is always possible to restore units to their original positions without changing their nature or relationship with other sets.

Ordering. The ability to order sets into a series according to the number of members contained in each is another major concept the handicapped must understand in order to grasp the idea of number. The notion of relations or seriation is as important as classification and one-to-one correspondence. Indeed, the number system is based on a blend of the operation of classification and ordering. The idea of five, for example, requires the child to classify in his mind five objects and to place five between four and six in the proper order. When able to deal with these operations in combination, the student will simultaneously see the cardinal and ordinal meanings of number, that is the number five is both understood conceptually and correctly located between the fourth and sixth positions.
Associating numbers with numerals. After the children have demonstrated skill in ordering sets of objects in terms of their relationship to other sets, they are ready to focus their attention on the association of numerals with the number of elements contained in appropriate sets. By this time the notions of oneness, twoness, and threeness will have been introduced, and the children will know that sets containing a like number of elements exhibit a common property, or sets having a similar number of elements can be associated with a certain name and symbol.

Teaching concepts related to number are basic for children to develop flexibility in understanding and to apply correctly even the most elementary arithmetic process. Substantial attention should be given to these fundamental arithmetic matters in special classes for the handicapped. The teacher should not be overly concerned if the children spend a great amount of time with these basic concepts. The advantage of establishing a firm understanding of the pre-number concepts will become visible as they move toward the more difficult aspects of the arithmetic programme.