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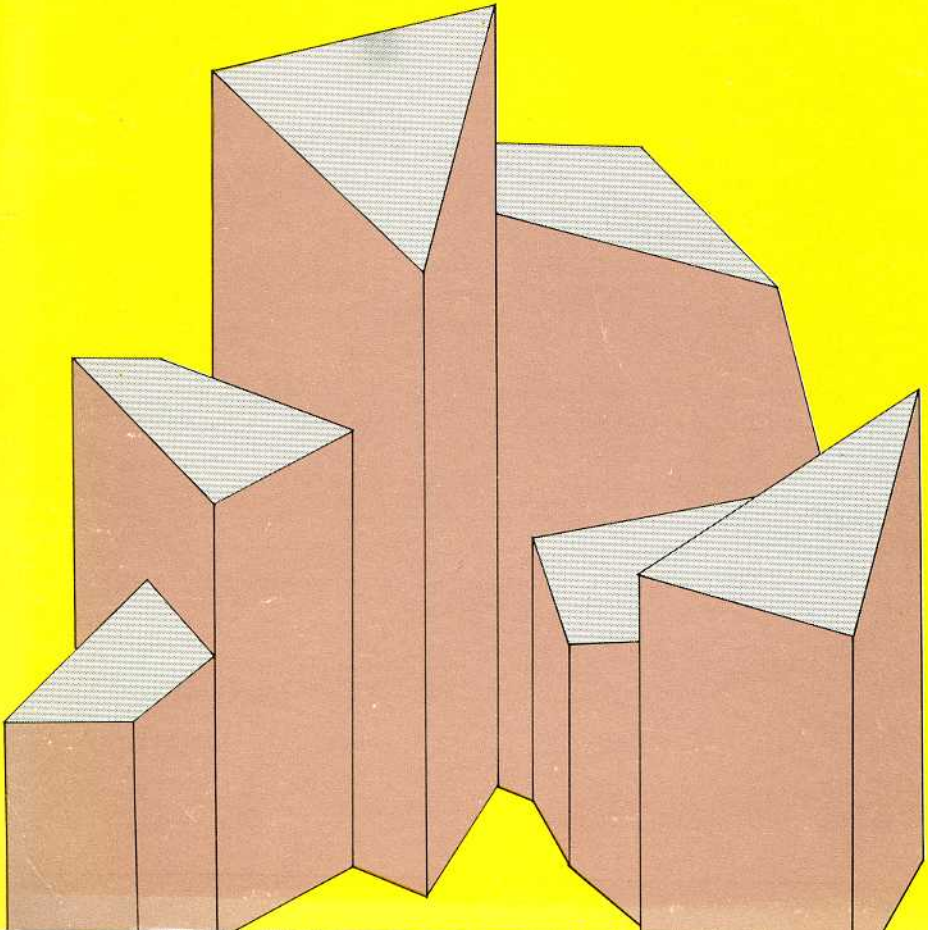
in education

Asian series

Examination reforms in Sri Lanka

by B. Premaratne



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An International Bureau of Education series

Examination reforms in Sri Lanka

by B. Premaratne
Commissioner of Examinations
Ministry of Education, Sri Lanka

Study prepared
for the Asian Centre
of Educational Innovation
for Development

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PREFACE

In 1972 Sri Lanka initiated a major reform of its education system. A series of six studies, of which the present publication is one,[1] describe the different aspects of education and how they were affected by the educational reform: in some aspects totally new programmes, designed and developed ground-up, were introduced; in others, the current programmes were reoriented, with new emphases and focal points.

The reform occurred in an education system which for quite a few decades had come to be taken for granted because of its steady rhythm of expansion and growth. As the present series of studies show, the driving force of the reform came from outside the education system, and lay in the urgencies of the social and economic situation. The changes triggered off in consequence within the education system are both comprehensive and fundamental, and serve to illustrate how the processes of reform and innovation are interlinked.

In Sri Lanka, as in many other countries in Asia, the examinations have exerted a strong, almost decisive, influence on the curriculum. Any educational reform has therefore to reckon with the examination system. The present study describes how the examination system in Sir Lanka was affected by the educational reform and the measures initiated to reorganize the system as well as the process.

The Secretariat, while noting that the views expressed by the author are not necessarily those of Unesco, records its appreciation to him for this valuable contribution to the series.

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[1] The others are:
Ariyadasa, K.D. *In-service training of teachers in Sri Lanka.*
Ariyadasa, K.D. *Management of educational reform in Sri Lanka.*
Peiris, K. *Integrated approach to curriculum development in primary education in Sri Lanka.*
Ranaweera, A.M. *Integrated science in the junior secondary school in Sri Lanka.*
Diyasena, W. *Pre-vocational education in Sri Lanka.*

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INTRODUCTION

In January 1972, the Government of Sri Lanka commenced implementation of certain far-reaching educational reforms which were decided on in the context of its Five Year Plan. The formal school system was restructured from 8-2-2 to one of 5-4-2 and a newly-designed common curriculum was introduced to the junior secondary level in all schools (See Figures 1 and 2). The National Certificate in General Education Examination (N.C.G.E.) was to be administered to this initial cohort of pupils in December 1975. Working towards the attainment of the re-defined objectives in education and development of a larger measure of public confidence in the reforms have been the immediate concerns of the Government policy makers and the Ministry of Education.

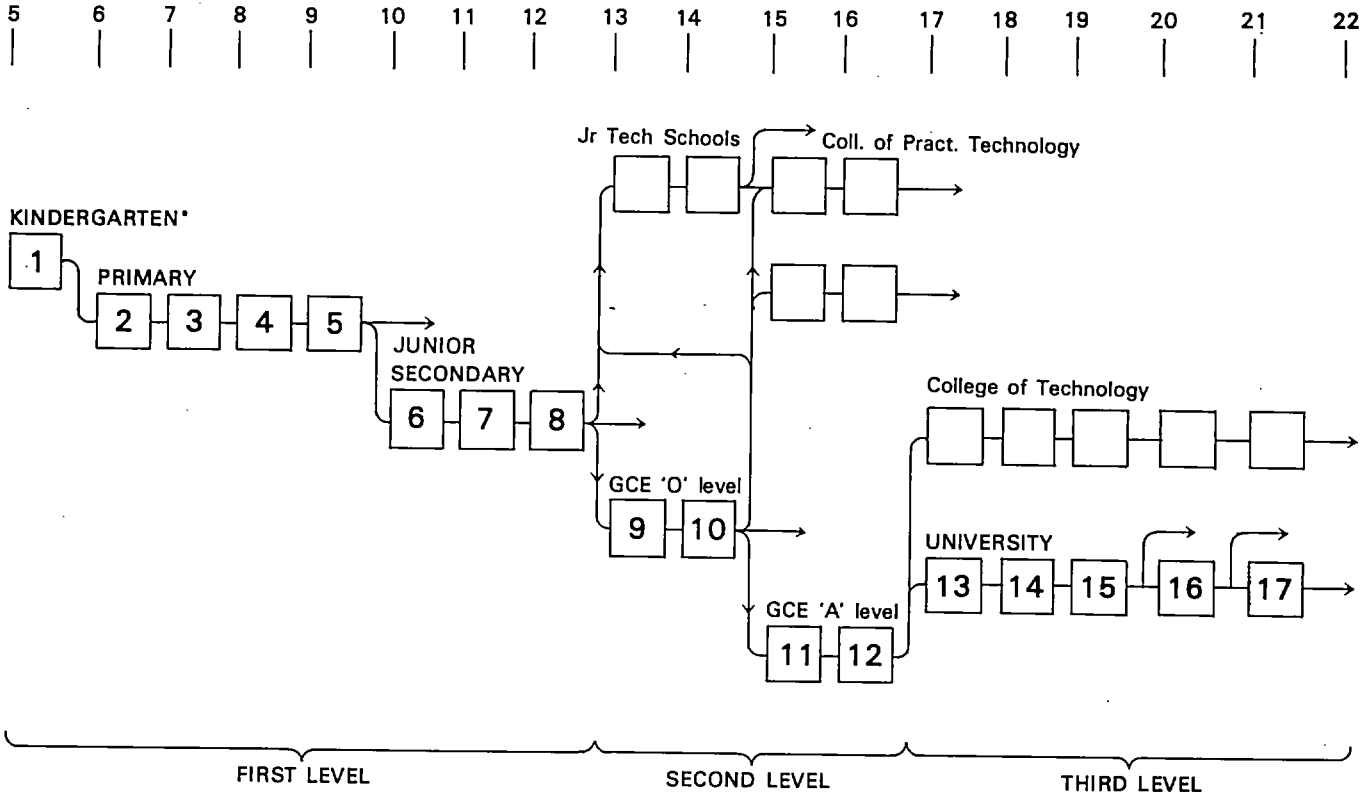
This study deals with certain measures that have been tried out with a view to re-orienting the established examination system and its practices in order to accommodate the new demands. It would be of positive value, even if the success of these measures is limited to the extent of obviating the distortion of educational goals through their undue influence over teaching practices normally associated with the traditional examinations.

Specifically, the study deals with four projects, as follows:

1. Pilot examination on the N.C.G.E. Pattern
   a) Examination of the pre-vocational study areas
   b) Practical examination in health and physical education
   c) Internal assessment in the social studies programme
2. Continuous evaluation of the teaching programme at the junior secondary level
3. "Conference-Marking" of examination scripts and expediting issue of results
4. Admissions to the university on examination and district quota system.

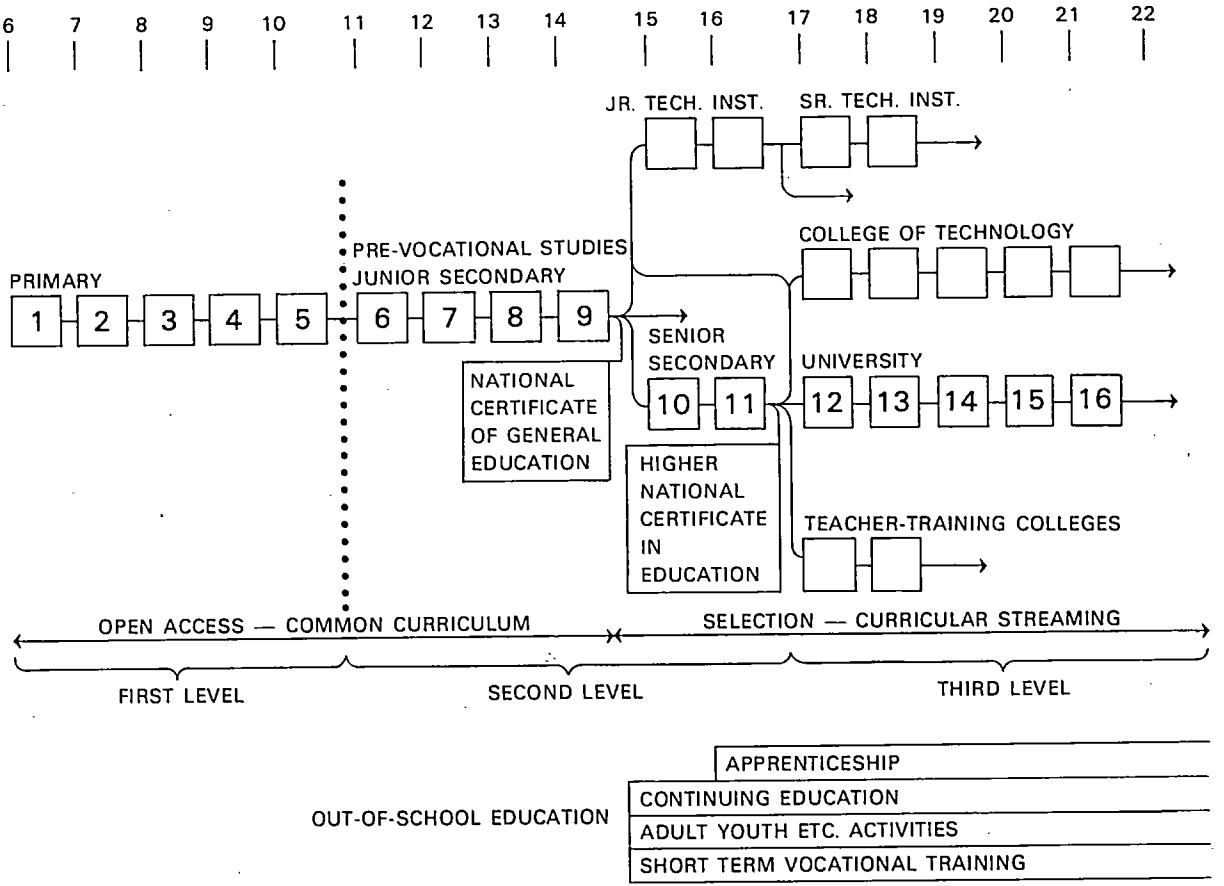
The document is prepared with the intention of sharing with other examination systems the experience gained in these attempts at finding ways and means of breaking through the conservatism of traditional examination systems without endangering the confidence of the candidate, taxpayer and the voter in the value of the resulting certification, and working towards the gradual decentralization in measurement and evaluation necessary to improve the efficiency of the teaching process.

FIGURE 1 THE STRUCTURE OF THE EDUCATIONAL SYSTEM BEFORE THE NEW REFORM



* THE DURATION OF KINDERGARTEN WAS REDUCED IN 1956 FROM 2 YEARS TO 1 YEAR

FIGURE 2 THE NEW EDUCATIONAL SYSTEM OF SRI LANKA



Background information

The national relevance of these reforms in the examination systems can be assessed only in the context of the envisaged role of education in the national development effort.

Education prior to 1972 and its critical diagnosis.

The educational system in Sri Lanka has a long history of growth and change, but the origin of the modern system can be traced to the appointment of a Special Committee on Education in 1943. This Committee took note of the absence of equality of opportunity in education due to the existence of different types of schools; one type for the favoured few who could afford to pay fees and be educated in English, and another for the large majority of under-privileged pupils who could not afford to pay fees, and were taught in the Sinhala and Tamil languages media.

The Committee also recognized that the uniformity and excessive bias of the curriculum bore little relation to the demands of the society. Its recommendation for free education from kindergarten through university was first introduced in 1945 and by 1970 its implementation had led to a veritable educational explosion.

The legislative measures introduced from the early 1960s have resulted in about 90% of the country's formal education and training coming under the full control of the Ministry of Education and the remaining 10% being obliged to conform to the broad national policy. Thus, the education system in Sri Lanka has become one of the largest centrally-controlled educational systems in the world.

There are about 2.8 million students, 100,000 teachers and over 20,000 employees almost totally under the control of the Ministry of Education. For a country of 12.5 million inhabitants this means that practically one quarter of the population is controlled by a huge heavy single organizational body.

In spite of the enormous efforts that this country has devoted to the educational sector, it has been realized that the performance of the system, both in its internal efficiency as well as in its external productivity and effectiveness, has been far from satisfactory.

For every 100 pupils entering grade I in 1952, 30 to 31 reached grade VIII, 27 to 28 reached grade X; 6 to 7 grade XII and 1-1.5 reached university. In more recent years the situation appears to have improved slightly. Of the intake at grade I in 1969 an average of 37% reached grade VIII and 19% of the intake of grade IX reached grade XII. An improvement in the retention rates from 1955 has been partly due to a decline in the drop-out rates, and also an increase in the average number of years of schooling per pupil in first level education. Repetition rates have also remained fairly high, specially in grades I - V. Drop-out rates have been increasing with each higher grade. They have been particularly high in second level education and especially in the arts stream. Analysis of the results of the G.C.E. Ordinary Level

examination may also provide an indicator of the efficiency of the system. In 1968 the rates of passes was over 50% in the Sinhala language, religious knowledge, agricultural science and metalwork. For all other subjects, less than 50% of the students who sat for the examination passed. In key subjects such as Mathematics, the ratio was as low as 38.1%. These figures show that the G.C.E. (Ordinary Level) examinations are either not adapted to the local conditions or are badly prepared, or that the students are not well-trained. In all cases, the chances are that the school system has been inefficiently run. There has been no proper operation and control of a technical education system. The effective power of organizing the courses has been widely diffused among several bodies: a number of Ministries, public corporations and several private mercantile organizations.

Sri Lanka is primarily an agricultural country where more than 50% of the labour force is employed in farming. There has been no agricultural education guided by clear-cut objectives. Various Ministries and institutions with overlapping aims and functions have been competing in the field.

If the pattern of enrolment and the qualification of teachers are taken as criteria for evaluating equality of educational opportunity among the different regions of the country, these certainly did not indicate a balanced educational development.

Enrolment ratios have varied significantly from region to region from as low as 6.2 per thousand inhabitants in the Nuwara Eliya District to 15.7 in Galle District at grade VIII level and at second-level 10.0 in Mannar District to 32.5 in Galle District. In term of staffing conditions, the percentage of non-trained teachers has been as high as 45.4 in Kalutara District and as low as 19.5 in Batticaloa District. The average pupil-teacher ratio has been around 29:1, with a minimum of 26.1 in Colombo North and a maximum of 36:1 in Nuwara Eliya District. The percentage of repeaters in grade I has been between 17.5 in Colombo South and as high as 43.1 in Trincomalee District.

The amount of unemployment among the educated is also a poor reflection on the effectiveness of the system. In Sri Lanka in 1969 (See Table 1) the more educated a person is, within the age group 15 - 24, the less chance he has of being employed.

Re-defined objectives for educational development

Having made a critical diagnosis of the weaknesses of the system, the Sri Lanka education planners redefined the objectives for educational development in their medium-term plan for 1972-76 as follows:

1. At all levels of education, and in both general education and technical education, to make the content of education reflect to a greater degree those forms of education needed for the accelerated growth of the country's economy, without violating the broader objectives of education;

TABLE 1

Percentage of the active labour force seeking work, by educational level, age and sector in 1969/1970

	Aged 15 — 19				Aged 15 — 19			
	U	R	E	All	U	R	E	All
No schooling	13	11	31	23	29	8	5	8
First level	44	34	27	34	16	17	12	15
Lower second level	57	41	71	46	44	38	25	39
Passed 'O' level	87	93	—	92	45	69	—	63
Passed 'A' level	—	—	—	—	22	17	—	27
All	51	41	32	41	37	39	11	34

U = Urban, R = Rural, E = Estate

2. To achieve greater internal efficiency within the educational system, in particular by reducing drop-outs and repetitions while maintaining educational standards, and to institute regular feedback and review of the different parts of the system;
3. To further the concept of equality of educational opportunity by reducing regional imbalances in the provision of educational facilities, and the bringing about of changes in the structure of the school system. These decisions have since been implemented.

Reforms that have been effected

1. The general education programme has now been restructured and reduced in duration from 12 to 11 years. In order to ensure some maturity for children reaching senior classes, and to allow them to leave the school system as late as possible (i.e. at 14 rather than at 13) the age of admission has been raised from 5 to 6 years.
2. First-level education comprises grades I to V only. This is expected to facilitate re-organization of the primary schools which will be staffed by non-specialists bringing them closer to the pupils' homes in order to produce an increase in the participation rates for the 6-to-10 age groups from 85% in 1969 to 93% by 1980. Automatic promotions in grades I to IV and VI to VIII have been introduced as a means of reducing the very heavy repetitions existing in the lower grades. The first-level education programme has been improved by the promotion of activity-based methods.
3. Junior second-level education has been re-structured to four years duration instead of two, extending from grade VI to IX. All pupils follow a common curriculum of sciences, social studies and humanities with emphasis on the application of these subjects to their everyday working lives.

A new subject area has been introduced with pre-vocational studies as a compulsory subject receiving a time allocation of nearly 20% of school time, and incorporating teaching sequences dealing with important local occupations and industries such as fisheries, cash crop agriculture, animal husbandry, horticulture, cottage crafts and service occupations. In order to ensure that these subjects are paid sufficient attention, the National Certificate in General Education examination (which will replace the G.C.E. Ordinary Level examination) will consider pre-vocational studies as essential for success. The following are the ten subject areas comprising the junior second-level curriculum:

1. Religion (Buddhism/Hinduism/Islam/Christianity R.C./Christianity Non-R.C.)
2. Medium of instruction: (Sinhala/Tamil/English)
3. Second language (English/Sinhala)

4. Mathematics
5. Science
6. Social studies
7. Aesthetic studies (art/music/dancing)
8. Health and physical education
9. Pre-vocational studies I
   comprising: *a*) Study of national resources,
   b) one pre-vocational subject selected from the approved list.
10. Pre-vocational studies II
   comprising: *a*) Geometrical and mechanical drawing,
   b) A pre-vocational study selected from the approved list.

The National Certificate in General Education (N.C.G.E.) Examination will replace the General Certificate of Education (G.C.E.) Ordinary Level examination and is a subject examination covering approximately 52 subjects of study, and will not be a pass-fail examination. It will offer a certificate indicating the pupil performance in the different subject areas which will serve as a basis for admission to senior second-level education. These changes at this level are expected to eliminate the major weaknesses of a selective system which works by streaming and privileging pupils with academic training. It is expected to minimize the difficult problems of separation between occupational aspirations and occupational opportunities; ensure saving in terms of length of schooling and the promotion of more equality in terms of school facilities between different areas. Grade IX will be the terminal year of 'open access'. Senior second-level education is to be given in grades X and XI, and the courses on the new curricula will commence in February 1976 for those who will qualify for promotion based on the results of the first N.C.G.E. in December 1976.

The new curriculum will prepare pupils for either the post-second-level system of training or for vacancies in appropriate areas of employment at the middle level. At the completion of a two-year course of studies, the pupils will sit the Higher National Certificate in Education examination (H.N.C.E.) which will replace the present G.C.E. Advanced Level examination.

Changing role of the examinations

The public examinations system, particularly at junior and senior secondary levels in Sri Lanka, has developed over a period of 110 years, but for the first 80 years, Sri Lanka had been depending on Cambridge Local Syndicate and the University of London for the designing and administration of these examinations. It would appear that in the early days the conducting of examinations was guided by two major considerations; one was the urgent need to provide schools with qualified teachers, the other was to raise the standard of instruction in the schools.

Locally-organized examinations became more popular during the Second World War, and progressively displaced the Cambridge and London University examinations, finally completing the process in 1964.

At present, the entire system of public examinations is centrally controlled by a Department of Examinations which derives its authority from an Act of Parliament (1968) and comes within the purview of the Ministry of Education.

The Department is controlled by a Commissioner drawn from the Unified Education Service and the overall educational policy of the Ministry is reflected in the administration of the examinations system.

The total testing programme of the Department runs into a little over one hundred examinations a year, and these can be categorized broadly as school examinations. Teacher training and technical education examinations and recruitment, proficiency and efficiency-bar examinations conducted to meet the cadre requirements of the various State Departments.

The Department's heaviest commitment, however, is in the area of public examinations at secondary school level. The Sri Lanka General Certificate in Education (Ordinary Level) is taken by about 550,000 candidates who have a range of 55 subjects in the three language-media to choose from: Sinhala, Tamil and English, and is held each December; the N.C.G.E. examination for nearly 175,000 students was held simultaneously with and parallel to the G.C.E. Ordinary Level from 1975 and it may not be possible to abolish this examination till about 1980. The General Certificate in Education Advanced Level is taken by nearly 50,000 candidates and has a range of about 40 subjects available in all three language media. This is held every year in April, and the New H.N.C.E. will take its place for the first time in April 1978, with both examinations running concurrently for a couple of years.

With national control of the entire examinations system notable developments did take place in the area of curriculum reconstruction, in line with the changing social demands. The Education Ministry established a Curriculum Development Department to handle all the programmes that were organized in order to keep pace with the rapid changes in educational reforms.

Thus, the new measures that were tried out and have been found to be effective, not only as examinations management techniques but also as useful procedures in evaluation and measurement, should be interpreted in terms of the total process of educational reform.

The introduction of a uniform curriculum to grades VI, VII, VIII and IX in all schools in order to provide equality of educational opportunity at the compulsory junior secondary level involves more than pure legislation. The preparation of syllabuses, course-guides, textbooks and in-service training of teachers in several new subject areas such as integrated science, social studies and pre-vocational studies, has to keep pace with the first cohort of pupils graduating from grade to

grade. The attempt to equalize teaching standards on a national scale is by no means an easily attainable end, and this paper indicates a few of the steps in the area of evaluation and measurement which lent support to other measures taken by the Ministry of Education.

I. N.C.G.E. PILOT EXAMINATION

Introduction

A pilot test conducted on the first group of N.C.G.E. pupils in grade VIII in 1974 was one of the steps taken to assess the progress made up to that point.

Four major subjects; first language, mathematics, science and social studies were tested in all schools, while all other subjects were tested in 25 electorates selected on the basis of educational, linguistic, geographical and economic variations. The N.C.G.E. examination was held for the first time in December 1975. In its objectives, content and structure, administration and evaluation, it is different from the G.C.E. (Ordinary Level) examination which will be abolished within a few years. While all examinations so far held at the end of the junior secondary level have been more selective in function, the N.C.G.E. will be mostly a test of achievement of each pupil, and thus more estimative in nature. Pilot tests have been held at the end of each year since the inception of the new educational programme in grade VI in 1972. The findings of these tests have helped to make good the deficiencies in the programme, and keep track of the general progress of the programme in the 5,058 schools. The pilot test held at grade VIII level in 1974 has been carried out at a very critical stage — just a year ahead of the final N.C.G.E. examination.

The aims of the pilot test have been:

i) Primarily, to make an assessment of the programme at this very decisive moment, and to take speedy remedial measures to make good any shortcomings;

ii) To give the pupils, teachers and parents an idea of the new N.C.G.E. examination: its structure, pattern of various tests, both written and practical, method of application, evaluation, etc.;

iii) To give teachers, who will be expected to play an important role in the N.C.G.E., training in the various functions, and impress on them the need for a sense of responsibility and commitment to the effective implementation of the new programme in the school;

iv) To provide teachers and schools with an idea of the level of efficiency expected in teaching and the working of the new programme;

v) To provide certain information to the examining boards of the N.C.G.E.

regarding the question papers, the suitability of the type of items etc., based on item analysis carried out on a random sample;

vi) To take stock of the various problems, the Department will be faced with from the management aspect in the new examination.

The findings of the Pilot Test are as follows:

Variations between districts:

Study of the average marks in the four principal subjects, first language, science, mathematics and social studies, which have been held island-wide reveal the following facts (See Tables 2 and 3):

i) In the case of the first language, the performance in Sinhala and Tamil is satisfactory; the district averages range from 39.1 to 48.5. In English the district average is much less, which reflects the prevailing low standard in the subject.

ii) In social studies the district-wise performance as depicted by the district averages, is not quite up to the expected standard. The district average ranges from 22.3 to 39.0.

iii) As far as science and mathematics are concerned, the standard seems to be low throughout all educational districts, the national averages being 24.4 for science and 21.5 for mathematics. The fact that there is not much variation from district to district shows that there is some common weakness or shortcoming in the programme in these subjects. Perhaps, recent curriculum innovations in these subject areas, such as the introduction of integrated science and modern mathematics, may be a contributory factor towards the uniformly low standard in these subjects.

Analysis of results at circuit[1] level

The circuit averages in the four subjects (first language, science, mathematics and social studies) seem to indicate that there is some slight variation in performance, in these subjects from circuit to circuit.

i) A closer examination of circuit averages, for example in the three districts of Galle, Ratnapura and Anuradhapura (See Table 4) shows that, contrary to expectation and despite the inequities in facilities, the level of achievement in some of the most remote and difficult circuits such as Bentara-Elpitiya and Hiniduma in Galle district, and Rakwana and Kolonne in Ratnapura district, is comparatively higher than that of other circuits, even urban circuits such as Galle and Ratnapura.

ii) A closer study of circuit averages also shows that in certain circuits the programme as a whole is weak, as the averages in all four subjects are low.

[1] a circuit is a sub-district educational unit.

TABLE 2

Range of average marks at school level

Circuit (District)	First Language	Science	Mathematics	Social Studies
Matara (Matara)	23.0 — 50.6	18.0 — 49.9	15.0 — 28.6	18.7 — 40.0
Kurunegala (Kurunegala)	25.1 — 57.8	18.1 — 30.0	14.6 — 33.9	15.8 — 39.5
Kolonno (Ratnapura)	35.0 — 56.0	20.0 — 46.0	17.0 — 23.0	18.0 — 41.0
Kalmunai (Batticaloa)	33.0 — 47.0	15.0 — 33.0	15.0 — 25.0	23.2 — 46.4
Badulla (Bandarawela)	24.3 — 49.0	16.0 — 25.0	15.3 — 24.0	19.7 — 41.6

Average mark in remaining Six Subjects in Selected Electorates

Subject/Electorate	Colombo South	Bentara-Elpitiya	Kolonne	Wennap-puwa	Kotmale	Anuradha-pura	Matara	Badulla	Kurunegala	Jaffna (Tamil)
1. Health & Physical Education.	40.0	43.1	36.7	40.3	39.0	39.6	41.0	37.8	34.2	39.6
2. Aesthetic Studies										
Art	38.0	51.5	38.1	35.4	30.1	35.1	35.0	31.1	47.8	35.4
Music (Oriental)	45.0	—	44.3	—	31.0	40.8	45.0	45.3	33.5	44.2
Music (Western)	52.0	—	—	—	—	—	—	—	56.5	81.0
Dancing	41.0	—	49.7	—	52.0	43.7	46.0	38.9	32.8	—
3. Religion										
Buddhism	36.0	30.3	30.1	30.7	25.9	30.9	33.0	25.0	30.9	25.6
Hinduism	—	—	—	—	—	—	—	—	—	33.3
Christianity R.C.	37.0	—	—	39.1	—	37.0	56.0	29.4	30.1	40.5
Christianity Non-R.C.	34.0	—	—	22.3	—	—	35.0	18.6	27.6	40.1
Islamic	20.0	—	—	—	—	15.8	31.0	34.1	19.2	37.2
4. Second Language (English)	50.0	27.8	26.8	31.8	24.3	31.6	28.0	22.9	27.7	25.0
5. Pre-Vocational Studies I.	47.0	26.7	41.4	51.2	42.3	40.4	45.0	38.0	49.7	41.5
6. Pre-Vocational Studies II.	37.0	20.6	36.2	48.6	43.0	37.4	44.0	32.0	34.8	35.2

TABLE 3

Average Marks, District Wise

District	First Language			Science			Mathematics			Social Studies		
	Sin.	Tam.	Eng.	Sin. med.	Tam. med.	Eng. med.	Sin. med.	Tam. med.	Eng. med.	Sin. med.	Tam. med.	Eng. med.
1. Colombo North	42.1	44.0	—	22.8	21.5	—	19.3	21.9	—	27.6	28.4	—
2. Colombo South	39.7	47.3	36.1	22.2	24.7	20.8	20.5	29.4	20.8	26.4	35.3	27.8
3. Homagama	41.4	36.0	—	22.7	16.0	—	19.1	14.0	—	28.1	39.0	—
4. Kalutara	41.1	37.4	—	23.1	20.3	—	20.1	20.0	—	27.4	24.5	—
5. Galle	40.4	40.2	34.7	23.0	25.6	18.8	20.0	22.51	15.8	26.1	22.3	18.4
6. Matara	40.5	42.2	—	23.7	27.1	—	20.7	30.1	—	28.2	24.2	—
7. Tangalle	43.1	32.3	—	26.3	22.4	—	23.0	19.4	—	30.2	23.0	—
8. Kurunegala	40.8	41.0	—	23.8	21.0	—	20.4	18.0	—	28.3	26.0	—
9. Kegalle	35.8	40.0	—	24.6	23.5	—	21.1	19.7	—	27.6	29.8	—
10. Ratnapura	40.1	41.3	—	23.2	21.0	—	19.6	18.8	—	27.1	24.5	—
11. Chilas	42.4	42.5	—	25.6	20.8	—	22.9	21.0	—	27.9	22.5	—
12. Kandy	37.7	42.2	29.5	22.6	25.6	18.7	19.2	23.2	19.6	26.6	28.3	21.8
13. Matale	38.4	48.5	26.3	24.3	25.3	39.2	20.6	25.5	23.2	26.3	35.2	30.2
14. Nuwara-Eliya	39.1	47.4	—	25.1	27.0	—	20.9	21.8	—	26.3	30.7	—
15. Bandarawela	40.0	39.9	—	23.4	20.3	—	19.7	21.2	—	26.9	25.5	—
16. Moneragala	39.9	49.6	—	25.1	25.2	—	21.5	28.7	—	25.3	28.6	—
17. Anuradhapura	38.0	47.8	—	23.7	36.5	—	19.4	35.8	—	26.4	25.5	—
18. Polonnaruwa	38.6	44.3	—	23.4	26.6	—	19.6	26.6	—	24.3	29.0	—
19. Batticalea	41.5	40.1	—	35.2	20.1	—	27.2	19.2	—	26.5	22.8	—
20. Kalnunai	52.6	43.0	—	36.2	24.8	—	33.6	23.8	—	25.5	29.0	—
21. Trincomalee	41.8	43.6	53.1	26.1	25.4	23.0	20.7	24.8	23.4	26.5	34.2	34.0
22. Amparai	37.9	41.8	—	26.7	16.0	—	19.7	14.0	—	25.9	26.0	—
23. Mannar	39.6	47.4	—	29.0	29.7	—	15.4	29.1	—	28.2	32.2	—
24. Jaffna	35.4	42.3	—	19.6	23.8	—	16.7	23.5	—	27.1	28.0	—
25. Vavuniya	39.3	38.9	—	23.0	23.1	—	28.4	18.9	—	32.1	30.4	—

TABLE 4

Pilot Examination — District Averages

Galle District	*First language*	*Science*	*Maths*	*Social Studies*
Bentara Elpitiya I	40.4	20.3	16.5	19.2
Bentara Elpitiya II	42.2	23.0	21.3	29.6
Ratgama	39.5	23.5	21.0	27.4
Hiniduma	43.1	25.6	21.9	29.0
Akmeemana	40.0	22.0	18.0	26.0
Ambalangoda	42.2	24.0	21.4	27.1
Galle	37.4	22.0	18.1	24.1
Habaraduwa	40.5	23.6	19.5	25.4
Baddegama	42.2	23.4	22.3	29.5
Balapitiya	35.9	21.2	20.0	23.0
Galle (Tamil)	40.2	25.6	27.5	26.3
Ratnapura District				
Kiriella	41.3	22.9	19.4	27.8
Opanayake	40.2	25.5	21.4	27.6
Kalawana North	38.1	24.0	19.0	26.0
Kalawana South	48.2	24.1	22.4	26.2
Balangoda North	37.9	21.3	17.7	28.7
Balangoda South	42.0	25.0	22.0	28.0
Ratnapura	39.7	21.7	20.0	26.0
Embilipitiya	39.2	23.0	18.3	25.9
Kuruwita	37.6	20.5	17.5	26.0
Pelmadulla	41.8	23.9	20.1	28.6
Rakwana	36.0	22.0	19.0	24.0
Kolonne	41.6	26.2	19.8	28.4
Nivitigala	38.4	21.4	18.4	28.4
Ratnapura (Tamil)	41.7	22.1	19.0	22.6
Anuradhapura District				
Anuradhapura	37.0	22.8	19.3	26.7
Nochichiyagama	36.6	25.3	19.6	25.6
Horowapatana	37.6	21.8	18.1	28.9
Galenbindunuwewa	39.0	22.0	18.0	24.0

TABLE 4 *(Continued)*

	First language	*Science*	*Maths*	*Social Studies*
Medawachchiya	38.5	20.9	16.6	25.3
Kebilgollawa	40.4	26.2	23.6	25.4
Kalawewa	38.9	22.8	17.6	27.0
Kekirawa	31.0	24.3	21.7	28.0
Mihintale	42.0	26.5	20.6	27.1
Anuradhapura (Tamil)	50.1	37.7	31.6	37.6

For example, in Ratnapura District such general weakness exist in the case of Kuruwita and Balangoda North, and in Anuradhapura district in Nochichiyagama and Horowapatana.

iii) The above findings may be partly due to the lack of adequate supervision and co-ordination of the programme.

Analysis at school level

A look at the achievement at school level in this island-wide test in the four subjects reveals a much more significant variation in averages from school to school. Although performance in science and mathematics is generally low all round, as shown in the analysis of results at school level seen from the school averages for the five circuits selected (Matara, Kurunegala, Kolonne, Kalmunai and Badulla) and in spite of the difficulties and handicaps with which the schools are faced in respect of teacher supply, inservice-training, etc., some schools have performed creditably well.

General analysis

As regards the findings of the results of the test in the remaining six subjects on the curriculum which were confined to certain selected electorates (See Table 5) one can arrive at the following conclusions:

i) In general, the level of attainment in these subjects, with the exception of English as second language, is satisfactory, particularly in that of aesthetic subjects which compare favourably with the national averages at the G.C.E. (Ordinary Level) examination.

ii) The performance in Pre-vocational Studies, which is altogether a new component in the curriculum is quite satisfactory thus showing the fact that the pre-vocational education programme, about which doubts seem to prevail in the minds of some parents, is operating satisfactorily in schools.

iii) The standard of English as a second language, as usual, tends to be fairly high in the urban areas and in the bigger schools, with a decline of standards in rural schools.

TABLE 5

Pilot Examination — National Averages

1. Sinhala	(First language)		40.2
2. Tamil	(First language)		42.4
3. English	(First language)		35.9
4. Science	(Sinhala medium)	25.3	24.4
	(Tamil medium)	23.7	
	(English medium)	24.1	
5. Mathematics	(Sinhala medium)	21.2	21.5
	(Tamil medium)	22.8	
	(English medium)	20.5	
6. Social Studies	(Sinhala medium)	27.6	28.3
	(Tamil medium)	28.2	
	(English medium)	28.4	

Examination of the pre-vocational study areas

The need for a change of curriculum

"Since political independence is more easily achieved than economic or cultural reconstruction, the practices and institutions chosen to replace the existing diversities were frequently those previously established by the colonial powers.

The idea of catching up with the rich countries exerted a pre-eminent influence on the thinking of the leadership in the developing countries. To a certain extent that idea prevented the leadership from elaborating original and viable models of society for their countries. Perhaps nowhere was this demonstration effect more pervasive and successful in dampening local initiatives to adapt to the socio-economic realities than in the sphere of education". (Education Sector Working Paper-December 1974).

Since the achievement of political independence, the major economic investment of the nation has been in the field of education. The provision of free education from kindergarten through university, state control of education at all levels and use of the pupils' mother tongue as the medium of instruction were some of the measures that supported an unprecedented expansion of school enrolment. However, the general expectation that education would by itself stimulate the increase of employment opportunities and generate economic development has not been realized. Although education was geared to a long-range desire for intensive

education and training in sophisticated technology, for both the urban and rural population, the traditional sectors of lower productivity comprising 60-80% of the population are compelled to rely on indigenous resources and little investment. Therefore, experience has dictated in different terms — that teaching programmes at the junior secondary level should have a close relation to the world of work, and should reflect the important occupations and industries practised in the local environment to help pupils become familiar with the range of available vocations.

The stressing of pre-vocational studies

It is for these reasons that the N.C.G.E. courses of study at the junior secondary level contain within its compulsory components a heavy load of pre-vocational studies, coupled with the study of national resources together with geometrical and mechanical drawing. Even the course guides in science and social sciences have been drawn up using examples applicable in agriculture, industry and trade.

It is extremely difficult to wean the pupils and particularly their parents away from the traditional concepts of what a school should, or should not teach. To accord parity of status to pre-vocational subjects along with others has not been easy, as tradition has attached social stigma to certain occupations and manual work in general. Great importance has been placed on the pre-vocational studies which comprise two of the ten compulsory subject areas of the junior secondary programme. The two subject areas are further strengthened by the compulsory teaching of national resources and geometrical and mechanical drawing.

During the four years a pupil has to study two subject areas, and satisfy the requirements of 12-terms of study. The courses have been categorized as 12-term, 6-term and 3-term courses, depending on the complexity and the time needed for the completion of each course. (See Appendix I)

The role of examinations in encouraging pre-vocational studies

An examination also contributes its share of pressure and influence to give this area of study its proper place in the curriculum. Although some attempt had been made to promote and encourage the study of pre-vocational subjects in schools from 1940 by including a limited number of subjects, such as agriculture, home science, woodwork, metalwork, ceramics, weaving, shorthand and typing in the G.C.E. (Ordinary Level) examination, it had been confined to a small number of schools, and did not carry weightage in matters of entry to higher education. Among the minimum performance requirements at N.C.G.E. for admission to the H.N.C.E. (Higher National Certificate in Education) course in grades X and XI, a pass in pre-vocational studies, together with first language, has been stipulated. Among the two subjects in which a higher level of performance, (A or B grade) is required for entry to the science

stream, the commerce stream, the language, humanities and aesthetic studies streams, one of the pre-vocational studies has been given a place. These policy measures have certainly made pre-vocational subjects worthy of serious treatment in the school as well as at examinations.

Obstacles to be cleared

On the other hand the authorities are conscious of the various problems that can contribute to a slowing-down, if not distortion, of the original concept of the programme. Among these is the shortage of teachers with the capacity and understanding to impart this training compared to other fields of teaching. Initially, the courses were selected by the schools depending on the availability of staff willing to try their hands in this new area of teaching. Whether such teachers could continue in the same school for the duration of the course was another problem. The school as an institution has developed as an artificial unit separate from the local community, even in rural areas, and consequently there must be a considerable change of attitude to encourage the teachers and students to learn from the local craftsmen.

The syllabuses and course guides have been prepared with great care by committees of teachers and specialists in the subjects, but their interpretation as a teaching-learning process is left to the teacher's intelligence and the resources available in the school. In-service training and consulting teachers have been made available during the last four years to give teachers as much guidance as possible.

Nature of the Pilot Examination

The N.C.G.E. Pilot Examination was conducted in 12 of the Island's electorates with the general objective of ascertaining the quality of the programme in its implementation. The assessment in pre-vocational subjects is in two parts; one is an internal assessment of the practical and theoretical work by the teachers, and the other is an external assessment by the Examinations Department through a written paper. The internal assessment becomes a component of the external examination.

Internal assessment

Internal assessment has an important part to play in the examining process, not only because certain significant aspects of a pupil's work in this area are not susceptible to external assessment, but because it can help teachers gain insight into the techniques of assessment which would be useful in their teaching.

Doubts have been expressed that the position of the teacher as assessor may affect the teacher-pupil relationship, and that in making his assessments the teacher may not be able to adopt the objective viewpoint of the external examiner. Adequate instructions have been given to teachers through Ministry publications to ensure as

far as possible that the assessments made are objective, and that the teacher restricts his assessments to specifics in pupil performance.

A plan for evaluation

The following general objectives and guidelines, in the form of leading questions, for formulation of specific objectives have been issued to teachers to help them in their selection of teaching contents and their evaluation:

GENERAL OBJECTIVE 1

To raise the vocational training of pupils to a satisfactory level of efficiency:

- What are the specific skills involved in the vocation selected for study?
- Which manual skills could be studied by pupils in grades VI to IX?
- Which skills can be taught in grades VI, VII, VIII and IX respectively?
- What is the level of attainment in each of the skills at each grade level?
- What is the time required (periods/hours/sessions) to help acquire each of the skills?

GENERAL OBJECTIVE 2

To master the knowledge content inherent in the selected vocation:

- What knowledge content is inherent in the vocation selected for study?
- What are the items of knowledge that could be understood by pupils in grades VI to IX?
- What knowledge items can be taught in grades VI, VII, VIII, IX respectively?
- What is the expected level of knowledge and understanding in each of the aspects?
- What instructional time is required to teach each knowledge item?

GENERAL OBJECTIVE 3

To acquire knowledge regarding main occupations of the community:

- What are the principal vocations of the people in the locality?
- Which of these vocations are being selected for study in the school?
- What information relating to these vocations should the students be given through the school programme?

— What are the pupils' attitudes towards the vocation/vocations studied in school?
— What attitudes do we expect of the students after completion of the course/courses?

GENERAL OBJECTIVE 4

To help understand that knowledge gained in the study of subjects such as mathematics and science could be applied in the study of vocational subjects:

— What are the subjects comprising the common curriculum of the junior secondary school?
— What course content in each of the subjects is expected to be taught in each grade?
— What are the general objectives of each of the subjects in the curriculum?
— With what subject/subjects and with what course contents can the pre-vocational studies pursued in the school be correlated without violating the general objectives?
— By teaching such correlated content material what knowledge, understanding, skills and attitudes are expected to be developed in the pupils, and to what level?

GENERAL OBJECTIVE 5

To develop self-confidence and a sense of dignity by being able to participate in economic productivity and services:

— What are the goods or the services that should be supplied by the pupils through their study of vocational subjects?
— At which grade level should the expected goods or services be supplied and at what level of efficiency?
— At what level of finish should the above goods or services be available for marketing?
— Is it possible to produce marketable goods through the development of specific skills under General Objective I at their maximum level of efficiency?
— What are the attitudes expected to be inculcated in the minds of pupils by getting them to produce marketable goods and services?

At the very inception of the reforms, teachers were provided with instructional materials on the types and techniques of evaluation and measurement indicating

their relevance and applicability in the field of pre-vocational studies. Detailed guidance and a time schedule for internal assessment of the pupils' work by the teacher were provided.

Some of the reasons for maintaining a progress chart

a) It is easy to have pupils' progress recorded on a chart.
b) It is easy to get an idea of the general progress of the class. It makes it easy to relate the work that has been completed, the activities going on, and the plans made for the future.
c) A progress record can also serve to stimulate the pupil for further effort, make him aware of his level of attainment, and the expected level of excellence.
d) It helps the teacher to assess his own teaching efficiency. He can form an idea of the achievement and progress of the class as a whole in relation to the objectives in mind.
e) The pupil is helped towards self-assessment in comparing his work with that of his peers.
f) It provides an opportunity for visiting parents to get an idea of the progress of their children and the teaching programme of the school.
g) It provides information about pupils needing special attention.
h) It provides information essential for planning and evaluating the instructional programme.

(N.B. — In preparing progress charts for display the possibility of negative effect on weak pupils must be borne in mind. Grouping of pupils according to their general ability in specific areas and assessing the group performance may be one method of overcoming this problem)

Importance of a plan for awarding marks/grades

The teacher attempts to evaluate the progress or achievement of a pupil through the marks or grades awarded on the basis of a test. If this is to be meaningful, the teacher's marking scheme should satisfy at least the following requirements:

a) All pupils should have a clear understanding of the criteria on which marks/grades are awarded. Pupils' awareness of the bases of evaluation and measurement both in written work and manipulative skills contributes towards increased efficiency.
b) Goals set for pupils in their tests should be within their capacity. Tasks that cannot be completed within the time allotted can lead to discouragement.

c) The marks/grades awarded should be acceptable to the pupils. Teachers must also be satisfied that the award is fair and just.

d) Marking schemes should be simple. They should not demand too much time.

e) Evaluating manipulative skills should be done periodically and systematically. Sudden deviations from the pattern can affect pupils' enthusiasm and confidence.

f) In evaluating manipulative skills, attention should be paid to pupils lacking in experience and aptitude. Designing special tests and marking schemes for these may be helpful in encouraging them to reach a satisfactory level of proficiency.

The teacher in charge of pre-vocational studies was expected to follow the guidelines indicated above and assess the pupils' knowledge, skills, understanding and attitudes on at least three occasions during the school term. The first test was to be conducted at the end of the first month, the second test at the end of the following month, and the third at the conclusion of the school term. Maximum marks to be awarded at each test were indicated as 50, 50 and 100 respectively. The total scores for the term were to be converted into grades on the following distribution:

The top	10% to be awarded A
next	20% to be awarded B
next	40% to be awarded C
next	20% to be awarded D
the last	10% to be awarded E

The cumulative grades for the eleven terms up to the end of the second school term in grade IX, (that is, the point of time at which the final internal assessment for examination purposes is made) were to be converted to average grades in terms of the same distribution. For purposes of determining the average grade, the following numerical equivalents were indicated

A = 10
B = 8
C = 5
D = 3
E = 1

The distribution of scores on this 'arbitrary' scale was stipulated with the idea of securing some degree of uniformity in measurement at school level by countering the possible tendency on the part of the subject teachers to bunch the grades near, around, or above the average. The fact that these courses were widely different in their complexity and approach and their evaluation was likely to differ from school to school depending on the facilities, material resources and the personnel, influenced this decision to regulate the weightage given to the examination at national level.

Although this could leave room for some good pupils in the best schools to be graded down as E, and some weaker pupils in other schools to be graded as A, it did not present itself as a controversial issue at the pilot examination. The performance at the centrally conducted written examination was thought likely to correct this situation to some extent. The weightage that the internal assessment carries at the final examination level is 45%. The final written examination carries 55%, comprising 35% for the pre-vocational study and 20% for the compulsory paper on resources of the nation attached to Pre-Vocational — group I, or Geometrical Drawing attached to Pre-Vocational — group II. There is no clear distinction between the two groups, and a pupil can list any of the pre-vocational subjects studied under Group I or II.

Practical examination in health and physical education

Health and physical education is one of the ten compulsory subjects to be taught at the junior secondary level and to be examined for the N.C.G.E. Physical training has never been a subject of public examination in the past. Therefore arrangements for island-wide practical tests were made in addition to the theory paper in health and physical education. The pilot examination was conducted in 12 electorates to gain an insight into levels of pupil achievement, problems of organization and training of examiners. The practical tests in connection with the 1975 N.C.G.E. were completed during the early part of June, and the scores communicated to heads of schools so that they could be recorded in the application schedules which were forwarded to the Department in early July.

Boards of Examiners comprising three members (teachers of physical education, or instructors briefed by Specialist Education Officers in charge of the subject) were sent round to schools to conduct these tests. For convenience, pupils of a number of schools had to come to a centrally-located school with play-ground facilities and equipment. The practical test was designed in two parts:

Part I — Test items

i) 50 metres run (Record the time)
ii) High Jump OR
Long Jump OR
Standing Broad Jump OR
Jump and Reach — one activity only, to record height/distance.
iii) *Push-ups* — to record number of complete push-ups.
Two different types expected from girls and boys.
iv) *Marching* — observe co-ordination, rhythm, carriage and poise.

Part II

Section A — Track and Field athletics (Starts & Sprinting, Relays, Long Jump, High Jump, Shot-putt, Discus Throw)

Section B — Organized games (Netball, Volleyball, Badminton, Soccer, Elle, Cricket, Throw-ball, Tenniquoit, Gymnastics)

i) Only one activity from Section A and one activity from Section B to be tested.

ii) The choice of activity should be left to the candidate.

iii) *Progress Charts* — The schools are expected to maintain Physical Education Progress Charts which will be presented to the examiners at the centres. These should be taken into account in awarding marks.

iv) *Special activities* — Participation in special activities such as the following should also be given consideration.

Sri Lanka Cadet Corps, Police Cadet Corps, Scouting, Guiding, Red Cross, St. John's Ambulance, Saukyadana First Aid Volunteers and membership of a school team participating at District/Island level.

v) *Allocation of Marks* — Final mark to be computed for —

— Part I — 20%

— Part II — 20%

Total for Practical Test — 40%

Specimen marking schedules for Athletics:

Netball

Attempt ALL FIVE of the following:

CATCHING, THROWING, FOOT CONTROL, SHOOTING, MARKING

i) *Catch* the ball in a stationary position, *move in any direction* and *throw* the ball using a Straight Shoulder pass or Underarm pass 3

ii) Run in direction of the ball sent into space, *catch* the ball *on the run,* and throw the ball Using a Bounce pass or Over-head pass 2

iii) Catch the ball with a *jump, land and sheet* — stationary or on the run. Full marks for correct technique only 2

iv) Make three attempts at shooting for goal from three places indicated. Two *successful* attempts carry full marks 2

v) Run in direction of the ball sent into space, catch the ball, pivot and pass using a chest pass or high shoulder pass within three seconds 1

TOTAL 10 Marks

Volleyball

i)	Any one method of serving the ball	2
ii)	Receiving the Service (breaking the ball or passing)	2
iii)	Boosting	1
iv)	Spiking	2
v)	Blocking	2
vi)	Defence (Retrieving the ball)	1
	TOTAL	10 Marks

Gymnastics

Points to be noted: Co-ordination, Flexibility, Balance and strength

Technique and Performance

Activities:	Cartwheel	2
	Forward Roll	2
	Backward Roll	2
	Side Vault/Astride Vault or Through Vault	2
	Handstand	2
	TOTAL	10 Marks

Internal assessment in the social studies programme

In the area in which provision has been made for the teacher's assessment to come into the national examinations is the field-work component in the integrated social studies programme. In place of the earlier subjects (history, geography, civics and economics) taught to some students at secondary level on an optional basis, an integrated four-year programme in grades VI, VII, VIII and IX was introduced with examinations as part of the N.C.G.E.

The integration has been achieved by the introduction of socially-significant themes for study at each level containing the background information, data and pupil activities essential for gaining the knowledge and ability to cope with the problems of community living. An integral element of this programme is the requirement that pupils should engage in observation of their own physical, social and economic environment, and take note of these in a field workbook. The objective of these exercises is to help the pupil gain the basic understanding and skills that may be necessary to cope effectively with the various facets in community life, and lead him towards a better appraisal of the social policies in operation through the various social institutions.

The teacher's assessment of the field-work of each pupil as reflected in the field workbook, carries 20% of the total marks for the subject at the final examination.

Guidelines for internal assessment

The class teachers have been asked to take the following points into consideration in assessing the fieldwork.

a) The fieldwork should take the form of application exercises on what has been learnt in the classroom.

b) It may also reflect activities not studied in the classroom, but relevant to the theme of study.

c) It should reflect the creative interests of the pupil. For example, in grade VI the pupil's attention is drawn to the resources of the school's neighbourhood, products and people's everyday work.
To gather such information and to select and present it in some order to show the inter-relationship requires a certain degree of creativity.

d) Credit should be given for the following skills:
ability to read, prepare and mark maps; ability to draw and read graphs; ability to read directions; ability to organize and present clearly the information gathered from statistical data, from interviews and from reading outside the class; ability to draw simple conclusions from evidence thus collected.

e) Evidence of the ability to make a critical assessment of the lesson, selection and use of source material, skill in taking notes, making reports and summaries of lectures and reading material; ability to analyse a problem and find possible solutions.

These assessments are expected to be done continuously at each grade level, and the final mark to be reported to the Examination Department should be arrived at on the basis of a maximum of:

8 marks for creative ability.
5 marks for information gathered.
5 marks for organization and presentation of facts.
2 marks for neatness.

Evaluation of the programme

At the pilot examination stage of the programme, several protests and critical comments appeared in the press regarding the field work book.

The objections were mainly based on:

a) Some parents taking upon themselves the work of preparing an acceptable field book to help their children gain a good grade.

b) Pupils making themselves a nuisance to parents who were themselves in no position to provide suitable information.

c) The expense involved in purchasing commercially prepared scrap-books and materials which poor parents could ill afford.

d) Children devoting too much of their home time on this project to the detriment of other school subjects.

e) Children cutting up valuable books and magazines at home to obtain pictures and statistical data.

These view points paved the way for further clarification of objectives and approaches to prevent certain teachers from over-rating the production of a scrap-book. The educational value of using improvised materials and independent pupil activity were officially emphasized.

The class teacher working with the pupils, and teams of teachers drawn from the same or neighbouring schools working with pupils in co-operative study projects in order to pool information and training, were some of the approaches advocated in teaching the integrated programme. Such team-work was considered especially valuable in rural communities with small schools staffed by one or two teachers.

The positive reaction of the parents has been one of appreciation. Most educated parents confessed that they came to realize through their children's work how little they themselves knew of contemporary society, and how various facts they only partially understood in their school days now appeared alive and active in their inter-relationships.

II. CONTINUOUS EVALUATION OF THE TEACHING PROGRAMME AT THE JUNIOR SECONDARY LEVEL

The changes that were introduced at the junior secondary level sought to correct wide differences in the provision of educational facilities in different areas of the country and reduce educational inequalities. They also envisaged a reduction of wastage and drop-outs, thereby raising the efficiency of the system at this level. In the achievement of these objectives the teacher plays the key role, and in addition to basic guidance given in the form of syllabuses, course guides, textbooks and in-service training, the teacher is being provided with instruments for the continuous evaluation of his own class teaching. To deal with this last point, an Evaluation Unit was set up under the Department of Examinations early in 1974. A dozen specialist teachers attached to this Unit are engaged in the drawing up of specifications of the educational and training objectives involved in all curricular resources made available to the teachers at the junior secondary level, and are designing instruments for measurement and evaluation with the primary objective of diagnosis and feed-back.

Since all schools follow a uniform teaching programme, these evaluation exercises will appear at mid-year intervals in grades VI, VII, VIII and IX on a national scale. The tests are comprised of multiple choice questions relating to significant aspects of the ten N.C.G.E. subjects for grade VI and were initially tried out in August 1974 in a random sample of schools, after which the items were analysed, revised and pre-tested. The interpretation of these results, providing a base for comparison of individual performances, is made available in a special booklet accompanying each test. This reduces the feeling some teachers have that multiple-choice test items are superficial test exercises requiring little thought, less insight and no understanding. This informative material conveys to the average teacher an idea of the significant teaching outcomes underlying the curriculum, possible techniques of evaluating them and a norm for the comparison of achievement levels of individual pupils and schools, plus guidance for remedial teaching. For many teachers this will mean a further extension of professional knowledge and experience beyond the routine classroom instruction.

Judging by the enthusiastic welcome given to this scheme by all teachers' organizations in the island, this project should lead to the establishment of an educational testing system in which teachers are increasingly involved and the testing procedures are used to stimulate the development of good classroom

practice as well as bringing about continuous and close co-operation of all educational agencies in order to create a national system of examinations thus giving more reliable information about the attainment of an ever-widening band of school leavers. This project will also serve as a channel of communication between curriculum formulation and the realities involved in the school system. It should bring to light ambiguities and gaps in the curriculum and possible remedies. It also gives the pupils the opportunity to familiarize themselves with systematic test material at intervals and enable them to assess their own progress before facing the public examinations at the completion of a four-year course of study.

In the first week of August 1975, nearly 600,000 pupils in grades VI, VII and VIII took these tests and assessed their own performance in relation to prescribed syllabuses. The tests for grades VII and VIII were systematically analysed after their administration and were standardized for use in the following year.

An extract from the Teachers' Guide to the Test in Social Studies in Grade VI is reproduced below in order to give an idea of the nature of the guidance given to the teacher.

Teacher's Guide to the Test in Social Studies
Grade VI

Introduction

In the multiple-choice questions included in tests in social studies, an attempt has been made to design into the test the general objectives of teaching this subject that educators want evaluated. As the teaching of this subject in an integrated form is a recent introduction at the junior secondary level and teachers also have to learn to teach it, an attempt has been made to formulate the questions in such a manner that some direction to methodology is also indicated by the test item. Teaching methodology that could be employed to evoke the best possible student response in teaching a specific unit of study has been taken into consideration in framing these questions. Therefore, in preparing these questions the general objectives of teaching a unit or course of study have been analysed into their most specific parts, and these specific objectives have been matched to the actual teaching-learning processes maintained in the classroom. This has been made possible by studying classroom situations and the teaching-learning processes involved therein. Therefore, these test items have been made instrumental in showing what field work could be associated with, and what skills could be derived from a given course content.

Another objective that was borne in mind in constructing test items was to ensure that subject integration in social studies be woven into the test items. This subject integration has given a more practical bias to the subject than when these subjects were taught in unrelated form as history, geography and civics. To enable

this, emphasis has been placed on a thematic approach in the tests rather than the knowledge of isolated facts. This may help to make these tests educationally more useful, as the test questions can demand more from the student than mere repetition of learned material.

Another objective behind this testing is to set standards in teaching at different educational levels. This is important because the performance level within different grades in a school, and between different schools varies considerably. An attempt is made to test not only what students ought to have learned, but also what they ought not to have learned. In framing 'distractors' the common errors and the pupils' misconceptions have been taken into account. This will help in the differentiation of students who have mis-information or misconception from those who are knowledgeable, thus helping the teacher to diagnose faulty teaching or learning and plan for remedial work.

The selection of questions that are important, appropriate, accurate and discriminating is done by 'pre-testing' where each question is followed by a statistical analysis that summarizes the kind of information obtained about the performance of those students tested. The difficulty of each question is represented by the percentage of students who answer a question correctly: the higher the correct percentage, the easier the question.

The ability of a question to discriminate between students of different academic abilities is a more complex matter. Here what has been taken as the criterion for discrimination between the high and low performances is the student's score on the total test of which the question is a part. Hence the relationship between students' success on a question and success on the entire test of which the question is a part is an appropriate measure of the power of the question to discriminate between the more and less able students.

The diagnostic value of each multiple-choice question depends on the responses given to each answer choice. This helps in analysing and interpreting test data, and gives a pointer to the confusions and misconceptions in the student's mind.

The questions which appear here have been taken from tests constructed by the Evaluation Unit in the Department of Examinations.

Question 1.

In section A of my village where I did a survey I found that more than 90% of the people lived in government housing schemes of different types. What conclusion can I draw from my study?

1. The population in this section has decreased.
2. The people there all have similar incomes.
3. They all own the houses they occupy.
4. There has been a pressing need for houses there.

Item Analysis Data:

	Responses				
Question No. 4	1	2	3	4*	Omit
% Upper Range	5	10	1	84	
% Lower Range	39	14	14	33	
Difficulty Index	.59				
Discrimination Index	.48				

*Correct Answer

84% of the high performers and 33% of the low performers have answered this question correctly. Therefore it has good discriminating power. This type of question was given as an indication to teaching methodology where students observe and make inferences and judgments. The first, second and third responses have functioned well in distracting the low performers. The student has to see these relationships and for example, that different *types* of housing schemes negate the 2nd response. It is pressure of population that makes government intervention necessary to build houses. This eliminates the first response.

Question 2.

Which of the following is a *primary* rather than a secondary source of information about the history of my village?

1. A newspaper article.
2. Folk tales told by elders in the village.
3. Findings from excavations.
4. Parts of a history textbook that tells about my village.

Item Analysis Data

	Responses				
Question No. 5	1	2	3*	4	Omit
% Upper Range	24	10	52	14	
% Lower Range	42	12	12	34	
Difficulty Index	.32				
Discrimination Index	.40				

* Correct Answer

This type of question was framed to impress on the student the idea of historical accuracy together with the authenticity or otherwise of the printed word. It is very important to the student of social studies to be able to separate fact from legend, and the importance is brought out from the high percentage of responses from the low performers to the 1st and 4th answer choices. This may be due to the belief that whatever is in print is authentic. 38% of even the high performers have fallen for this trap.

III. "CONFERENCE-MARKING" OF EXAMINATION SCRIPTS AND EXPEDITING ISSUE OF RESULTS

The Department of Examinations conducts an average of two examinations a week ranging from grade V scholarship examination at the lowest level in school examinations to Sri Lanka Administrative Service Examination for recruitment at the highest level of public service. But the examination that is most important, in terms of the size of the candidate population and the extent of national concern, is the General Certificate in Education at both Ordinary and Advanced Level.

The Ordinary Level candidates for the 1974 examination numbered 500,676 and the anticipated number for 1975 was 600,000 with approximately 50,000 sitting at Advanced Level. The Department had to plan ahead for the new N.C.G.E. examination which was held for the first time in December 1975 as well as the G.C.E. (Ordinary Level). Accommodating such large numbers of candidates, and completing all work connected with the two separate examinations within a stipulated period of time, was by no means an easy task.

In order that the Department and all connected agencies be geared to meet this situation in 1975, an experiment was carried out in respect of the 1973 G.C.E. (Ordinary Level) examination which paved the way for innovations in the system of assessing examination scripts and releasing results in record time.

The following table gives an indication of the improvement in the time taken to report results to schools and private candidates.

G.C.E. (Ordinary Level) Examination

Year	No. of candidates		Total	Dates of the examination	Date of release of results
	School	Private			
1972	208,218	165,895	374,113	1972 Dec. 12 to Dec. 23	1973 May 26
1973	240,669	178,385	419,054	1973 Dec. 11 to Dec. 21	1974 Feb. 09
1974	275,238	225,438	500,676	1974 Dec. 10 to Dec. 20	1975 Feb. 03

The quick release of results in this manner had the following advantages:

a) It enabled Heads of schools to prepare their programmes of work and time-tables and to plan for adjustments of teaching personnel early in the school year. The first-time failures had to be retained in school, while second-time failures had to leave.

b) It reduced the incidence of indiscipline in most city schools carrying large numbers of students 'awaiting results' and not being able to settle down to serious studies.

c) It enabled the failures amongst the students to settle down to a full ten months' repeat course of study, and the successful candidates to get on with their Advanced Level studies.

d) The reduction of this 'suspense period' was a matter of great relief to most parents who publicly expressed their appreciation of the innovation.

However, the aspect of this innovation that came in for much greater appreciation was the enhanced quality of assessment of pupils' performance which was also a major objective of the experiment. This was achieved by providing for Marking Examiners to assemble in groups of 15 — 20 and work together under the leadership of a trained Chief Examiner. This was a complete departure from the traditional system of posting the scripts with the relevant instructions to the examiner, who had about 5 weeks in which to complete the marking of 300 scripts during his leisure-time at home. He was obliged to contact his Chief Examiner at the outset of his marking, as well as immediately before recording the final assessments for necessary instructions and checking purposes. But stray instances of publicity gained by examiners who were seen to do their work in buses and trains, as well as enlisting the assistance of their students and family members, had badly undermined the public confidence in the examination results. When about 10,000 teachers are engaged as examiners, it is not likely that they all exercise an equal sense of responsibility and concern for the future of a set of anonymous candidates.

These innovative procedures were tried out in the 1973 examination and were improved in the 1974 examination.

1. *Selection of marking examiners*

One of the first steps to be taken early in the year was to decide on the selection of examiners and those basic qualifications that an examiner should possess to be selected as an examiner of one of the 52 subjects in one of the three media, Sinhala, Tamil or English.

It was decided to leave out all retired teachers and even those academically qualified officers of non-educational fields, some of whom had been functioning as examiners under the old scheme. It was felt that the teachers engaged in teaching, particularly, at the G.C.E. (Ordinary Level) grades of IX and X, and the Supervisory Officers in the education service — namely, Head Teachers, Education Officers,

Instructors and Lecturers in teachers colleges, Evaluation officers, curriculum development workers and textbook writers only were the appropriate people to be entrusted with the work of evaluation and measurement. Application forms were designed accordingly, and gazette notice issued calling for applications. Academic and professional qualifications as well as teaching experience were evaluated, and a point-system designed and incorporated in the application form, so as to enable the applicant himself to indicate the number of points he carried in order to facilitate selection at the Head Office. 45,000 applications were received for the 1974 examination, out of which 12,000 were selected.

The next step was to sort them according to the town and cities where they preferred to do the marking in the subjects and language medium of their choice. On this basis examiners were assigned to boards of 15 — 20 and attached to Evaluation Centres nearest their places of residence or work. An Evaluation Centre contains roughly 10 — 20 Boards of Examiners. 42 such Evaluation Centres were established in the main cities of the Island in 1974, and were served by 6 Co-ordinating Offices which handed the receipt of the scripts from examination halls all over the Island and posted them to the appropriate Evaluation Centres in the District.

Assignment details regarding each examiner were taken on record and confirmed.

2. *Despatch of scripts to the examiners*

There are 2,000 examination halls throughout the Island in each of which 150 — 200 candidates are accommodated. The supervisors of these examination halls are given specific instructions relating to the despatch of each day's scripts in each subject and medium according to the data compiled at the Head Office. If there is a board of 15 — 20 members to mark mathematics (Tamil) in Jaffna, Evaluation Centre No. 50 attached to Co-ordinating Office No. 5 in Jaffna Town, the Supervisor in examination hall 1350 in Galle had in his daily despatch instructions that Mathematics Tamil packet should be despatched to Jaffna Co-ordinating Office No. 5. That would be the only information he would have relating to this subject. When such packets are received by post in the Co-ordinating Office which has been established for this purpose for the period of the examination, they are checked and re-grouped in parcels to contain approximately 300 scripts per examiner. When the examination is over, and on the day prior to the commencement of marking, the Evaluation Centre Supervisor calls over at the Co-ordinating Office with necessary transport etc. and takes charge of all the parcels that are assigned to the different Boards in his centre.

In the morning of the first marking day each of the Chief Examiners in charge of a Board will call over at the Evaluation Centre Chief's Office in the same premises and take charge of all the packets assigned to his Board.

The Chief in turn assigns a composite parcel of 300 scripts to each of his assistants at random and records the assignment.

3. *Methods of ensuring uniformity in assessment*

A particular question paper may be set either by a board or by a single person. In either case the person involved is appointed Controlling Chief Examiner for determining the standard and preparing marking instructions in that particular subject. At the end of each day of the examination a sample of answer scripts in each subject is collected from a number of examination halls. On the following day the Controlling Chief Examiner assisted by five or six experienced marking examiners in Colombo, studies the question paper, prepares a tentative marking scheme and marks and assesses the sample scripts. In the course of their marking they continuously revise the marking scheme and instructions, and at the end of this marking session the Committee hands a finalized scheme and instructions to the Head Office for duplicating purposes.

Later, there is another meeting at which the Controlling Chief meets with the Senior Marking Examiners who function as Chiefs of Boards and discusses with them further details regarding instructions to be given to Assistant Examiners.

The Controlling Chief is also available for consultation by the Board Chiefs during the period the marking goes on.

The Chief Examiner in turn guides his team of Assistants on the lines indicated by the Controlling Chief and supervises the team on the spot right through the period of marking which is from 8 to 10 days. The Assistants report for duty in the morning and go on till evening. At the end of the day, all papers are returned to the custody of the Evaluation Centre Chief, who is normally the Principal of the School.

4. *The use of mark-sense cards*

While conference-style assessment and marking of answer scripts enhanced greatly the reliability of assessment and also reduced the time which would have been taken under the normal procedure by about three months, use of mark-sense cards was a completely new innovation.

Had we not resorted to the use of these cards, it would have taken a further three months to key-punch and verify over 3 million marks, as most candidates offered as many as eight subjects.

The mark-sense cards were produced to suit the needs of this particular examination and were obtained from Australia through the I.B.M. Services in Sri Lanka, and mark-sensing reproduction equipment was also imported. These cards, nearly five hundred thousand in number, were first pre-punched and carried information relating to Examination Centre Number, Subject Number, Prefix and the Index Number of the Candidates.

These cards were then sorted out according to the examination boards, and

were delivered one or two days after the commencement of marking. The examiners were given instructions on the completion of the cards explaining the process of how to automatically create punched cards using the pencil-marked data.

The advantages of the new system were:

a) An improved processing schedule, by eliminating the need to key-punch the data being processed in a very short time.

b) Greater security and secrecy. As the cards are being marked by the examiners themselves, it eliminates the need for any other person to handle the mark sheets.

c) Greater accuracy. As the examiners who prepare the mark sheets are themselves marking the cards, there is less chance of errors that can occur during key-punching, due to poor handwriting, etc.

The teacher-examiners appreciated these advantages and gave their fullest co-operation, and on this basis the Department was able to obtain Government approval for improved remuneration to the examiners in 1974.

5. *Payments*

The Assistant Examiner is remunerated on the basis of the number of scripts assigned to him. The marking fee for each subject depends on its complexity, and the time required to assess a script. The Chief Examiner is paid a fixed daily allowance for supervision and a fee for the re-checking of each of the Assistants' scripts, for which an upper limit has been set. The Evaluation Centre Chief and his staff as well as co-ordinating office staff are paid special daily allowances. To expedite payment of the 12,000 odd examiners throughout the Island special group paysheets were designed, and certified by the Chief Examiner of each Board.

A cheque for the total amount due to a Board drawn in favour of the Post Master General was sent to the Chief Examiner and by arrangement with the Postal Department the local post office, with the assistance of the Chief Examiner of the board, issued separate money orders to the individual examiners on the information supplied on the paysheet. This system enabled the Department to complete all payments to about 12,000 examiners within one month of completion of work in conformity with Government financial regulations.

6. *Evaluation of the scheme and special problems*

The success of the innovation depended mainly on the attitude of acceptance and appreciation of the objectives displayed by the large majority of teacher-examiners, who in most places had to work under trying conditions when the scheme was first tried out. With few exceptions, almost all the teachers were in sympathy with the scheme.

Its success also depended on the efficiency with which the various work-steps handled by a number of branches in the Department, as well as outside agencies,

were co-ordinated. The initial experiment in 1973 paved the way for a complete re-organization in the administration and management of the several branches in the Department to ensure a greater degree of co-ordination.

There are no facilities for re-scrutiny of the G.C.E. (Ordinary Level) results, but in order to check the reliability of the system in the case of the 1973 examination, an invitation was extended to all heads of schools to inform the Department of students whose results were obviously at variance with their internal assessments. Some private candidates also submitted their claims, and there were nearly a thousand grades under question. It was evident that most heads of schools had yielded to parental pressure. However six hundred selected cases were scrutinized and about 55 of these grades were amended mainly in the area of transferring marks from the scripts to the mark-sense cards. This took place in Boards where two or three teachers had been assigned exclusively to attend to the cards. This procedure was corrected in 1974, and one examiner was held responsible for all steps in the assessing, marking and entering. In the case of the 1974 examination, appeals were allowed, but selections for re-scrutiny were confined to those where a discrepency could be shown. Only 7 cases were amended out of 300 cases examined.

The procedure has now become a permanent feature as far as the biggest school examinations are concerned. This was applied in 1975 to both G.C.E. (Ordinary Level) and the new N.C.G.E.

The public response to the scheme has been most encouraging.

IV. ADMISSIONS TO THE UNIVERSITY ON EXAMINATION AND DISTRICT QUOTA SYSTEM

"Educational systems and policies have a regressive character which favours urban populations and middle and upper income groups. These groups, therefore, have a definite advantage in terms of access to and promotion within the system. Equalizing opportunities for access to education is a necessary but not sufficient condition to ensure social mobility through education. Providing equal chances for achievement both in and after school is a more difficult objective, as factors which cannot be affected by educational policies play a significant role.

Opportunities may be equalized somewhat by appropriate methods of selection and promotion such as quota systems or by improvements in the methods of educational finance. As a whole however equity through education can be achieved only within the context of broader social policies." (Educational Sector working paper — World Bank, 1974)

This section presents an account of an innovative procedure adopted by the Ministry of Education to bring about an equalization of opportunities for access to higher education which has been a subject of controversy during the last couple of years. Since it seriously questions the validity of some of the traditional concepts relating to examinations and their uses, it was considered appropriate to be dealt with here.

How students were admitted to the University in the past

In the early period of the Ceylon University up to 1959 the selection of students to the University was based on a written examination and a "viva voce" conducted in respect of those who had reached a satisfactory standard in the written examination. The viva was abandoned in 1959 on the grounds that it conferred a special advantage on pupils from established, prestigious high schools. The examining professors, who were themselves Old Boys of the big urban schools, were believed to act on the basis of their prejudices. Instead, a common paper in general knowledge was incorporated in the examination, but only for a few years.

The practical tests in the science subjects, which were a mandatory component in the examinations, in science, were also abolished in 1972 on similar grounds. In their place, the education supervisory authorities were entrusted with the task of supervising a continuous assessment programme in practical work in the schools,

but this assessment did not contribute to the rating of the individual candidates. Thus, admissions were determined solely on the basis of the aggregate of raw scores obtained in essay-type tests confined to the knowledge content in a combination of four subject areas relevant to those taught in the University.

During the period when all subjects were examined in one medium — English, there was no attempt to ascertain the extent of subjective influence but, when examinations had to be conducted in three language media — Sinhala, Tamil and English which generally coincided with the major racial divisions of the population, attention was paid to increased objectivity in the format of the test papers.

G.C.E. (Advanced Level) examination

The General Certificate in Education (Advanced Level) examination is held once a year in April for school candidates who have completed a two year course in grades XI and XII. Although this examination is one of scholastic attainment at the conclusion of senior secondary school education, its main function is deemed to be one of providing a basis for selection of students to the University. School candidates can appear for the examination on two occasions only, after which they leave school, and may appear as private candidates, but those who sit beyond the third attempt are not considered for University admission purposes. About 45,000 candidates appear for this examination but not more than 4,000 places are available in the University, therefore there is very keen competition to enter particularly in the Science Faculties. The Department of Examinations releases the G.C.E. (Advanced Level) results and awards grades on a five-point scale on the raw scores.

Standardization of marks for university admissions

Standardization of marks for university admissions commenced in 1971 in respect of admissions for the academic year 1972. This was introduced at the recommendation of a select committee appointed by the Minister of Education to report on university admissions. The formula to be used and the scale for standardization were specified by this committee. Since 1971, the raw scores have been standardized by the Department of Examinations at the request of the Central Agency for University Admissions in the University of Sri Lanka.

A candidate for admission to any of the university courses must offer four subjects from among a group of specified subjects at the G.C.E. (Advanced Level) examination and only those who have obtained a minimum of four ordinary passes, or in the case of those candidates who have applied to follow a course in medicine those with 3 ordinary passes and securing over 25% in the subject of botany, are considered as having satisfied the minimum requirements.

The formula for standardization

The following formula was used for converting the raw scores to standard scores:

$$X^1 = \frac{SD^1}{SD} (X - M) + M^1$$

Where X^1 = any standardized score
SD = Standard Deviation obtained
SD^1 = Standard Deviation required
X = any raw score
M = mean obtained
M^1 = mean required

For purposes of university admissions, 50 and 12 were taken as the mean and the standard deviation required. Scores in all subjects and all media relating to the group of candidates who had satisfied the minimum requirements in the G.C.E. (Advanced Level) examination results were standardized to this uniform scale.

Out of a total of 40,500 candidates of the 1974 examination 14,000 candidates had satisfied minimum standards. In 1972 and 1973, candidates were admitted in order of merit in terms of the aggregate of standardized scores in the subjects relevant to the course of study.

In 1973, a committee was appointed by the Minister of Education to review the standardization procedure as well as admissions to the University. This committee advised the Minister to retain the subject and media standardization, and select the students for each of the courses in order of merit for each of the administrative districts in proportion to the distribution of general population.

Some considerations that led to the district quota system of admissions

The acute competition for university places in the recent past brought into sharp focus the historically created inequalities in educational opportunities among the different regions.

Despite the better provision of buildings, science laboratories and teaching staff to the provincial high schools, which have also increased in number during the last two decades, there has always been a temptation for the brighter pupils of these schools to seek places for their senior secondary education in the few urban high schools.

The conviction has grown that while the schools in the city provide essential educational facilities, the city itself provides the environmental background more conducive to success at examinations, as well as securing employment subsequent to school career.

Government officers, as well as teachers employed in the provincial districts, have been in the habit of establishing their permanent residence in close proximity to

prestigious schools in the cities in order to ensure a good secondary education for their children. Their own contribution to the development of the community in the area of employment tends to be minimal, while those left to be concerned with the affairs of the local school are neither knowledgeable nor influencial. If they were, they would not leave their children in the local school. While the provincial schools were losing their best pupils in the top classes, the best of the city schools were getting crowded beyond capacity to the extent of undermining educational efficiency. Most pupils had to supplement their 'free' class lessons with the expensive private tuition which is one of the attractions in the city.

In this context, it was a rare provincial high school that could enjoy the continued services of a full complement of qualified staff at the G.C.E. (Advanced Level) courses, and the few bright but poor pupils were compelled to make do with such unequal opportunities, and nevertheless compete on equal terms with the city candidates at the selection examinations.

The operation of the system

The basic procedure followed in the selection of students to the University is one of limiting the competition to each district.

After deciding the passes at the G.C.E. Advanced Level, a list of candidates who have obtained the minimum requirements to enter the various streams of study is prepared, and their scores are standardized subject-wise and medium-wise. Merit lists in the different fields for each of the districts are then prepared.

A candidate's district is decided on the basis of the school in which he had the major part of his senior secondary education.

The quota of university vacancies in each stream of study is decided in proportion to the ratio of the general population in each district with the total population of the country. Some districts have been short of sufficient passes to fill the number allotted to them, and these vacancies were re-allocated according to the same population ratio.

Tables 6 and 7 give a picture of the distribution of the vacancies among the districts in the admissions for the year 1975 when the district-quota system was implemented in full for the first time.

EVALUATION

As was indicated at the outset, this procedure of selection came in for criticism mainly from those in the developed districts, namely Colombo and Jaffna, which were the only districts adversely affected.

The procedure is now a subject of investigation by a special committee of Cabinet Ministers.

TABLE 6

University Admissions in 1975
Distribution of Students by their Districts of Origin

District	Population Percentage	Medicine & Dental Surgery		Engineering and Applied Sciences	
		*Selection on District Basis	+Hypothetical Selection according to Order of Merit	*Selection on District Basis	+Hypothetical Selection according to Order of Merit
Colombo	21.03	110	132	70	129
Kalutara	5.76	15	11	20	16
Kandy	9.34	24	17	31	11
Matale	2.49	8	03	8	3
Nuwara Eliya	3.57	2	02	6	—
Galle	5.80	29	18	20	24
Matara	4.63	08	05	15	20
Hambantota	2.68	1	—	8	—
Jaffna	5.54	29	61	20	56
Mannar	0.61	1	01	1	—
Vavuniya	0.75	—	—	—	—
Batticaloa	2.03	6	04	7	2
Amparai	2.14	—	—	1	1
Trincomalee	1.51	3	01	5	5
Kurunegala	8.09	12	03	26	9
Puttalam	2.99	3	02	10	2
Anuradhapura	3.06	2	01	4	1
Polonnaruwa	1.29	1	—	1	—
Badulla	4.84	2	01	7	2
Moneragala	1.51	—	—	2	1
Ratnapura	5.21	11	07	10	5
Kegalle	5.13	8	06	18	3
Sri Lanka	100.00	275	275	290	290

* 100% selected on District Basis

\+ 100% selected according to order of merit.

TABLE 7

University Admissions 1975

100% selected on district basis and 100% selected according to order of merit.

District	Highest mark of candidate/candidates failing to be selected in Colombo and Jaffna and the lowest mark of candidate/candidates qualifying for selection in other Districts			
	MEDICINE		ENGINEERING	
	District Basis	Merit Basis	District Basis	Merit Basis
Colombo	*262*	*257*	*289*	*274*
Kalutara	226	258	273	275
Kandy	229	257	259	277
Matale	220	270	263	280
Nuwara Eliya	260	260	246	—
Galle	232	258	278	275
Matara	237	257	284	275
Hambantota	245	—	240	—
Jaffna	*268*	*255*	*294*	*275*
Mannar	262	262	218	—
Vavuniya	—	—	—	—
Batticaloa	227	265	256	284
Amparai	—	—	303	303
Trinoomalee	221	293	276	276
Kurunegala	225	272	248	279
Puttalam	250	257	248	278
Anuradhapura	240	277	244	287
Polonnaruwa	248	—	268	—
Badulla	231	277	244	284
Moneragala	—	—	229	277
Ratnapura	211	257	231	279
Kegalle	246	258	237	278

List of courses of N.C.G.E. pre-vocational studies

(a) *Twelve-term courses of study*

102 Agricultural Science
103 Sugar Cane Industry
104 Fishing Industry (Marine)
105 Fishing Industry (Inland)
106 Leather-work
107 Woodwork
108 Wood-Carving
109 Plywood-work
110 Lacquerwork
111 Weaving
112 Textiles and Garment-Making
113 Lacework
114 Textile Printing
115 Batikwork
116 Business Studies
117 Marketing
118 Home Science
119 Catering
120 Fibre Industry (Coir Work)
121 Fibre Industry (jute, hemp etc.)
122 Reed Industry
123 Palm Leaf Industry
124 Canework
125 Bamboo Industry
126 Palmyrah Palm Based Industries
127 Metalwork
128 Tinkering
129 Clay-work
130 Printing
131 Photography
132 Paper Manufacture
133 Radio Mechanics
134 Motor Mechanics
135 Gem Industry
136 Sericulture

137 Book-binding
138 Embroidery
139 Brass-ware Industry

(*b*) *Six-term courses of study*

201 Food Crops
202 Fruit Cultivation
203 Plantation Crops
204 Minor Export and Cash Crops
205 Paddy Cultivation
206 Floriculture
207 Animal Husbandry
208 Nursery Management
209 Bee-keeping
211 Food preservation — Plant products
212 Food preservation — Animal products
213 Sweet Toddy Products
214 Florist Art
215 Manufacture of Rubber Goods
216 Soap Industry
217 Cosmetics-making
218 Electrical Wiring
219 Bicycle Repair-work
220 Motor-cycle Repair-work
223 Haircutting
224 Hairdressing
225 Masonry
226 Manufacture of Cement Goods
227 Clay Products (Natural white-earth clay)
228 Mineral Prospecting
229 Brick Industry
230 Cashew-nut Industry

(*c*) *Four-term courses of study*

301 Coconut-palm Industries I (Palm Leaf)
302 Coconut-palm Industries II (Coconut Shell Crafts)
303 Coconut-palm Industries III (Ekels etc.)

304	Paper-pulp Products
305	Paper-flower making
306	Wesak Decorations
307	Curio Products I (Paper-based)
308	Curio Products II (Wood and Metal-based)
309	Curio Products III (Waste products-based)
310	Cloth-flower Making
311	Cloth-doll Making
312	Bark-fibre Weaving
313	Slate-making
314	Joss-stick Making
315	Gypsum Industries I (Chalk)
316	Gypsum Industries II (Pastels and Crayons)
317	Gypsum Industries III (Distemper etc.)

The titles appearing in the Asian series were prepared by educators in Asian Member States at the request of the Asian Centre of Educational Innovation for Development which is associated as one of the partners in IERS.

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