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EDUCATIONAL STUDIES AND INVESTIGATIONS

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FOREWORD

THIS volume gives brief summaries of the Investigations carried out in 1936, 1937, 1938 and 1939 by students in the Second Year of the Course for the Bachelor of Education degree at the University of Melbourne.

The course, which is post-graduate, is of two years' duration. The first year is primarily a training in practical teaching and is carried out at the University and in the recognized practising schools. The second year, however, is designed for the teacher in the field and is concerned mainly with an educational investigation backed by a course in Experimental Education.

The object of publication of these summaries is to make available conclusions which have been reached and to provide a guide for future students in selecting subjects and planning their work. Any reader who finds in this book a topic or summary of particular interest to himself or his work is welcome to examine the investigation at the Library of the School of Education. It should perhaps be pointed out that many of the investigators are experienced teachers from widely differing types of schools, both State and non-State, in Australia and overseas. These investigations, one may hope, will prove a definite contribution to the literature of educational research in Australia.

G. S. BROWNE,

Professor of Education,

University of Melbourne.

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INVESTIGATIONS SUBMITTED
IN 1936

A STUDY OF ARITHMETICAL PRINCIPLES THROUGH AUTOMATIC NUMBER RESPONSES

J. ABERDEEN

THE aim was to discover, by means of scientific tests, whether correlation existed between the results of simple arithmetical speed and accuracy tests and the results of mental tests.

Method

Tests were carried out on a large number of pupils between the ages of 8 and 12 years, but the writer's remarks were confined to the 11+ age group, because at this age the weighing effects on number facts of lack of automaticity should have disappeared.

Intelligence Tests

Preliminary practice was given to familiarize pupils with test procedure, and then Forms A and B of the Otis Intermediate Tests were given to the 11+ age group. Form A was given again after a lapse of six weeks.

The graph illustrating the results shows wide variations in the I.Q.'s of the individual pupils from one test to the next on both the positive and negative sides. As these variations occur over the whole range of intelligence, it is not possible to establish, from any one test, a pupil's correct I.Q. In actual practice it was found that a single test failed to grade more than 75% in order of ability suitable for school purposes.

Speed and Accuracy Tests

Pupils were made familiar with test conditions by practice, and Burt's speed and accuracy tests were then used for the four operations. In these tests Burt has used all available

figures and combinations in pairs scattered over the whole paper so as to have the level of difficulty uniform throughout the paper. These tests were given on three occasions, the first in June, the last after one week's holiday in September.

Individual variations from one test to the next were equally prominent here. When the mental ages were compared with the arithmetical ages, a startling difference in the spread was apparent. While for the 68% of pupils of average ability the spread for mental age was $2\frac{1}{2}$ years, that for arithmetical ability was $4\frac{1}{2}$ years. From this it would appear on the surface that there is little or no correlation between mental ability and arithmetical ability. But are we justified in drawing this conclusion from the scores? Are these pupils' scores themselves reliable?

Individual cases were then examined closely, and it was found that the reasons for the variations could be summarized thus:

1. Number facts not automatic. The major weakness occurred in addition and subtraction, and in bridging from 20 to 30 and beyond.
2. Physical defects, particularly of the nose and throat variety.
3. Variation in mental attitude to test. Two types of students were noted:
 - A. Throws emphasis on accuracy.
 - (a) Not prone to take a chance.
 - (b) Taught to be neat, tidy and accurate at home.
 - B. Throws emphasis on speed.
 - (a) Will take a chance.
 - (b) At home lives a dynamic life.
4. Weakness in rote and logical memory. Terman's logical memory test was given and eight figures were supplied in correct and reversed order. Five per cent.

were shown to be defective in rote memory, and in all cases the scores made in the speed tests were low.

5. **Lack of writing speed.** Figures were written for one minute at the pupil's ordinary speed. In the 11-year-old group a spread of thirty figures existed between the fastest and the slowest pupil. This factor would definitely weight the individual's score.

The following factors were also examined but were found to have little bearing on the test:

1. *Environment.* The majority of pupils came from good homes, and environmental factors did not appear to affect scores.
2. *Schooling.* Most pupils started school between $4\frac{1}{2}$ and 5 years and had a common school background. Differences in age of starting did not appear to have affected any score.
3. *Number sense.* Only one pupil appeared to be deficient in number sense, although her I.Q. was about average.

Now, when the scores of those individuals who had been influenced by the disturbing factors had been eliminated, it was found that the difference in spread practically disappeared and a close correlation existed between mental ability on the one hand and, on the other, speed and accuracy as tested by simple division.

Conclusions

These tests showed that to secure accurate scores in the different educational subjects similar standardized tests should be given several times in order to reduce the probable margin of error. Pupils being human, their mental alertness varies from day to day. Each pupil's score, no matter what the subject, needs study to determine whether or not it is weighted by any factors whatsoever.

AN EDUCATIONAL SURVEY OF THE WILLIAMSTOWN
DISTRICT

S. T. ARTHUR

The aim was to examine the educational facilities existing in the Williamstown district, to consider the extent to which they met the needs of that district, and from these observations to formulate a reorganized scheme.

Method and Conclusions

The growth of education from the settlement of the district in 1837 to the present day was traced, and the additions and modifications made necessary by the changing industrial conditions were considered. From data collected it was deduced that the district had reached a stable condition in respect of number and type of population, and, because of this stability, was a suitable locality for the institution of a long-range policy embodying a modified educational scheme.

The primary schools were found to be situated in the most advantageous centres with regard to school population. A disquieting feature from the point of view of modern education was the fact that 10% of the pupils in primary schools were retained in Grades VII and VIII.

The aims, courses, attendance, years of attendance, and ages at leaving of pupils of the Girls' School were reviewed. Results showed that the school is meeting the needs of the girls of the district in providing a training in the domestic sciences with a sound cultural backing, but that the large numbers leaving before completion of the course do not take full advantage of the facilities.

The High School, which caters for the bulk of the secondary education of the district, was measured against Butler's criterion that 'the secondary school should exist in sufficiently diverse forms and should be administered with sufficient elasticity of method to enable it to adapt itself to the needs of a complex social organism.' A brief survey of the building showed that certain structural alterations were desirable to meet these ends.

An analysis of the distribution of the school population placed the centre of weight in Footscray territory and incidentally showed the added burden imposed on parents by costly train travelling. The necessity for an organized plan of directing pupils towards the correct type of education was made evident by the large numbers transferring into the school at the standard of Grade VIII: no excuse can be offered for the transfer of E Form pupils from a Central School, involving the unnecessary and undesirable feature of two breaks in the pupil's school career.

The standard deviation and spread of ages of pupils in attendance in 1936 showed that in every form pupils were more than a year under the normal age as specified by the Education Department; 80% are under the age of 14, while the Victorian Year Book showed that in all High Schools in the State only 33% are under this age. The problems arising with respect to the under-age pupil do not become apparent till the Leaving Certificate stage, as the school results for Intermediate Certificate approximate closely to the State average over a number of years, but, while the number of passes in each of the subjects of the Leaving Certificate is in practically every case higher than the State average, the number actually passing Leaving Certificate falls below the State figure. It seems that pupils are able to cope successfully with four subjects but not with five. In any case it cannot be argued that pupils of the age of 14 are sufficiently mature to obtain the maximum benefit of a Leaving Certificate course whether they pass or not.

Over a ten-year period records show that, of 100 entrants at F Form standard, 56 continue to Intermediate Forms and 23 commence the Leaving course, but less than 20 present for the Leaving Certificate examination. Of the above, 31 obtain the Intermediate Certificate and 10 the Leaving.

Forty-one per cent. of the pupils leave at the age of 14 and a further 32% on reaching 15, exclusive of those who transfer to other types of school. These figures will explain

the absorption of 30% of exit-pupils in semi-skilled and unskilled labour.

The curriculum follows the usual division into professional and commercial courses with elective subjects at the Leaving Certificate stage. Without entering into the controversy whether the subjects and content are suitable for the I.C. and L.C. pupil, it is claimed that some modification is necessary for those who do not complete the four-year course.

Some consideration of the facilities offered for sport and physical education reveals the fact that, while the local Council has catered for adult sport in the district, the provision of playing grounds as distinct from play-grounds leaves much to be desired.

In conclusion, the writer enters a plea for a consideration of the claims of some 500 children who pass out of the educational world at the 8th Grade standard or its equivalent, and suggests an investigation into the extent to which the economic factor contributes.

With the assurance of unvarying conditions in this area, it is suggested that a school functioning on the lines of the English Modern School—freed from rigid academic prescriptions, and with ample scope for art, craft and music—would ‘round off’ the education of those not adapted to the higher branches of study and those who, unfortunately, through force of circumstances, cannot take full advantage of the longer secondary course.

THE INAUGURATION OF CENTRALIZED EDUCATION IN VICTORIA

C. L. BARKER

The writer's object was:

- (a) To trace historically the steps by which Victoria gained her present State-controlled, secular, free and compulsory system of education.

- (b) To analyse critically the working, in the first decade of its operation, of the Education Act of 1872 which conferred these benefits.

Method

The investigation called for detailed historical research into all contemporary educational literature. Besides this, the Victorian *Hansard* and Statutes for the years 1860-80, the Press and the writings of pamphleteers were found to be mines of information.

Conclusions

The first part of the investigation was concerned with the factors which led to the establishment of a State-controlled, secular, free and compulsory system of education in Victoria.

The author found:

That the system grew out of special conditions existing in Victoria in the period 1850-70.

That the heightened conception of State sovereignty following the separation from New South Wales was a factor in the evolution of a centralized education system.

That centralized control was inevitable in a State where the bulk of the population was congregated in one centre and the remainder was a scattered, pioneering type of people, largely illiterate and usually not interested in educational matters.

That denominationalism, well established in the school system prior to 1870, was a big obstacle to the passing of the 1872 Education Act.

That the influx of people consequent upon the Victorian gold discoveries made a radical revision of the former system of education a real necessity because most of the newcomers were democratic in outlook and not over-devout, and hence desired a free, common and secular education for their children.

That Childers' 1851 Report on Victorian Education contained the germ of the centralized system, and that the

Common Schools Act of 1862, despite its failure to improve education, took the first legislative step towards centralized control. The Education Report presented by the Royal Commission of 1866-7, by showing the necessity of divorcing religious from secular teaching, made the 1872 Act inevitable. The Act for the Abolition of State Aid to Religion, passed in 1871, was the prelude to the later and greater Act.

That many smaller factors contributed to attainment of centralized, compulsory and secular education, namely, the speeches and writings of Henry Parkes in New South Wales, the work of the Victorian Education League, and the movement of educational thought in England in the sixties.

The second part of the investigation traces the passage of the Education Bill through the newly elected Parliament, which was more or less pledged to legislate for secular, compulsory and free education. After being ably launched by Mr. Stephen, the Attorney-General, the Bill met its most implacable opposition from Roman Catholic members, who fiercely denounced the exclusion of religion from the schools. Other members vainly attacked the excessive centralization of education, while others doubted the wisdom of conferring too wide powers on the political head of the Education Department.

The Act, which became law on January 1, 1873, contained a unique combination of educational principles, to be embodied in a State-controlled, secular, compulsory and free system of education.

To implement the Act immediately was a difficult matter. A 70% increased enrolment meant an increase in the number of schools, teachers and inspectors, and this involved a much greater expenditure on education.

Centralized control, even though it discouraged local interest, certainly gave uniformity and reasonable efficiency and economy in education to the infant State.

The legal minimum of attendance was fixed too low in 1872, and too little heed was given to the quality of the education which the children were compelled to receive.

The odious system of payment by results was unfortunately contained in the 1872 Act.

Although too little attention was given to the recruitment and training of teachers and no clause provided for their classification and promotion, this very omission facilitated the passing of the Public Service Act in 1883, which remedied many defects of the 1872 Education Act.

This Act, passed in Victoria sixty-six years ago, became the basis for the educational systems of all the other States and still remains the foundation stone of our educational edifice despite changed sociological and educational conditions.

RECENT DEVELOPMENTS IN SCHOOL MUSIC IN ENGLAND AND THE UNITED STATES

A. BEATRICE BOARDMAN

The aim was:

To give a picture of the subject as it is being taught at present in schools in England and the United States; to discuss its status, aims and methods, the employment of mechanical aids, methods of recruiting and training teachers, and the application of psychological tests for the discovery of rare talent in the school population; and, finally, to point out possibilities for Victorian schools.

Method

The investigation is a descriptive, critical discussion based on a variety of recent courses of study, text-books, song-books and other relevant publications.

Conclusions

1. Music as a school subject meets the demands of modern educational theory and practice, and of trends in the musical life of the community towards a truer understanding of real musical values.
2. The 'social' aim is stressed more often in the United States than in England, where the attitude is more

thoroughgoing and serious; but the influence of the subject on the character and personality of the school-child is valued highly in both countries.

3. The subject has been accepted as a necessary part of the curriculum, with organized subject-matter (not merely class-singing, although this remains an important feature), with recognized teaching methods, well-planned courses of study, its own equipment, often its own room, sometimes its own library or section of the school library, and its own trained teachers. Skillful use is made of the gramophone, pianola and broadcasting.
4. No other subject forms a stronger link between the school and the community, and a feature of the movement in both countries is the manner in which school music is being fostered by local and national organizations quite outside the educational system. In the United States psychological tests of musical talent provide a proved means of revealing and confirming outstanding ability.
5. Many activities cluster around the term 'music,' but, while some authorities fear that these are ousting fundamental training, it appears that they are being dovetailed into a general plan which is giving intellectual happiness to the young citizens of a worried world.

TUITION BY CORRESPONDENCE IN VICTORIA

A. T. BROWN

The writer's object was to give an account of the work of the Correspondence School in the primary, secondary and teachers' departments.

Method

The matter of the investigation consists principally of a study of the work of the School in its three sections, the system of examinations, and modern developments.

Conclusions

1. A more liberal system of staffing is needed.
 2. A revision of the secondary curriculum, especially for those students who do not intend studying for matriculation, is essential.
 3. Hobbies and projects could occupy a larger part of the curriculum.
 4. A reference library, for teachers and students, is urgently needed.
 5. The success achieved by the school magazine should warrant its publication at least twice a year.
 6. Broadcasting facilities should be extended.
-

RAISING THE SCHOOL LEAVING AGE

MONTAGUE BROWN

Scope and Conclusions

The Need.—It is probable that the material factor of unemployment rather than the inherent value of education is causing attention to be given to the need for increasing the period of compulsory education. The case for education thus seems to rest on our failure to solve the social problem. The demoralizing effect of enforced idleness is noted. One-quarter of the unemployed are under the age of 25. The age of 21 is a critical age for all young people in work; 75% of juvenile jobs are 'dead-end.' Juvenile factory employment is increasing in Victoria. There is a gap of a year between the leaving age (14) and the apprenticeship age (15). A table showing the national distribution of income amply demonstrates the necessity of providing allowances for the majority of those likely to be affected by the longer school period. The writer refers to conditions in the U.S.S.R. Many countries have already raised the leaving age to 15 and 16. The projected English scheme is explained, but its principal defect—the permission of exemption on somewhat

nebulous grounds—is noted. Finally, is the education given in the schools sufficiently valuable to warrant their retaining scholars for another year?

Leisure.—The problem of the right use of leisure cannot be solved in itself but only as an adjunct to the solution of the more urgent problem of work. An irresistible tendency for the worry and labour of work to be carried over into leisure produces unbalanced compensations. History teaches the most profound lessons of the evils accruing from the maldistribution of work and leisure. However, in spite of unfavourable conditions (in Italy and Germany, for example), the schools must do what they can, by enriching the curriculum, to prepare children for the profitable employment of leisure. The responsibility rests on educators to evaluate the power of the forces making for and against social and educational freedom.

Inequality of Opportunity.—Only a small proportion of pupils continue education beyond the elementary stage. The scholarship system, besides being only a feeble palliative, is an acknowledgment that inequality exists. Catering only for the best of the poor, it disregards modern educational principles. There is a serious lack of conformity between talents and positions because of prejudice and parental ambition. At present pupils are cut off from education when their need is greatest.

Philosophy.—If school experiences are not more valuable than those provided by any other institution, the school has no valid claim on the pupil's time. The principle of Education for Progress is practically a dead letter. The exclusion of politics from the school curriculum negates it. If pupils are to grow into progressive, active citizens, politics, the art of the government of men in social groups, must be studied. The problem of the school leaving age is the focus of conflicting philosophies.

Rural Education.—This is a tremendous problem. The rural community is noted for its cultural backwardness.

Long hours of work preclude educational leisure. There is a steady drift of enterprising types to cities. A correct estimate of the value of country life, plus large-scale production and the union of small farms, seems to point to a solution.

Finance.—This is always the question in any undertaking except armaments. We cannot solve the educational problem without first solving this. The cost of raising the school leaving age in Victoria would be £630,000—£500,000 for accommodation, £130,000 for training of teachers.

THE ADAPTATION OF SCHOOL LIFE TO MEET THE NEEDS OF THE PUPILS

ELLEN CHRISTENSEN

It should be noted that the information sought was for solving a particular, not a general, problem. The school under consideration was a small and economically favoured girls' school. Some of the conclusions may perhaps have a general validity.

Method

A series of questionnaires was prepared and given to the pupils in Form VI (15), I.C. (20) and Sub-I.C. (32). The questions concerned curriculum, teaching and learning methods, general knowledge (reading, current topics, art), and moral values (traditions, service, liberty, punishment, rules, honesty, etc.).

Answering, for whole or part, was voluntary, and anonymity was provided for. The material obtained was classified and deductions were drawn.

Conclusions

I. *The Pupils and the School in Relation to Society.* Many pupils showed that they had little conception of the mutual obligations of the school and society. The rest recognized the obligations—on the material level among the younger pupils, in the sphere of education among the seniors.

There was a strong general desire to know more of outside affairs in politics. The actual knowledge of current events was good, but gained from reading newspapers and from the home rather than from the school. It would seem that the school should do more, partly by providing information and opportunity for discussion, and even more through excursions, attendance at public lectures, and social service; that is, by direct contact with the outside world.

In matters of culture the pupils were worse off. The quantity and quality of books read were poor—26% of Sub-I.C., 46% of VI, and 70% of I.C. reading on an average less than half a book a week; and there was a poor standard of appreciation and achievement in pictorial art, music, literary and craft work. Preparation for Public Examinations interfered most with the reading of seniors. There was a remarkably strong demand for more craftwork. The need for the School to throw off the chains of examinations, or to modify the nature of examinations, as well as to make internal adjustments, presents itself as the solution to the problem.

II. *Curriculum and Methods.* The curriculum proved from the answers to be an unreal preparation for life and unattractive as an occupation for school days.

About one-third expressed dissatisfaction on the former count, and of those who thought that school prepared them for the future most put down the advantage to the socializing effect of school life and not to the subjects taught.

Out of fifty-three who wished to marry, thirty-four could not cook, thirty-five could not make a home attractive, and sixteen had no housewifely skills whatever.

Very few of the subjects taught proved to have much general popularity. English was the favourite throughout, and for two out of the next three places French and History were consistently chosen, with Biology taking a place in the two upper forms, and Sport running a close second to English in the lowest form. Mathematics were most

unpopular, closely followed by sciences in the lowest form. In the examination classes, where selection among subjects was possible, less antipathy was shown towards any of these.

The chief reasons for liking subjects concerned content which appealed to the mind, while, for disliking, difficulty and uselessness were noted as reasons. Sport and Drill were favoured by almost everyone. In all three forms these shared a period per week on the timetable.

Both for future and present purposes, then, the curriculum obviously needs revision, with emphasis less on abstract subjects and more on physical and practical ones, and with provisions for a much wider range of subjects to provide for individual preferences.

The answers provided sound criticism and also some surprises.

The system appeared to hold back the better pupils and not provide enough help for the weaker members. The last point was emphasized by the fact that 49 out of 67 asked for more explanation of work than they got in class, while 52 out of 67 indicated that they helped others with their work, 40 stating as the reason for this that those whom they helped could not otherwise get sufficient assistance. Thus the system failed to provide the most fundamental and elementary thing required of it.

In written work the short-answer question was much more popular than the essay type, though seniors showed appreciation of the chances for intellectual discovery provided by the latter.

Answers showed that home-work was not a source of worry for pupils, the time taken for it varying, on an average, from one-and-a-half to three hours a day, four days a week. Hours of sleep per night were from nine to ten; three to four spare periods daily were deemed necessary if home work was to be abolished.

Examinations found as many supporters as opponents. There was a similar even division of opinion regarding the respective value of praise and criticism as a stimulus to work.

The general conclusion to be drawn from this section is again that we need methods to provide for the individual.

III. *The Pupils as Persons.* Through lack of space this section had to be abandoned. The material was intensely interesting.

THE PRINCIPLE OF ACTIVITY

D. B. COUTTS

Method

The subject is discussed under the following headings: the formal lesson, the year's work, classification of pupils into dull and clever groups, externally imposed discipline, the necessity for student self-government, the need for co-education, the project, the problem of converting old buildings to new uses, group play-acting, the cramping effect of external examinations, the difficulty of comparing the standards of two groups of pupils, one of which has worked along traditional lines and the other on the activity plan.

Conclusions

1. Character is more important to successful living than intellectual development; but both are highly desirable.
2. It is difficult to test or examine pupils working under the self-activity principle.
3. Examination systems are practically useless from the point of view of education and character development.

A CRITICAL EXAMINATION OF THE RESULTS OF THE NEW CURRICULUM

J. S. CROCKER

The aim was:

1. To examine critically the various subjects of the new curriculum.

2. To discover whether criticism coming from secondary schools, that fundamentals are suffering as a result of the new curriculum, is borne out by investigation.
3. To discover whether, as a result of the introduction of the new courses, the pupil is better able to think for himself.

Method

As the new curriculum had been in operation for only four years, actual proofs of its success or otherwise could not be obtained. Therefore it was necessary to have recourse in the main to the opinions of those directly concerned with or affected by the application of the new courses. Help in this direction was given by teachers from the Lee Street State School, North Carlton State School, University High School, Collingwood Technical School, Coburg High School, and MacRobertson Girls' High School.

A critical examination of the new courses was made and due consideration given to the opinions of teachers in these schools. Examination results of pupils at Lee Street School and of those who had gone on from there to secondary schools were collected in an attempt to show that there had been no lowering of the standard in essential subjects. A questionnaire was sent out to past pupils in an endeavour to discover the branches of knowledge they had found most necessary in their particular occupations.

Finally, an unsuccessful attempt was made to obtain from employers of labour opinions on the type of youngster being passed on to them.

Conclusions

1. There has been no lowering of standards in essential subjects.
2. Since the advent of the new curriculum the junior technical schools are receiving a better type of pupil than in the past.
3. The new courses have secured the interest of the pupils.

4. The human products of the new curriculum are better able to think for themselves than was the case under the old curriculum. The pupil of to-day will not take all that he is told without question, and this leads him to discover things for himself. This is true education.
5. Lack of sufficient equipment has been a hindrance to the carrying out of most courses.
6. The use of the project method has led to a good deal of display in which there is little of real educational value.
7. Lack of knowledge of the aims of the new curriculum has worked against its success in some cases.
8. The competitive element has robbed sport of a great deal of its value. Lack of sufficient playing fields is preventing many present and past pupils from taking an active part in sport.
9. External examinations are having a cramping effect upon the teacher.
10. The lack of a good school library hampers pupils carrying out research.
11. The opportunity given to a pupil to work up a topic for himself, to present it to the class, and to answer questions put to him by the class, gives him confidence in himself and enables him to express himself before an audience.
12. The widening of the history course tends to make the modern pupil a little more international in outlook.
13. The new methods of attacking literature have led to a greater development of the critical faculties.
14. The use of dramatization has also tended to develop the pupil's confidence in himself.
15. The opportunity given for individual work in Art has led to the discovery of talented individuals.

THE HIGHER ELEMENTARY SCHOOL AND CENTRAL SCHOOL
IN AUSTRALIA COMPARED WITH THE CANADIAN JUNIOR
HIGH SCHOOL

MARY J. DWYER

The writer of this investigation has drawn largely on her personal experience of the schools considered, and gives information on significant matters of actual practice which could be known only at first hand. The sections dealing with Winnipeg are the most authoritative. The account of English schools and Victorian Central Schools is less thorough, but deals with interesting aspects of the life of these schools, such as music, physical education and languages in the curriculum, the status of central school teachers, fees, maintenance, and grants.

THE PRESENT STATE OF THE RELIGIOUS SYLLABUS IN
ROMAN CATHOLIC SCHOOLS IN AUSTRALIA

R. E. P. FDDY (BROTHER FREDERIC)

The writer's object was to ascertain the content of the doctrinal instruction given to pupils in schools controlled by the Roman Catholic Church in Australia.

Method

The matter is presented in three Parts.

Part I occupies the first three pages, and is concerned with the reason why the investigation was undertaken, the statement of the problem, and an outline of the procedure adopted.

Part II is devoted to the presentation of data. After some six pages taken up with preliminary remarks on the field of inquiry, the actual results are presented. Each official syllabus in the Commonwealth is examined, its contents tabulated, and an analysis and summary made. The subjects included in each syllabus are taken one by one, and a comparative survey is essayed.

In Part III general conclusions are drawn and criticisms made on a comparative basis, use being made of two American syllabuses and of current works on Religious Teaching. These and four general impressions, occupying in all some ten pages, conclude the work.

The Appendix gives an outline of the two syllabuses used in Part III. The printed syllabus from Scotland arrived on October 21st, too late for use to be made of it for comparisons, but it has been inserted in case it should prove useful later on to others.

No works have been consulted other than those specifically mentioned in the text. The nature of the inquiry did not seem to necessitate anything beyond the analysis of the existing syllabuses.

THE PLACE OF EXTRA-CURRICULAR ACTIVITIES IN VICTORIAN SECONDARY SCHOOLS

NANCY E. EDHOUSE

The aim was to discover the extent to which the objectives of secondary education are achieved through extra-curricular activities.

Method

I. Questionnaires were sent to teachers in twenty-three different schools, the replies were used to provide a general account of the exact place and significance of extra-curricular activities in each school, and of the opinions regarding them. This is given in Part A, which is purely descriptive.

II. A study of the principles underlying the policy of extra-curricular activity was undertaken. These principles are given in Part B, which is a critical analysis.

III. In addition two minor investigations were made—

- (a) of the relation of scholastic and athletic ability,
- (b) of the interests of adolescents.

Conclusions

1. Extra-curricular programmes in schools of all types show remarkable uniformity. Games are universal, extremely varied and popular, have the approval of all educationists, and are of immense value.
2. Physical culture is better taught than previously, but is still inadequate.
3. The house system, variously organized, has great value.
4. Student participation in school control is the exception rather than the rule. It has great possibilities, but is beset with dangers.
5. Assemblies are fairly general, but often of very little value.
6. Social functions are frequently held, but under present conditions have little significance.
7. School publications provide a valuable experience where it is possible to put the entire work of publishing and printing in the hands of the pupils.
8. Clubs, of various kinds, are of immense value. Many schools have none.
9. We have most to learn from the American school. Such educationists as Dewey, Kandel and Jacks show that extra-curricular activity provides for just those 'desirable' and 'higher types of activities' which it is the function of the school to teach and to reveal.

General Conclusion

Extra-curricular activity at present plays a small part in school life.

THE TEACHING OF GEOGRAPHY

F. G. ELFORD

This was an investigation into the teaching of geography as specified in the revised Course of Study of 1934. The aim was to record:

- i. Observations regarding its treatment in primary schools.
- ii. Its value, under existing conditions, to pupils who may or may not proceed to a secondary school.
- iii. Suggestions for the improvement of the status and scope of such teaching.

Method

I. From school records of sub-intermediate pupils at Ballarat High School during 1935 terminal results in geography were analysed and compared with those in other subjects. Pupils' progress was noted. Comparison was made between pupils who entered at post-eighth-grade stage and those who had completed two years of the secondary school course.

II. A knowledge test was given to first-year pupils at Ballarat High School in 1936—i.e., post-sixth-grade pupils of primary schools. Results were examined and compared with half-yearly results. Answers were analysed. Note-books and project-books prepared by these pupils at primary schools were examined.

III. In 1936 a knowledge test was given to three parallel sub-intermediate forms at Ballarat High School, composed of pupils who entered as post-eighth-grade pupils of rural and city primary schools and pupils who had completed two years of the secondary course. Answers were analysed and results compared with terminal results. Note-books and project-books prepared in primary schools were examined.

IV. The following topics were discussed with various teachers of primary schools:

- (a) Suitability of entrance tests given.
- (b) Work done in note-books and project-books.
- (c) Various aspects of matter and method.

V. The following were discussed with two district inspectors:

- (a) Their views on the present treatment of geography in primary schools.
- (b) The writer's conclusions.

Conclusions

- A. An evaluation of the teaching of the new course in Geography.
 - 1. For pupils who do not proceed to a secondary school the subject is of greater interest and gives a wider outlook. It is doubtful, however, whether such pupils leave school with the interest and attitude desired.
 - 2. Pupils who do proceed to a secondary school have a keener interest, but their knowledge and methods are very vague.
- B. The present state of Geography.
 - 1. Geography is a very much neglected subject.
 - 2. The aims and methods of the teacher are vague.
 - 3. The teachers' attitude towards the subject leaves much to be desired.
 - 4. Teachers' knowledge of the subject is not sufficiently comprehensive.
 - 5. The spirit of the revised curriculum is not sufficiently understood by teachers.
 - 6. Text and reference books being used are limited and narrow.
 - 7. Suitable apparatus and aids are lacking, and those available are not used effectively.
 - 8. There is evidence of a lack of balance between various aspects of the subject.
 - 9. Modern methods of teaching are weak. Sequence, correlation, incidental and comparative methods, and methods of encouraging child activity are not being used effectively.
 - 10. Recorded work by pupils reflects the unsatisfactory treatment of the subject. Too much attention is given to note taking. Sketches, diagrams, etc., are neglected.

11. Examinations and the teacher's idea of their significance exercise a considerable influence on methods of teaching.
12. Geography does not receive fair consideration in the timetable.
13. There are not sufficient research workers amongst teachers.

Suggestions for improvement are given, and samples of pupils' recorded work are appended.

SALARY SCALES: COST OF APPLICATION TO VICTORIAN PRIMARY CLASSIFIED TEACHERS, 1933-34

E. ELLIOTT

The object was to analyse the salary bill for Primary Classified Teachers for the financial year 1933-34 and to compare it with salary bills which would result from the application of new scales of payment. In setting up any salary schedule the main considerations are:

- (a) The determination of the minimum salary.
- (b) The determination of the maximum salary.
- (c) The time allotment, and rate amount of increments.
- (d) The differentials (if any) for Head Teachers as distinct from Assistants.
- (e) The recognition, financially, of additional professional training.
- (f) Sex as a basis for variations of salary.

These are discussed in general terms.

Four possible scales were set out and discussed. The maximum of the third class for Classified Primary Teachers was in each case made the maximum, and £204 the minimum for men.

The Scales

1. Male minimum, £204: female, £183.
Male maximum, £456: female, £372.

Twenty-one yearly increments of £12 for males and £9 for females.

A promotion increment of £12 for men and £9 for women for the holding of a University Degree.

A differential of £12 (men) and £9 (women) for Head Teacher as distinct from Assistant.

2. Male minimum, £204; female, £180.

Male maximum, £456; female, £372.

Twelve yearly increments of £21 for men and £16 for women.

3. Male minimum, £204; female, £168.

Maximum for men, £420; women, £348.

Twelve increments of £18 for men and £15 for women.

A differential of £24 for male Head Teachers in present Classes IV and V, and £24 for women. A £36 differential for male Head Teachers corresponding to Class III.

4. Male minimum, £204; female, £177.

Male maximum, £420; female, £345.

Twelve increments of £18 for men and £14 for women.

Differentials: £18 for male Head Teachers in Classes V and IV; £18 for women. A differential of £24 for male Head Teachers in Class III.

A promotion increment of £12 (men) for a University Degree, and £9 for women.

(This scale received the fullest discussion as one involving all the essentials.)

The final stage of the investigation is devoted to the difficult points encountered in the application of different scales in Victoria, as well as to the advantages to be gained.

Conclusions

The conclusion is reached that any new salary scale properly conceived might well form the basis of a programme of reconstruction within the service.

THE EFFICIENCY OF THE CINEMA AS A CLASSROOM AID
*Conducted at the Brunswick Technical School with twelve
sections of second-year boys (approx. 230)*

W. EUNSON

The investigation was an endeavour to show by experimental enquiry the comparative quality of lessons taught with and without the aid of the cinema, and to test the permanence of the impressions gained from the respective lessons. An attempt was also made (a) to study the special technique of the film lesson, (b) to survey the whole field of the silent films offered, (c) to estimate, through classroom use, the quality of certain individual films.

Method

The twelve sections were divided arbitrarily into two groups of classes. To these various classes there was given, according to a prepared scheme, a series of Film Lessons and Ordinary Lessons. The subject matter of the Ordinary Lessons was as nearly as possible identical with that of the Film Lessons, and was given in each instance along the lines of the film treatment with the assistance of any aids other than the movie-camera. It may be cited in passing that the combined class averages of the sections in each group showed a variation from one group to the other of only 0.7% over six examinations. These combined class averages of 61.0% and 60.3% are an indication of the ability of the boys used in the experimental work.

A comparison was made with the Eastman American experiment of 1926 (Freeman and Wood 'Motion Pictures in the Classroom'), and for one lesson topic (the New England Fisheries) the actual film used in the American experiment was available for this investigation.

The testing of impressions was carried out by giving a test paper on the day following the lesson and by a further test given five weeks later. The questions were in a number of instances of an easy type, because the students tested

represented a wide range of intelligence, and the last thing that was desired was to discourage the weaker pupils.

Conclusions

The results of the tests as tabulated in the investigation warrant the following conclusions:—

1. As many students of the film groups scored at the highest level five weeks later as did those of the ordinary lesson groups tested the day following.
2. Of those boys who failed in the later test only 25% were of the film group.
3. Fewer pupils failed in the film groups, when tested five weeks later, than in the ordinary lesson groups when tested the day after.

While methods will vary from teacher to teacher the writer would affirm one cardinal principle in the technique of the Film Lesson. The class must be taken to the film with a definite background of knowledge which the film will amplify by its vivid representation. Maps and diagrams are a waste of film length and can be studied in the introductory periods. The films should be shown twice, once as a whole, and once in units.

The survey of available films led the observer to note a poverty of films vitally related to any school syllabus; a lack of teaching method within the films; and a failure to stress certain fundamental facts and leave the less important details to be discovered by the class.

The investigation revealed that the film in school creates intense interest, and the combined result of 1,100 test papers showed a decided gain by pupils in the Film Lesson. Further, it is probably not possible to test the best that the film gives.

In conclusion, it is suggested that no school where library facilities are poor is wise to introduce the cinema until some systematic attempt is being made to supply films suited to the school syllabus. Such a supply would infuse new life into a valuable educational development.

TEACHING COMPOSITION—A COMPARISON OF TWO METHODS

J. FINLAYSON

The aim was to assess the relative values of two methods of teaching composition. The investigation was undertaken because the compositions of Victorian children seemed inferior to those of English children, and because one investigator had found composition to be a particularly unpopular subject. The inference seemed to be that the teaching method used was unsatisfactory.

Method

An experiment in different methods of teaching was carried out at the Richmond Technical School. Two parallel classes were examined in composition at the beginning of the year. For the next twenty-one weeks each class was taught composition for forty minutes each week by a different method.

The control class was taught on orthodox lines. They were given a subject chosen from some old examination paper and told, without any previous discussion, to write on it. They were warned to be careful about writing, spelling and punctuation, and to avoid the use of slang.

Boys in the experimental class were allowed to choose their own subjects, though occasionally stories, picture shows, pastimes and pets were suggested as possible topics. Subjects from geography and history were sometimes suggested, but always with some fresh appeal. For instance, instead of being called upon to produce an essay on Columbus and his voyage, the boys were asked to write on 'The conspiracy to overthrow me. Extract from the diary of Columbus.' Every alternate essay was in the form of a letter.

The topics were intentionally made easy and interesting because the object of the lesson was considered to be not the acquisition of information but development of the power of expression. Free discussion beforehand was therefore

encouraged, and conversation and argument were allowed, as well as narrative and description.

The play spirit and some idea of purpose were introduced into every lesson as far as possible. The boys were not warned about spelling, punctuation, grammar or writing for fear of setting up inhibitions which would prevent clear and forceful expression. Sometimes they were not even expected to complete the essay, but only to write the introduction, the conclusion, or some particularly exciting paragraph. Help in spelling or the choice of words was given to any boy who asked for it.

Corrections for the control class were on the usual lines. The compositions were taken up and read by the teacher, mistakes crossed out and corrections written in. When the books had been returned the boys were told to write out the corrections.

Methods of correcting the work of the experimental class varied. At least one essay in every four was discussed with each boy by the teacher. The chief concern in this personal marking was to praise the boy for excellences rather than condemn him for faults. A hint quietly dropped was often the only correction made.

In the early part of the year the teacher collected the books and marked mistakes by means of a set of symbols placed in the margin opposite the lines in which errors occurred. When the boys received the essays again they corrected every mistake. After some practice they were allowed to change books and mark one another's composition on the same plan.

Sometimes, while essays were being written, the teacher walked round and noted the best essays. These were then read aloud. After the essays had been read they were discussed by the class, good and bad points were noted and marks assigned.

Klapper's method, outlined in *English in the Junior High Schools*, was also used occasionally. While the boys were writing the teacher went round making a note of each error.

He then wrote an essay on the board containing every error noted. Underneath was written the total number of errors to be found. The class then set to work to discover as many as possible. The dictation lesson period was used for this.

Conclusions

Owing to reorganization of classes some of the boys were moved to other classes, and by September there were only nineteen left in the experimental group, matching nineteen in the control group. To estimate their respective improvement the thirty-eight were allowed to write on any topics they chose provided that these had not been written on before. The results were tabulated and then checked by students at the Emily McPherson College, and it was found that the experimental group had improved 6 26 times as much as the control group. In spelling the control group was superior to the experimental group. It was also found that those who did best in the initial test did not tend to gain or lose more than those who did worst.

SUCCESS OF PHYSICAL SCIENCE CANDIDATES IN LEAVING PHYSICS AND CHEMISTRY

E. D. GARDINER

In 1927 the Victorian Schools Board sought to liberalize the study of the sciences at the Intermediate stage by the introduction of Physical Science, to be taken instead of the two separate subjects, Physics and Chemistry. The course has many obvious advantages, but the question whether it gives an adequate preparation for Leaving Physics and Chemistry has arisen.

This investigation was an attempt to find whether candidates who took Physical Science at the Intermediate stage succeeded reasonably well in passing Leaving Physics and/or Chemistry.

Method

The work was begun with the idea of tracing the performances, in Leaving Physics and Chemistry, of those pupils who took Intermediate Physical Science, and of comparing the percentages of passes for each year in these two subjects with those of pupils who studied Intermediate Physics and/or Chemistry as a basis for further work. (In the following the latter are termed 'other candidates.')

It was found necessary to confine the investigation to the results of candidates from Class 'B' schools, the required information being available from the records of the Public Examination conducted by the University of Melbourne. The following data were obtained:

1. Percentage of passes of Physical Science candidates in Leaving Physics and Chemistry for each of the years 1928-35.
2. Percentage of passes of other candidates in Leaving Physics and Chemistry for each of the years 1928-35.

Before comparing these percentages year by year it was necessary to get some idea of the abilities of the groups concerned, and to take this into account in making comparisons. The only available index of ability was to be obtained from the results of these candidates in either of the Intermediate or Leaving Certificate examinations. It was decided to take the number of subjects passed at the Intermediate examination as a measure of the ability of a candidate, and the average of these as a measure of the ability of the group. When these results were obtained it was found that the numbers in each group were too small for the measure to be reliable. However, by combining the results over the eight years it was possible to draw some conclusions since the groups were larger and the percentages therefore fairly significant.

The results revealed a great difference in the percentage of passes in Physics (57%) and Chemistry (43%), and a closer study of this difference was made. That the adequacy

of the preparation provided by Physical Science was not the only factor influencing the results was shown by a study of the results of the other candidates. It was found that the highest percentage of passes in Chemistry for these candidates occurred in the years when a large number of candidates were repeating the examination.

Conclusion

It is thought that the results show that the Physical Science candidates are reasonably successful in passing Leaving Physics. Owing to the operation of several variable factors it was not possible to compare this success with that of the other candidates. However, the success achieved seems to show that Intermediate Physical Science gives a satisfactory preparation for the study of Leaving Physics. For Leaving Chemistry it does not provide such a satisfactory foundation. This difference in adequacy as a preparation is probably not wholly responsible for the difference in percentages which is also revealed in the results of other candidates. On account of several factors operating it appears to be more difficult for the average student to pass in Leaving Chemistry.

THE HIGHER ELEMENTARY SCHOOLS OF VICTORIA

C. I. GAZZARD

The writer's special purpose was to examine the growth of Higher Elementary Schools in Victoria, to evaluate their achievements up to the present, and to show, if possible, how they might more adequately meet the needs of the community.

Method

References used

- I. All material used—facts, figures, etc., relating to Higher Elementary Schools—was obtained from Departmental records, particularly the following:

'Form Z'—Enrolment, etc.

'Form D'—Attendance, Ages of Pupils.

'Form XIII'—Curriculum.

'Form XIV'—Ex-Students' Destination Form.

Education Department Regulations and Amendments.

Victorian Statutes.

Education Gazette.

Annual Reports of Minister for Public Instruction, Years 1930 to 1935.

The Journal—Publication of Victorian Teachers' Union.

II. Other references:

Handbook of Public Examinations, University of Melbourne.

Education in Australia. Ed. G. S. Browne.

History of State Education in Victoria. (Sweetman, Long and Smyth.)

Australian Schools through American Eyes. (Cramer.)

Education of the Adolescent in Australia. Ed. Cole.

Year Book of Education, 1935. Ed. Lord Eustace Percy.

Education of the Adolescent. (Hadow Report.)

American Junior High School. (Briggs.)

Studies in Comparative Education. (Kandel.)

Reliability of Examinations. (Valentine.)

Conclusions. (With Summary of Recommendations)

Scope and Environment

1. There is a need for increased attendance of district students. Closer co-operation between Group Leaders and Teachers of rural schools, working through District Inspectors, would help to bring this about.
2. Existing facilities for provision of books, transit allowances and maintenance grants should be made more widely known to parents in rural districts.
3. Increased grants toward establishment and maintenance of bus or rail services would bring additional district students to schools.

Length of Course

4. The compulsory attendance age should be raised to 15.
5. The course should cover three years from the Qualifying Certificate Examination.

Types of Course

6. Greater variety of courses should be provided in each school, yet the essentials of a sound general education should be retained.
7. There should be an immediate increase in the amount of manual work taught in the first and second years of the course.
8. There should be freedom for each school to develop its own courses, subject to Departmental approval and supervision, on lines suited to the needs of the district.
9. Additional changes to bring about the proper and full development of changes suggested in Recommendations 6, 7 and 8 are necessary.
 - (a) Increased number of teachers, especially of manual subjects; such teachers to be trained for some general subject teaching as well.
 - (b) Increase in number of pupils taking courses.
 - (c) Additional equipment and buildings.
 - (d) Great increase in Government expenditure on education.
 - (e) Education of public in belief that changes outlined above are necessary.

Examinations

10. The Merit Certificate as at present constituted should be abolished.
11. An Intermediate Certificate should be instituted at end of present third year (D Form); such certificate to be issued by the Education Department, if necessary, and to state type of course taken, subjects passed, and average of marks obtained.

Staffing

12. Large post-primary sections should be separated from primary schools, and made into separate secondary schools with secondary headmasters. This measure

might be introduced gradually. and would be contingent on the adoption of previous recommendations.

13. Advisory Councils for H.E. Schools should be set up to operate on similar lines to those existing in High Schools.

Methods of Instruction

14. There should be less teaching for examination results and wider use of such methods as projects, integrated courses, etc.
15. F Form students should be placed under the control of one teacher for most subjects, preferably a teacher with primary and secondary experience.

Equipment

16. Increased expenditure on buildings is necessary, especially on equipment. Libraries, above all, should be improved.
17. Greater power should be given to local authorities, e.g., Advisory Councils, in the matter of providing equipment.

Extra-Curricular Activity

18. Formation and development of clubs of various kinds, community efforts, etc., would raise the tone of schools.
19. In order to develop powers of leadership and the sense of responsibility encouragement should be given to all forms of self-government among pupils.

A SURVEY OF THE EDUCATIONAL SYSTEM OF SEVENTH-DAY ADVENTISTS IN AUSTRALIA

W. J. GILSON

The aim was to study the extent to which this system is realizing its ideals and its objectives, and to inquire into the efficiency of its operations and the contribution it is making to a solution of the educational problems of to-day.

Method

The essay was prepared in two parts. The first section sets forth the principles that have led the denomination to establish and maintain a separate system of schools, and gives an outline of the beginnings of their educational work in Australia. It concludes with an account of the attempt made in 1930 to develop a co-ordinated system of education which should provide for the children and youth of the church in Australia from the beginning of school life to the completion of a college career. The whole scheme provides for primary schools leading on to central schools, which in turn prepare students to enter one of the denominational boarding schools. In addition, a correspondence branch endeavours to provide for those unable to attend one of these institutions.

The second part consists of a report on the system as it is operating in the schools. This is based (a) on the experience of the writer, who for four years (1930-34) directed the schools of the denomination in Australia and New Zealand, and (b) on the replies to questionnaires sent to some of the more experienced teachers in the employ of the denomination, and more especially to those who had been in charge of their schools for at least two years. Replies were received from the two boarding institutions and from eleven day schools scattered throughout the States and representing both city and country districts.

Conclusions

An analysis of the facts and figures indicates that the system is realizing its aims, and that in some features, particularly the industrial phase of its boarding schools, it is making its own definite contribution to the educational life of the community.

AN EDUCATIONAL SURVEY OF BALLARAT AND DISTRICT

W. A. GLOVER

The aim was:

1. To classify existing educational facilities and the distribution among them of the school population in the district surveyed.
2. To estimate the effect in this district of raising the school attendance age to 15 years.
3. To devise a possible scheme for reorganization of post-primary education in the district.

Method

After defining the district and obtaining from the District Inspector a list of schools in the area selected, the writer sent a carefully framed questionnaire to the three main types of school—State elementary, State secondary, and private. The questions necessitated numerical answers obtainable directly from the usual school records. Some standardization to permit of comparison of answers was necessary. A stamped addressed envelope was included to facilitate replies. About 90% replied. The numbers so obtained were then tabulated, and these tables provided the basis for subsequent analysis. Subsidiary sources of information included Departmental records, newspaper files, and conferences with selected educational authorities in the district.

Conclusions

1. School population in the district is distributed approximately as follows.
 - (a) At the post-primary stage are 38% of pupils; at the primary stage 37%; at the sub-primary stage 25%.
 - (b) Of the post-primary pupils 28% were in the supplementary grades, VII-VIII.
 - (c) Private schools cater for 21% of the school population, State elementary schools for 60%, and State secondary schools for 19%.

Method

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2. Taking as a guide the destination of exit pupils for the year 1935, it seems that the educational facilities in the district adequately meet the vocational needs of the district.
3. The effects of raising the school attendance age to 15 years may be summarized as follows:
 - (a) About 400 additional pupils would be added to the State School population, over 300 of these being in Ballarat itself.
 - (b) There would be 1,860 pupils of ages 12-15 to be catered for, of whom 500 approximately are already in existing post-primary schools.
 - (c) There is at present insufficient accommodation in certain types of post-primary schools, e.g., technical and girls' schools, for this number of pupils.
 - (d) On the present basis of post-primary staffing about 20 to 25 extra post-primary teachers would be required, assuming that teachers at present engaged in teaching supplementary grades VII-VIII were still to be employed in the post-primary stage.
 - (e) Transport into Ballarat for pupils from country centres (thus centralizing post-primary teaching) would be made possible by using existing transport facilities for approximately 75% of the pupils to be catered for, and by running one supplementary road service for another 20%.
4. Reorganization of post-primary education in the district would probably involve:
 - (a) Topping elementary schools in the district after Grade VI so as to treat the post-primary stage as an educational unit in separate buildings apart from the primary grades.
 - (b) Retaining the present High School and Boys' Junior Technical School.

- (c) Establishment of a new multi-purpose Girls' School offering parallel courses of at least three years' duration with a common first year.
 - (d) Reorganization of the Girls' Preparatory Technical School as a Girls' Junior Technical School.
 - (e) Improved facilities for transfer from one school to another without educational handicap in the early years of all post-primary courses, i.e., a greater similarity in curriculum in their early years.
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THE PROBLEM OF THE UNEMPLOYED BOY IN A PROVINCIAL CITY

C. I. GREEN

The special aims in the investigation were:

- (i) A survey of the avenues of employment for boys in Bendigo, and an estimate of the number of boys competing for positions.
- (ii) A survey of the educational qualifications of boys leaving school during 1935, in order to determine to what extent employment was affected by educational achievement.
- (iii) A study of the relation between age and juvenile unemployment.
- (iv) A study of the relation between juvenile delinquency and unemployment.
- (v) An account of the attempts being made in Bendigo to deal with juvenile unemployment.

Method

The method adopted was to trace the careers of boys leaving school during two separate years—1928 and 1935—from which it was possible to form an approximate estimate of the probable number of positions falling vacant during a given period.

For an examination of the educational achievements of boys leaving school during 1935 accurate figures were obtainable from the schools concerned. Boys were classified according to the grade reached before leaving school.

Data for study of the relation between age and unemployment were also obtained from the school records of the boys concerned and, in the case of certain older unemployed youths, from the records of the Honorary Organizer of the Boys' Employment Movement in Bendigo.

Finally, the report of the Officer in Charge of Children's Courts furnished some information on the subject of the relation between juvenile delinquency and unemployment. This was supplemented by talks with the officers of the Children's Court in Bendigo and with the special Probation Officers in charge of juvenile offenders.

Conclusions

1. Approximately 70 boys leaving Bendigo schools each year are unemployed for varying periods after leaving school.
2. In employment of a distinctly temporary nature preference is apparently given to boys under the age of 16 years.
3. Whilst the evidence is not strong enough to support a definite conclusion, there are indications that boys who have been educationally retarded at school are more likely to be unemployed than boys who have made normal or accelerated progress through the grades of our schools.
4. A comparison of the after-careers of boys leaving school from the eighth or a lower grade and boys leaving from a grade beyond the eighth shows that there is a significant difference in favour of the latter group. Only one boy in every twelve with higher education is unemployed; whilst one boy out of every three with only eighth grade or a lower standard of education is unemployed.

5. Unemployment reaches its maximum in that group of boys who leave school between the ages of 13 years and 13 years 11 months, decreasing from 31% of the group at this stage to 14% of that group of boys who leave school between the ages of 16 years and 16 years 11 months. The decrease in the older age group is probably due to the higher educational standing of its members.
 6. An important cause of unemployment among older boys is the practice of payment according to age. A decrease in the rates of pay for apprentices and improvers and a corresponding increase in the rates of pay for adult employees might ensure a greater security of tenure for youths in industry.
 7. There is insufficient data to justify a conclusion on the relation between unemployment and juvenile delinquency. Officers of the Children's Courts do not regard unemployment as a major cause of juvenile crime.
 8. There is a steady demand for boys for farm work. A development of the Bendigo Training Farm scheme will do much to solve the problem of unemployment in this city.
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THE CO-OPERATION OF SCHOOL AND HOME

J. S. GREIG

The object was to obtain useful information on the degree of co-operation between school and home and on bodies promoting such co-operation.

Method

Three questionnaires inviting opinions and suggestions were addressed to parents (100 replies), principals (50 replies) and teachers (43 replies).

Information extracted from these replies was tabulated under the following heads:

1. Points of contact.
2. What does the home know of the school?
3. What does the school know of the home?
4. Agencies promoting co-operation.
5. The question of homework.
6. Opinions and suggestions.

Conclusions

1. The points of contact are numerous and varied, but the extent to which they are used differs widely. There is little planned organization.
2. The knowledge of the school possessed by the home is fairly satisfactory, most of the important facts being known to at least 50% of parents. It could be increased by improved facilities for contact.
3. The knowledge of the home possessed by the school is much less, particularly in secondary schools. The need here is for systematized information.

Suggestions

1. Existing facilities should be organized and made universal.
2. Prospectus, circular and school magazine should be used more as mediums for information.
3. There should be complete school records, such as that used by Trinity Grammar School, indicating home conditions and all abnormalities.
4. More personal contact should be made through correspondence, definite invitations to the school, and set times for personal interviews.
5. There should be a Parents' Association and a Parents' Executive at each school.
6. Parents and teachers should see more of each other. The holding of regular parent-teacher conferences and the adoption of the American system of parent-teacher associations would assist in this.

EXAMINATION VARIABILITY IN CLASS 'A' SCHOOLS

N. D. HARPER

The aim was to determine how far extreme variations in passes characteristic of external examinations are also found in Class 'A' schools conducting their own examinations at either Intermediate or Leaving Certificate stage.

Method

1. An analysis was made of the variable factors which influence the result of the internal examination. The nervous strain of sitting in unfamiliar surroundings for a paper set by an unknown examiner is removed. The schools studied have specialized and well-trained staffs, an essential pre-requisite for inclusion in the system. The syllabus is determined by each school, but there is little deviation from University prescriptions. Great care is taken in marking as well as setting papers: tests are given at monthly intervals or at the end of term, previous records are considered, and supplementary examinations are the exception. The school population is on the whole an excellent sample.
2. Statistics were compiled from the records of public Class 'A' schools and from Education Department returns for State Schools. The statistical procedure adopted by J. A. Seitz in *Examination Variability* was followed substantially. A ten-year period (1926-35) was adopted, differing slightly from Seitz's. The subjects were compared with one another. Comparisons were made with Class 'B' schools.
3. The validity of the tests was checked by comparing Leaving Certificate results of High Schools under the Class 'B' system with those under the Class 'A' system for Intermediate, but reverting to Class 'B' for Leaving Certificate. The school populations were exactly comparable. A partial check was made by comparison of Leaving Honours results. Some pupils transfer to

Class 'A' schools, many leave, and only the best continue. A comparison was made of the average honour obtained in Class 'A' and 'B' schools.

A study was also made of variations in various subjects at the three standards to see how far the examinations were consistent in selection from year to year.

Conclusions

1. The percentage of subject passes in Class 'A' schools (Intermediate 72%, Leaving Certificate 79%) is considerably higher than in Class 'B' schools (Intermediate 63%, Leaving Certificate 64%). At the Leaving Honours stage, Class 'A' schools show a higher percentage of classed candidates and a better quality honour (18%).
2. Class 'A' schools show a larger number of Intermediate Certificate passes (62% as against 51%), but their superiority is not maintained with Leaving Certificate (57% as against 56%). There is a comparatively high correlation between certificate passes and language passes at this stage. (The high percentage of subject passes may be due in part to the large number of Honours candidates sitting for additional Leaving subjects, which they usually pass.)
3. There is less variation from year to year in subject passes at both stages in Class 'A' schools than in Class 'B' schools.
4. Standards maintained in Class 'A' schools are consistently high and rarely fall below external standards. In a few cases candidates who presented externally passed, whereas if they sat internally they would have failed. There is a tendency for standards to be slightly lower in compulsory subjects.
5. Mr. J. A. Seitz (op. cit., 39) suggests an average subject pass of 70% to secure a certificate pass of 60%. The Class 'A' figures show that this would have the desired effect at the Intermediate standard,

but the Leaving figures throw no light upon the probable result of such a proportion of passes at this standard.

6. The stability of subject passes in Class 'A' schools is partly the result of experimentation with different types of paper. Although some departure from conventional methods has been made, it is not at all general.
 7. Some of the evils of the external examination could be obviated by extending the number of local examination centres in the schools. Uniform papers and more scientific marking would minimize variations. Most of these advantages are offered by the Class 'A' system. The appointment of additional inspectors by the University would facilitate the maintenance of uniform standards.
 8. The examination of the statistics indicates that the Class 'A' system has justified itself as a method of examination.
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THE CHILD'S ATTITUDE TO THE STATE IN A DEMOCRATIC COMMUNITY

MOIRA HARTIGAN

The aim was to determine to what extent the Victorian primary and post-primary schools provide their exit pupils at the 13+ level with a knowledge of the way in which their country is governed and with a sense of their responsibility to the State.

Method

A questionnaire (which may be found printed in full in the summary of the investigation of Mr. J. R. Peart, 1936) was framed with the object of ascertaining if the pupils examined had acquired a general knowledge of the system of representative government and of the responsibility of the voter. The children were also asked a few simple questions about current world affairs and about their interest

in and attitude to the press. Copies of the questionnaire were given to 500 pupils in the 7th and 8th grades of Elementary, Central and Higher Elementary Schools. Classes chosen were truly representative ones and were taken from residential, industrial and rural districts. The questionnaire was given under conditions which precluded any possibility of consultation but which did not savour of the examination room.

When the papers were collected the answers to each question were tabulated according to groups into which they naturally fell and were then re-grouped as satisfactory or unsatisfactory. The results were later re-examined from the points of view of (i) development with progress through grades in the school, (ii) comparison between answers of boys and girls, and (iii) comparison between answers from primary and secondary schools.

Civic Knowledge.—In questions concerned with the principles of democratic government and the responsibility of the voter it was found that from one-third to one-half of the pupils examined were completing their formal education without having mastered even an elementary knowledge of the government of their country.

International Affairs.—The answers to questions on international affairs showed that the children as a whole were interested in world events and could answer simple questions intelligently, though certainly in a stereotyped way.

Attitude to the Press.—Practically all the children tested were in the habit of seeing the newspapers regularly, but all except about one-third confine their attention to cartoons, serials, or the children's section. Only 20% stated that they would always accept the opinions of the newspapers, and as many as 60% could give some instance of their disagreement with the press.

Attitude to World Peace.—About four-fifths of the children examined showed that they considered that nations should resort to arbitration to settle disputes but expressed

their willingness to participate in a defensive war. While the majority considered punishment of a defeated nation inadvisable, only a very few could offer any concrete criticism of the Treaty of Versailles.

Conclusions

The results of this small enquiry indicated that our national schools are at present failing to do much that might be expected of them to secure that the citizens of to-morrow be well equipped for their important rôle in our democratic community. Among the suggestions advanced by the writer at the conclusion of the thesis are the following:

1. That Civics should be separated from History in the school curriculum and made a compulsory subject in every course, with at least one period per week devoted to it.
2. That at least one period per fortnight should be given in every class in post-primary schools to discussion of current history.
3. That European or World History should be substituted for British History in Forms E and F.
4. That Civics tests should be given regularly, and that they should include an extract from a newspaper to be examined critically by the pupils.
5. That a Children's Monthly Newspaper should be instituted with the object of counteracting the influence of propaganda and of giving children an opportunity of hearing current political questions discussed from varying standpoints.

THE EDUCATIONAL FACILITIES AND PROBLEMS OF BENALLA AND DISTRICT

H. W. HOPKINS

The writer's object was to carry out, as far as circumstances allowed, a survey of the weaknesses and strength of the educational system of Benalla and district, to reveal credit-

able achievements, and to suggest remedies for certain defects.

Method

A rich background of information had been gained by the writer during three years of activity as the secretary of the local branch of the Victorian Teachers' Union. Details were kindly supplied by teachers who answered a questionnaire. This contained about 170 questions, almost all requiring a very short answer only, sufficient provision being made for voluntary relevant remarks. The questionnaire was sent to about 70 teachers in more than 40 schools contained in an area of almost 1,000 square miles. Replies were tabulated for individual questions, and conclusions based as far as possible on statistical evidence

Subjects Discussed

The District	Topography, industries, etc.
School Sites	Location, roads, environment, shape, size, soils, drainage, contours.
School Buildings	Placement, structure, prevailing wind, etc.
Class Rooms	Location, construction, finish, illumination, etc.
School Residences	Size, condition, conveniences.
Service Systems	Ventilation, heating, cleaning, fire protection, natural and artificial lighting, electric and water supplies, sanitary services, cloak rooms.
Special Rooms	Office, medical inspection, storage.
Equipment	Desks, materials, tools, expenditure.
Problems	Individual worries, beheaded schools, staffing, frequent change of teachers, playing areas, equipment, revised curriculum, swimming, etc.
Achievements	Extra activities, libraries, gardens, swimming, various modern developments.
The Pupils	Intelligence, behaviour, health.
Retardation and Acceleration	Town and rural schools; High School.
Attitude of Community.	

The Teachers	Service, qualifications, training, vacation classes, interest, preference for country life, frequent change of teachers.
Revised Curriculum	Pros and cons.
Roman Catholic Schools.	
Benalla High School	Brief history, achievements, multiple courses.
Adult Education.	

Conclusions

Before a school is built, the site should be carefully selected. Drainage, soil, locality, contours, and prevailing winds should be taken into account. The building should be erected in accordance with modern standards of accommodation, ventilation, lighting, heating, convenience, comfort, beauty and strength. Most of our schools lack several of these attributes. Entrances and cloak rooms are insufficient in a number of cases. A close inspection of all schools should be made and repairs to buildings and grounds effected immediately.

More male teachers should be appointed to the larger schools, and classes should be reduced in size. Better provision should be made for the comfort of teachers. To ensure a progressive growth of educational ideas, reasonable inducements should be offered to teachers to attend vacation classes of a special nature regularly. Similarly, teachers should be induced to stay for periods of five or six years in a school, with a view to carrying out some definite educational policy. The continued changes of staffing in some schools do not produce good results. Salary rates and conditions for promotion should be more commensurate with the responsible social duties performed by teachers. Teachers' residences should be good, comfortable buildings. Supervision of schools, apart from inspection, would do much to help the lonely rural teacher. In general, the teachers exercise judgment, care and industry in their tasks, and are doing creditable work.

The attitude of the community is fair, but could be more active. More and better equipment in the way of libraries, tools, materials and storage must be provided if good work is to be expected. Some alteration to summer time-tables is necessary. Summer vacations should be longer, and of uniform length. Medical inspection of all children should be more frequent and thorough. In the light of its operation during the past three years the revised curriculum is in need of further revision. Tool subjects are still a source of worry. Displays of children's work are not always favourably received by teachers.

Greatest retardation is in Grade V. Decapitated schools suffer certain disadvantages. Rural schools compare favourably with town schools. Multiple courses of High Schools serve the needs of the community.

THE NEEDS OF SENIOR STUDENTS IN VICTORIAN HIGH SCHOOLS

J. HOSIE

The aim was to determine the extent to which the Victorian High Schools are meeting the real needs of their students, and incidentally to examine the justice of the claim that the course of study in these schools is dictated unduly by the University.

Method

The following questionnaire was sent to representative Victorian High Schools and answered by all Leaving Certificate and Leaving Certificate Honours students in each school:

Subjects taken this year. Indicate Pass or Honours thus: Eng. (P); French (H)—

- | | |
|----|----|
| 1. | 4. |
| 2. | 5. |
| 3. | 6. |

Do you intend to proceed to the University?

If so, what course would you take? Underline choice:

Arts, Architecture, Agric. Science, Commerce, Dentistry,
Engineering, Law, Medicine, Music, Science.

What trade, profession or occupation do you propose to follow?

Replies were received from twenty-two provincial and seven metropolitan High Schools and classified according to whether the courses being taken were suitable or otherwise for the intended vocation of the student. A tally sheet showing the subjects taken by students in these schools was also compiled. This showed the range of subjects taught in each school and also the size of the classes in each subject.

Conclusions

1. Of 303 students in twenty-two rural High Schools taking Leaving Certificate and Leaving Certificate Honours only 28% intend to proceed to the University. Thus 72% are being compelled to follow courses more or less unsuited to their requirements.
2. In the particular year of the investigation (1936) 45% of these 303 students intend to become teachers.
3. Only 1% of the same group intend to become farmers. It may be assumed that a higher proportion of potential farmers is to be found in the lower forms, but lack of a suitable course in the upper school prevents a continuance of High School studies.
4. The foregoing statements support the suggestion that the curriculum in High Schools is dictated to too great an extent by the University.
5. Of the above-mentioned twenty-two schools seven limit their range of Leaving Certificate subjects to nine, five to eight, and two to seven subjects. Others give a wider choice, two teaching fourteen, and one thirteen subjects. Only one teaches Leaving Certificate Agricultural Science.

6. Of 419 students in seven metropolitan High Schools less than 50% intend to proceed to the University, while all, except at one High School, are treated as potential University students.
7. Only 15% of these 419 students intend to be teachers, approximately half of them being girls at University High School. Country High Schools thus appear to provide the majority of Victorian teachers.
8. Metropolitan High Schools, with one exception, offer no greater range of subjects than country High Schools, one metropolitan school offering only eight and teaching neither History, Geography nor Commercial subjects at the Leaving Certificate stage.
9. An analysis of unsatisfactory groups of subjects being taken by individual students reveals that in all instances this is due to lack of provision of the subjects really required. One case will illustrate this. Subjects taken: English, French, Maths. II and III, Physics and Chemistry; the student plans to continue studies at the University in the Faculty of Commerce and later take up banking or accountancy. No commercial subjects are taught in his school.
10. The admitted competition for students between High Schools and Technical Schools is undesirable, not being in the best interests of the students. A possible way of overcoming this difficulty would be the amalgamation of the two types of schools, where possible, to form a multi-purpose school similar to those at Mildura and Horsham.
11. Finally, it is essential to bring the State secondary schools into closer touch with the industries, interests and occupations of their own particular districts.

**SOME FACTORS IN THE ENJOYMENT OF SCHOOL LIFE IN
HIGH AND JUNIOR TECHNICAL SCHOOLS****A COMPARATIVE STUDY****C. T. JONES**

The aim of this investigation was to discover those factors which make school life a joy and a mine of interest to many boys, and those which cause others to regard it as drudgery or worse; to find possible reasons for some subjects on the curriculum having far more general popularity than others; and to determine what types of extra-curricular activities prove most valuable.

Method

The conclusions drawn were based on information derived from three main sources:

1. A questionnaire given to two groups, each of 250 boys, one in High Schools and one in Junior Technical Schools. (It was not feasible for the investigator to bring girls within the scope of his investigation.) The groups were fairly representative samples of Victoria's schoolboy population as they contained, in approximately the correct proportions, representatives from all parts of both metropolitan and country areas. Information was asked for under twenty-three heads, and the boys were guaranteed that information given would be used in a general way, so that none of it could be traced back to the writers.
2. The opinions of a large number of male teachers who had taught in both types of school. These were obtained either by correspondence or in interview.
3. The personal experience of the investigator.

Conclusions

1. Boys in Technical Schools appear to be more self-reliant and confident, but they lack the critical spirit

of enquiry of High School pupils. This gives the latter a keener insight into controversial matters.

2. Cultural attainments in the matter of writing, spelling and the ability to express thoughts in words are of a higher quality in High Schools and apparently do not receive sufficient attention in the junior part of the Technical School.
3. The proportion of boys who really do not like school life in our State secondary schools is very low (about 5%).
4. Results seem to show that there are twice as many boys in High Schools who think their parents find it financially difficult to send them to school, but it is probable that Technical School boys have not thought so deeply on the matter.
5. Prefect systems, particularly in the Technical Schools, can be still further improved to exercise a greater influence over student affairs where the teacher has little chance of supervision.
6. Extra-curricular activities are more widely provided in High Schools, and the evident value placed on them by the pupils as well as the teachers makes it desirable that they be even further provided.
7. It should be the aim of sportsmasters to make some definite provision in sport for that 20% to 25% who are least proficient at games.
8. There are still many boys in High Schools who could be more profitably catered for educationally in some type of Technical School.
9. The number of boys in Technical Schools who intend leaving at the age of fourteen is about twice as many as that in the High Schools. For all these some special course *which can be completed* should be provided.
10. There seems a widespread dislike for Theoretical Geometry and Algebra in both types of school, Modelling in Technical and History in High Schools. Either

the curriculum or the methods of instruction, or both, should be revised.

11. On the other hand, subjects which allow scope for self-activity, individuality, or manual effort on the part of the pupil have a widespread popularity, and such features might well be introduced into other subjects such as History.
12. In the case of Technical School boys the question of liking or disliking a subject usually had to do with its ease or difficulty of comprehension; whereas in the case of High Schools the most important factor was the personality of the teacher.

A possible explanation of this is the more rigid type of discipline in Technical Schools, High School teachers depending less on the use of corporal punishment. The attitude of the boys towards their teachers supports this conclusion.

13. Junior Technical Schools suffer from the introduction of 'trade instructors' who have not been trained as teachers and from the friction of the 'dual control' system—Principal and Headmaster.

The Hadow Report says that the 'growth of Secondary Education in the last thirty years has been one of the most remarkable movements of our day.' It is now essential to reorganize and make perfect this rapidly developed system.

THE USE OF THE PROJECT METHOD

LILIAN V. KING

The aim was to inquire into the use of projects in Victorian State secondary schools and, more particularly, their use and applicability in Higher Elementary Schools.

Activity methods being freely employed in State primary schools, questions such as the following arose: Are such aids suitable only for primary school work? Are projects

employed in post-primary schools in other lands, other States, or in Victoria itself? What of the curriculum and methods in Victorian Higher Elementary Schools? Are there reasons why activity methods should or should not be specially applicable to such schools?

Method

(a) In various ways, notably by consulting authoritative books on education, information was obtained relative to the project method and its use in other lands, namely, America, England, Germany, France, Russia, Japan, Turkey and Poland.

(b) Inquiry and study revealed something of the attitude of South Australia, New South Wales and Tasmania towards projects.

(c) A more comprehensive study of project work in Victoria was undertaken.

- (i) A visit to a Platoon School—made possible by the courtesy of the head teacher and the district inspector—showed the type of work done in higher grades in such a school.
- (ii) Teachers in various types of State secondary schools were questioned on the project method as employed in their schools or on their own attitude towards it. Information was thus gained relative to a Central School, several High Schools (including University High School, to which a visit was paid to view the Special History Room where a definite activity programme was being carried out) and two Girls' Schools.
- (iii) As the investigation was primarily concerned with Higher Elementary Schools, information concerning projects was obtained from twelve of these.
- (iv) Finally, experiments in the use of projects in English and History were made in a Higher Elementary School. D form was found the easiest with which to experiment, partly because of its convenient size and partly because of its more flexible curriculum.

Conclusions

1. Projects have been used in most of the State secondary schools from which information was secured, so that it may be fairly assumed that secondary teachers consider such methods worth-while, particularly in the teaching of English, History, Geography, French and Science.
 2. Teachers generally consider that projects stimulate interest, and that while it is often the clever child who will produce the best project, the dull, slower child may respond well, and activity methods may succeed in rousing a pupil who would otherwise be uninterested.
 3. Methods advocated in the *Revised Course of Study for Primary Schools* would seem to make it easier to break away from a too strict adherence to the traditional methods of secondary schools. To effect this break-away is essential if there is to be any real continuity in education.
 4. For project methods to prove really effective, closer co-operation between members of the staff of a secondary school is most desirable.
 5. Activity programmes are particularly desirable in Higher Elementary Schools, where are found curricula governed by University requirements and therefore unsuited to the needs of the majority of the students.
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THE VALUE OF MENTAL TESTS IN A PREPARATORY SCHOOL

G. H. LAWTON

Method

Sixty-nine boys in four forms of a Victorian Preparatory School were tested. The average age of the groups varied from 9·0 to 13·2 years, which is higher than the average age of pupils in corresponding grades in the State schools.

The boys were each given two forms of the Otis Intermediate Test; the average of the scores was used to establish Binet mental age equivalents and I.Q.'s. The correlation between the two tests was .84. The Arithmetic and Reading tests standardized by the A.C.E.R. together with Burt's Spelling, Dictation and Mental Arithmetic tests were also given to each pupil.

The educational quotients obtained from the scholastic tests were compared with the intelligence quotients obtained from the intelligence tests. A fairly close correspondence was found.

The writer has paid special attention to cases where educational retardation is found, and the more extreme cases are discussed individually.

Conclusion

Results obtained from such tests can be of much value in educational and vocational guidance.

THE USE OF HISTORY TEXT-BOOKS IN VICTORIAN SECONDARY SCHOOLS

MARY LAZARUS

The aim was to ascertain:

1. What books were in use as class text-books.
2. Whether they were found suitable.
3. Whether better ones were available.
4. What library facilities exist in Secondary Schools (Central Schools, High Schools and Registered Schools).
5. What facilities exist for teachers to discover what are the most suitable books for their requirements.

Method

1. Questionnaires were sent to teachers at Central Schools, High and Registered Schools (about five of

each type). Teachers were asked what books were in use, whether or not they were found suitable, what library facilities existed, and how the libraries were financed.

2. Approximately 200 girls in the Intermediate classes at the MacRobertson Girls' High School were asked detailed questions about their class text-books and library books. Also the girls in the Leaving Honours European History class were asked for comments on such reference books as they had read.
3. Some valuable information about types of books generally liked by schools and also many lists of books recommended by various English educational authorities were supplied by Miss Moodie Heddle, Messrs. Longmans' agent.
4. Information was also obtained from other publishers' agents and from book stores.
5. For general conditions, elsewhere and here, the Munn-Pitt Report on Libraries and the Report to the Carnegie Trust on Libraries in Secondary Schools, as well as certain other publications, were consulted.

Conclusions

Central Schools.—There was general dislike of the book recommended by the Education Department. Though most of the schools had a few books that might pass for a Form library, there was nothing that really deserved the name. One school had about twenty copies of each of four different volumes for the E and F forms—only one had nothing at all. As both course of study and text-book are prescribed, little choice is left to the teacher in these schools.

Registered Schools—Junior Forms.—Much wider variety of courses of study and text-books is to be found in these schools, there being no outside restrictions until the Intermediate stage. Many of the fairly recent, better publications are in use, though, from evidence supplied by booksellers, some very old-fashioned texts are still used in some schools.

Text-books for Public Examination Forms.—None of the books in use for the Imperial History course meets with much approval; there seems to be less dissatisfaction with those for the British History course. In a school under the Approval System, doing its own course of study, the Piers Plowman series was found to be excellent, except for the fact that too short a period is covered in each volume. Books in use at the Leaving Certificate stage are found to be fairly satisfactory.

School Libraries.—Very few schools have anything approaching a satisfactory library for any but the Leaving Honours classes. Lack of funds, particularly in Departmental schools, is the greatest difficulty. No Departmental grant is made, and it is very difficult to obtain books in sufficient numbers and of such quality as to be of use. As all modern educationists agree on the importance of the library in school work the position is very regrettable. The lack seemed to strike Mr. J. F. Cramer (*Australian Schools Through American Eyes*) very forcibly. Until such time as a library grant is made the following suggestions are put forward as makeshifts:

1. Grants from the school itself where funds are available.
2. Co-operation where possible with the local municipal libraries.
3. Small annual contributions from pupils using the books.

Teachers are at a great disadvantage in having no easily accessible publication to put them in touch with recent and new books. Such lists are prepared by English educational authorities and the Central Library Association. It is evident that there are many excellent books known to very few teachers. It is felt that annotated lists would prove very useful.

MENTAL AGE AND THE ARITHMETIC CURRICULUM

A. McDONELL

Working for several years past the Committee of Seven, under the chairmanship of Carleton W. Washburne, Superintendent of Schools, Winnetka, has been able to direct a great number of experiments regarding the optimal mental age at which various topics in the Arithmetic Syllabus should be taught. An analysis of the results of any one of their experiments shows that such an optimal age does exist.

The aim of the present investigation was to survey briefly the work of this Committee and to carry out a test on Long Division, using the Committee's experimental technique. (For details see XXIXth Year Book of the National Society for the Study of Education.) It was hoped that it might be possible to confirm the American result for Victorian children. Long Division was the topic chosen because of the rather common opinion that Fourth Grade children experience great difficulty with it, and further because there was a great discrepancy between the chronological age at which we in Victoria usually teach it (9 yrs. 6 mths.) and the optimal mental age as shown by the American experiment (12 yrs. 7 mths.).

Method

The test was confined to about 300 Fourth Grade pupils distributed in seven grades in four different schools. The results were in agreement with American findings in so far as the scores on a retention test varied according to the age of the pupils. The older the group, the better the score. The age spread of pupils in Grade IV, however, was too narrow to predict anything regarding minimal or optimal age for teaching the topic. Further, it transpired that the wastage of pupils during the course of the experiment was higher than expected, so that the numbers in each age group were too small to permit definite conclusions being drawn.

The investigation must be regarded as preliminary. In

order to arrive at definite conclusions the experiment would have to be carried into Grades V and VI. This would necessitate certain safeguards against pupils' learning the long division process from other pupils; and at least 600 pupils at each grade level should be tested.

References

XXIXth Year Book of the National Society for the Study of Education.

Elementary School Journal. May, 1928.

Journal of Educational Research. March, 1931; May, 1936.

Progressive Education. March, 1932.

Standardization of an Australian Arithmetic Test (Cunningham & Price).

(All of these books are in the A.C.E.R. library.)

THE SOCIOLOGICAL AND HISTORICAL BASES OF EDUCATIONAL OBJECTIVES IN AUSTRALIA

J. A. MERLO

The aim, as stated by the writer, is 'in the Socratic spirit to open up the subject and to suggest some major lines of approach.'

Method

The enquiry was suggested to the writer by the consideration of a questionnaire on the objectives of secondary education sent out to Victorian Schools by the A.C.E.R. Replies to this questionnaire have been drawn on for an expression of the views of practising teachers. For the rest, this work is based 'not on statistics and experimental procedures but on intuition and on the first-hand knowledge derived by the author from a wide range of personal contacts.'

Chapter headings are:

The Motives and Aims of Education
The Evaluation of Educational Objectives
The Secularization of Western Culture
The 'Religion of Progress'
The Individual and Society
The Eclecticism of Modern Education
The Cultural Background of Australian Education
The Australian Standard of Life
Political Philosophy and Education
Whither Australia?

Conclusions

1. What aims we have exist in diffuse and unrelated form.
 2. Educators can be found who possess aims, but . . . such aims are unfocused, because they lack the dynamic that comes from profound beliefs or from the functioning of a strong historical force.
 3. The underlying philosophy of our society is virtually a denial that aims are necessary. Our thinking is so little assimilated to any general purpose that we go in perpetual dread of indoctrination; we prefer neutrality.
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THE FUNCTION AND ORGANIZATION OF A JUNIOR
SECONDARY SCHOOL LIBRARY: WITH PARTICULAR
REFERENCE TO A VICTORIAN EXPERIMENT

A. L. MOORE

The aim was:

1. To point out the value of libraries in promoting self-education through reading—a habit that should be developed and directed at school.
2. As far as is practicable in the University-dominated curriculum of a Higher Elementary School to discover how to put into operation some of the ideas

gained from a study of English and American library practice.

Method

The investigation falls into two parts—the first theoretical, the second practical. It begins with a survey of the educational needs of a democracy and of the function of libraries in general, and of school libraries in particular, in satisfying those needs.

This is followed by a brief record of recent developments in Great Britain and U.S.A. and by a detailed report of an experiment at Nhill Higher Elementary School under the headings:

1. Equipment and Facilities.
2. Routine.
3. Promotion of the use of the Library.
4. Immediate future at Nhill.

Conclusions

1. We in Australia have the unfortunate attitude that education is merely literacy. It is not regarded as a continuous process of adjustment. Hence libraries are regarded as luxuries instead of as necessities.
2. The library is of immense importance in the development of personality. This is recognized by the more advanced educational authorities in U.S.A. and Great Britain, who shape their policies accordingly.
3. U.S.A. leads the world in the provision made for all types of libraries, including school libraries. In Great Britain the Report (1936) of a Committee appointed by the Carnegie United Kingdom Trust to consider 'Libraries in Secondary Schools' is doing much to inspire library work in the schools.
4. Victorian school libraries, with very few exceptions, have no permanent or adequate scheme of finance, and, even if they had, healthy development would be impossible because of the tyranny exercised in secondary schools by narrow University requirements.

5. Under present conditions libraries may be made more useful by:
- (i) Associating them with projects both at home and at school.
 - (ii) Building up a catalogue complete with cross references.
 - (iii) Thoughtful classification, preferably by a modification of the Dewey system.
 - (iv) Enlisting the aid of senior pupils in administration.
 - (v) Avoiding restrictions on freedom of access to books.
6. No overseas system of organization of all the library facilities of the community is applicable without considerable modification. Of four suggested schemes that in which the school is made the centre of district library facilities is favoured.

THE OPERATION OF THE CLASS 'A' SYSTEM IN A GIRLS' SECONDARY SCHOOL

MAY E. MOORE

The investigation deals chiefly with the standards and methods of examination at the MacRobertson Girls' High School. Details are given of the length of examinations, the form of questions and the marks obtained by the pupils.

The position of those pupils who do not study a full and approved course is discussed at length, and the results of those who elect to sit at the external examinations are compared with their internal examination results. The performances of those granted Joint Certificates are also set out.

A set of graphs of the results of the examinations in all subjects is included, together with graphs showing the comparison between internal and external examination results.

Details of the advantages the school derives from its freedom to plan new courses are given in an account of the courses of study in Social History and Biological Science.

THE FUNCTION OF THE VICTORIAN HIGHER ELEMENTARY SCHOOL

PHYLLIS E. MORISON

The aim was to investigate the present function of the Victorian Higher Elementary School and its relation to that section of the community which it is designed to serve.

Method

The discussion was made to centre round the Dimboola Higher Elementary School. The school records were analysed, and the present situation was reviewed.

Comparisons were made with the English Modern School, the Junior High School of the United States of America and the Rural and Intermediate High Schools of New South Wales.

General statistics for Victoria were supplied by Mr. Graham, Chief Clerk of the Education Department of Victoria, and those for New South Wales by Dr. Wyndham, Research Officer of the Education Department of New South Wales.

Information was also gleaned from the following books:

Comparative Education (Kandel).

The Junior High School (Thomas H. Briggs).

The Hadow Report on the Education of the Adolescent.

The New South Wales Education Gazette, August, 1936.

The subject was treated under the following headings:

1. Introduction. A description of a typical Higher Elementary School.
2. The place of the Higher Elementary School in the scheme of Victorian education, with a map showing the relative positions of High Schools, Higher Elementary Schools, Technical Schools and Girls' Schools in country districts.
3. A statistical survey.

Tables were compiled showing:

- (a) Wastage in Victorian Higher Elementary Schools between F and C forms from 1929 to 1934.
- (b) Wastage at Dimboola Higher Elementary School between F and C forms from 1929 to 1936.
- (c) Wastage from form to form at the Dimboola Higher Elementary School from 1922 to 1936.
- (d) The number of children entering the Dimboola Higher Elementary School from surrounding districts.
- (e) Destinations of pupils leaving the Dimboola Higher Elementary School.

4. Curriculum:

- (a) Literary subjects.
- (b) Needlework and Cookery.
- (c) Commercial subjects.
- (d) Young Farmers' Clubs.
- (e) Analysis of Time Allotment in Victoria.

Comparison with Time Distribution of subjects for secondary schools suggested by the Board of Education, England, and the Time Schedule of a Mixed Selective Central School in a Rural Area of England.

- (f) Athletics.

5. Administration and Organization.

6. The curriculum of parallel schools elsewhere.

- (a) The Modern School in England.
- (b) The Junior High School in the United States of America.
- (c) The Rural and Intermediate High School of New South Wales.

Conclusions

1. It is necessary to awaken in parents a sense of the need of giving their children a good education. The initiative must come from the educational authorities, but if the national consciousness is aroused much may be accomplished. As evidence of this the educational systems of Italy and Russia to-day may be quoted.
2. At present the Higher Elementary School fails to provide adequately for the majority of children in the district. This is borne out by the figures quoted in the statistical survey.
3. Suggestions for the reorganization of the curriculum of the Higher Elementary School.

These include suggestions:

- (a) That the course be reduced from four to three years, taking children from 12 to 15 years.
- (b) That the curriculum be considerably broadened and made more practical in content. To this end the Intermediate Certificate should be abolished, and children wishing to do an academic course should be encouraged to proceed to a High School from Grade VI.
- (c) That one language other than English be taught, and that in its selection local conditions and requirements be taken into account.
- (d) That practical studies, though not necessarily vocational, be more closely linked to the major occupations of the district. These should form the basis of a hobby for later life.
- (e) That more use be made of persons, either local residents or departmental employees, who have valuable specialized knowledge.
- (f) That more adequate library facilities be supplied.
- (g) That further facilities for advanced Technical and Agricultural Education be supplied in country centres.

4. The Higher Elementary School is a very important part of the Victorian system of secondary education and does excellent work with the children with whom it comes in contact, but by certain modifications its field of usefulness might be very much enlarged.
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A CRITICAL SURVEY OF A VICTORIAN CENTRAL SCHOOL
AND A COMPARISON WITH THE JUNIOR HIGH SCHOOL AND
THE ENGLISH MODERN SCHOOL

D. R. MORRISON

The writer's object was to examine critically the Victorian High School and to attempt to suggest ways in which it might be improved or modified.

Method

Information about the three types of school under consideration was gathered from general reading, official reports, and personal enquiries. A questionnaire sent to each of the Victorian Central Schools and checked from Departmental records provides precise information on such matters as number of pupils, staffing, curriculum, equipment, school activities, examinations and promotions, and the exit destinations of pupils. The comparison with the English and American schools is made from the point of view of history and function.

Conclusions

1. A reorganization of Central Schools along the lines of English Modern Schools is suggested.
2. Modification of the curriculum, with greater emphasis on health and physical education and on creative and appreciative aspects of education, is urged.
3. Suggestions are made for improved equipment, for meeting individual differences, and for some form of guidance.

THE EFFECTIVENESS OF COMMERCIAL EDUCATION IN VICTORIA

A. W. MUIRDEN

The purpose of this investigation was to ascertain, as far as the limited means available would permit, the amount and type of training generally required of boys and girls before entering business as clerks or stenographers.

Method

The topic first treated was the history of Commercial Education in Victoria. The first Commercial School was established in 1883, but in recent years Commercial Education has also formed part of the curriculum of State High and Technical Schools and Public Schools.

A questionnaire was sent to about 150 business houses in Melbourne and suburbs, and another to over 100 stenographers who had completed a commercial course at a Melbourne business college. There were fifty-one replies from business men, and fifty-three from stenographers. The answers were summarized and commented on. The purpose of these questionnaires was to determine what business houses required of those whom they employed, and how far qualified stenographers considered their school training had been adequate in equipping them for their office duties.

Conclusions (drawn from answers to questionnaires)

1. Bookkeeping, Commercial Principles, Civics, Economics (although there was a diversity of opinion about this subject) were considered necessary or advisable for clerks.
2. These subjects, however, were not to supplant the basic subjects, English Literature, Mathematics, the Sciences, and the Languages. A complete 'break-away' was considered unwise.
3. Overstressing of the utilitarian subjects—Bookkeeping, Commercial Principles, and Business Correspondence—would be unwise.

4. Most business men took a wide view, recommending a liberal education for a prospective clerk, but at the same time recognizing the advantage of a knowledge of commercial subjects.
5. Most recommended a general education until the age of 14; then, for prospective clerks, a change to a special curriculum, partly academic and cultural, but with a special emphasis on commercial subjects.
6. This proposal would necessitate a two years' course, terminated at sixteen years by a special Commercial Certificate, to replace for prospective office workers the University Intermediate Examination.
7. This reform would be possible only with the co-operation of business men who would be prepared to employ older boys.
8. The study of Salesmanship, Advertising, Business Organization and other similar subjects was considered advisable only after the completion of a full commercial course. The curriculum must not be overcrowded with subjects which are not essential.
9. Periodical lectures by experts on topics such as postal matters, banking, and business organization were advocated.
10. For stenographers a long course in Shorthand and Typewriting was unnecessary. A more intensive study of liberal subjects from 11 to 15 years was advised; then one to one-and-a-half years of special subjects—Shorthand, Typewriting, Commercial English, Arithmetic, Business Correspondence and Bookkeeping.

General Conclusions

1. Future policy should be progressive, but not revolutionary.
2. More imaginative methods should be employed in teaching.
3. The romance and human interest in business should be stressed.

4. More freedom is required for the teacher.
 5. Recognition of the Commercial School as an important part of the educational system is necessary.
 6. Large business firms should build up good libraries to enable their staff to follow up their commercial studies.
 7. Lectures sponsored by large firms are a useful adjunct to teaching.
 8. To control Commercial Education in Victoria, there should be a Board of Commercial Education.
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THE WORKING OF THE CLASS 'A' SYSTEM IN A STATE SECONDARY SCHOOL

L. C. NEILSON

The writer aimed at giving a brief account of the working of the Class 'A' (approval) system in the University High School, Melbourne, in respect to the Intermediate and Leaving Certificate examinations of the University of Melbourne.

Method

The account given is based largely on the writer's own experience at the University High School, particularly in regard to science subjects, but for other subjects he received valuable assistance from the Principal and other members of the staff, who generously placed the results of their long experience at his disposal. School records were consulted whenever necessary.

The following chapter headings give some idea of the scope of the investigation:

- I. Brief history of the accrediting system.
- II. The University High School.
- III. Admission of pupils.
- IV. Courses and subjects.
- V. Content of courses—syllabuses.
- VI. Teaching methods.

- VII. Examinations.
- VIII. Corrections.
- IX. Standards and results.
- X. Inspection.
- XI. Conclusions.

Conclusions

1. The Class 'A' system is fairer to the pupils, but at the same time throws an additional burden upon the teacher.
2. The freedom in framing the curriculum permitted under this system is made good use of in the Junior School, but the curriculum in the Senior School is dominated by the requirements of the external examination. The reasons given are the method of awarding State Senior Scholarships, the entrance requirements of the Public Service, and the relatively large number of senior pupils who intend to proceed to the University. In general teachers have availed themselves of the freedom allowed them in the choice of teaching methods, particularly in those subjects involving appreciation.

THE CHILD AND HIS CONCEPT OF THE STATE

(An investigation into the attitude of Secondary School students to the authority of the State)

J. R. PEART

An interest in the new element of freedom in our class rooms and the recent growth of disciplined youth movements in the Totalitarian States suggested the possibility of evaluating, in some way, the secondary school student's conception of the organized society to which he belongs.

Method

1. Five hundred boys and girls (aged 11 to 15+ years) were selected as a sample of first, second and third

year pupils in three types of Victorian State Secondary Schools: High School (boys and girls), Boys' Technical School, and Girls' School. The majority of the students in these schools leave school after three years of the course.

2. A questionnaire was given by the writer to small groups. The examination 'atmosphere' was eliminated: pupils were told that they would receive no marks; their names should not appear on the papers, but they were to set down sex, age, school, etc.
3. The questionnaire below was prepared in conjunction with Miss M. Hartigan, who, independently, had planned a similar study using other types of post-primary schools.

1. Who do you think really rules our nation?
2. What part will you take in national affairs when you grow up?
3. (a) Why should everyone who has a vote interest himself in politics?
(b) Why do we have political parties?
4. (a) Why should we obey the laws of our country?
(b) Is a man ever justified in refusing to obey the law?
5. Which of the following would be desirable in a member of parliament.

Number them in order of importance, crossing out any which are not important at all.

That he should be:—

- (a) An eloquent speaker.
- (b) A successful business man.
- (c) A very clever man.
- (d) A patriotic man.
- (e) An honest man.
- (f) A friend of your family.
6. (a) Name countries at present under the power of one man.
(b) Is this form of government in the best interests of the country?
7. Name any countries where all people are equal before the law, and are free in thought, speech and religion.
8. Which, in your opinion, is the best form of government?

9. Are you proud of the British Empire? Give a reason.
 10. Has Britain ever done anything of which you do not approve? If so, what is it?
 11. Are we justified in keeping Australia for British people? Give a reason.
 12. In what circumstances is it desirable for a backward country to be conquered by a civilized nation?
 13. Which topics in the newspapers interest you most?
 14. (a) Do you always accept the opinions of the newspapers?
(b) If not, when have you disagreed with them?
 15. (a) When two nations have a difference of opinion, is it possible to settle the matter by discussion and peaceful arbitration?
(b) If this method fails, is a nation justified in resorting to war?
 16. Which of these courses should a nation take when it has won a war? (Tick the right one(s).)
(a) Crush the other nation out of existence.
(b) Let the defeated nation go free from interference.
(c) Endeavour to obtain justice for all concerned.
(d) Make the defeated nation pay a large sum of money.
(e) Take some land as a reward.
 17. Was the treaty that ended the last Great War a good one? Give a reason.
 18. If you were a man, in which of these circumstances would you fight for your king and country?
(a) If Britain caused a war.
(b) If Britain were attacked.
(c) If Australia were attacked.
(d) Not at all.
4. An elaborate method of tabulating the answers was devised. The percentages of pupils giving various answers was found; sometimes reasons and information were grouped by means of generalizations determined by test; appropriate scoring was devised for first, second and third choice, etc., in accordance with the nature of the questions.

Conclusions

The eighteen tables of the appendix, corresponding to the questions, offer much information in the nature of the

responses from the schools, sexes, age groups, etc., and could not be fully dealt with here.

Some conclusions are:

1. There is little realization of the part played by the individual in the activities of the State. Our standardized education may fail to train for effective citizenship in a modern democracy.
2. The controversial side of history or current affairs must be made clear in the class room. The teacher should see that his own point of view is estimated at its worth, and not necessarily taken as the truth.
3. There is a lack of real understanding of the essentials of citizenship, although many answers were indicative of well-informed, active minds; the schools could do much more were the leaving age raised to 15 years.

It is recommended:

1. That there should be an ample supply of books, maps, charts and display boards for a vivid, intellectual treatment of history and current affairs. Debates, excursions, projects and visits to institutions will impress the pupil with his potential citizenship.
2. That the emotional aspect of national and international occasions should be in evidence in assemblies, celebrations, pageants and ceremonies.
3. That physical education should help to prepare for participation in natural life by its insistence on personal decency and fitness.
4. That in the school community self-government should be introduced so that pupils may make decisions and take responsibility. It has been said that 'every change in the relation between states or races or classes brings with it the need of a new distribution of the time and effort of teaching and learning.' If there is a future for the youth of our democracy we must recognize their claim to be trained in the responsible use of ability and power.

THE RELATION BETWEEN THE SCHOLASTIC AND SPORTING ATTAINMENTS OF A SELECTED GROUP OF HIGH SCHOOL BOYS

V. PERCY

This investigation attempts to show that there is a positive correlation between educational and sporting ability as shown by examination results and achievements in sport.

Method

Results of research by groups of investigators of allied problems from the time of Porter in 1893 to that of Terman in 1925 were cited; these suggested that physical fitness is accompanied by normal, or more than normal, scholastic achievement, but that 'there is only a slight correlation between intelligence and athletic ability.'

The latter conclusion was considered to be the result of an inadequate system of measuring sporting ability, and for this investigation it was decided to follow the technique of 'equally often noticed difference' of Thurston and Chave. Briefly this means that sporting achievements can be represented on a horizontal scale ranging from best to worst. This range was subdivided into seven sections of 'equally often noticed differences,' i.e., if A represented the best position on the scale and G the worst, B, C, D, E and F would represent equal divisions of goodness and badness of attainment in between these two extremes.

To assist in placing the boys correctly on the scale a questionnaire relating to games played both at and away from school was given, and the information obtained was recorded on a card (one card for each boy). Eight teachers who knew the boys personally were asked to rank the boys in strict accordance with printed instructions. From all the rankings a 'mean' ranking was assessed by means of ogive curve graphs. 'Unreliable' rankings (showing quartile deviations of more than .55) were excluded.

Certain weaknesses in the system of ranking as applied

to this investigation are apparent and were summarized, notably that of the small number of judges.

The educational ranking was based on the examination results over a period of at least two years. An intelligence test was also given to all the boys.

A correlation was now made of sporting ranking and scholastic ranking. This result was + 113, which was too low to be of any value. A case study was conducted for cases showing a high difference between educational and sporting ranking, and in all cases a more or less satisfactory explanation could be found to account for the discrepancy. Abnormal cases were excluded, and the correlation figures were then + 525.

Conclusion

Thus, if the two essential figures of this investigation be accepted, viz., the Thurston and Chave technique for sporting ranking and the 'clarification' of the group by case studies, it would appear reasonable to expect that, in the main, there will be a pronounced tendency for boys who do well in school to perform creditably at sports.

INACCURACY IN MATHEMATICAL CALCULATION

C. W. PETTERSON

Aim

The starting-point was the idea that a great deal of inaccuracy in mathematics was occurring in the senior portion of primary schools. Teachers agreed with this contention, but could speak only vaguely on the extent of the inaccuracy, the parts of mathematics most affected, and the causes. They were equally vague on the nature of the remedies that could be applied to stop the drift.

In all, 1832 students were examined in the four rules applied in simple and compound quantities. The papers

set were graded in difficulty and in time allotment to suit the capacities of the various grades. Thus in the Grade IV test twelve units of work were set with a time limit of thirty-five minutes, while in the test for Grade VIII or higher twenty-seven units were set with a time limit of fifty minutes. The order of the questions was varied, too, to ensure that each operation—addition, subtraction, multiplication and division—was spread as widely as possible over the whole test, so that the element of fatigue might not unduly affect any one of the four operations.

The results were collected for each grade from IV to VIII in two sections, boys and girls; and each of the four rules was later put into a separate grouping.

Briefly stated the results may be given as follows: Grade IV, 24.4 errors; Grade V, 19.8 errors; Grade VI, 19.2 errors; Grade VII, 17 errors; Grade VIII, 15.3 errors. Addition sums—12.5 errors per 100 sums. Subtraction sums—20.0 errors per 100 sums. Multiplication sums—15.5 errors per 100 sums. Division sums—15.5 errors per 100 sums. (All figures are based on 100 sums worked.) The average number of errors made per paper by girls was 3.961, by boys 3.989. In all but two cases the compound operations showed far more errors than simple operations.

A second test was then devised and given to the testees. All the work contained in the first test was included in this test, but it was set in larger units, e.g., Grade VIII: first test—work in 27 units of work; second test—same work in 12 units of work.

The first result that showed up from this second test was that less work was completed by the scholars—roughly about 7% less. There was also an average increase of 5.5 discoverable errors per 100 sums over the first test.

These tests were given to two groups of students who had reached the Leaving Certificate standard of education.

The average number of errors made by Group A of these was 2.8 per paper; by group B, 3.5; by primary school pupils, 3.9.

All errors made throughout the test were then classified under eight heads, namely, careless errors, errors in calculation, errors in procedure, errors due to faulty setting out of sums, errors due to use of wrong tables, errors apparently due to memory lapses, errors due to faulty figures, psychological errors.

Accounts of experiments in mathematical calculation carried out by the writer in Victorian primary and secondary schools were included here.

Conclusions

1. There is little material difference in accuracy between boys and girls.
2. Untidy work definitely leads to inaccuracy.
3. Inaccuracy decreases slowly as the child progresses through the school.
4. The subjective opinions of teachers regarding inaccuracy are not infallible.
5. A large increase of errors in compound rules in Grade V suggests that some modification of the curriculum may be necessary for that grade.
6. Subtraction shows a far greater amount of inaccuracy than each of the other three rules.
7. Inaccuracy appears to be reduced by rote learning of mathematical relations.
8. An increase in subtraction and division rote learning seems to be necessary in Grade IV.
9. Work set in large units reduces the amount of work completed and never results in greater inaccuracy.
10. If a teacher strives for greater accuracy in his class he usually gets it.
11. Errors in mathematical calculations tend to separate themselves in well-defined groups.
12. An increase in oral arithmetic tends to eliminate inaccuracy.
13. Accuracy is definitely increased by building up the child's confidence in his ability to be accurate.

14. Each child has a natural speed at which he can work. If this speed is exceeded inaccuracy immediately increases.
15. The use of one-line solutions of problems in senior grades leads to greater accuracy.
16. There is an urgent need for more intensive research into this problem.

Suggestions

1. The teacher should insist always that work be neatly arranged and well written.
2. An increase in rote learning, particularly in subtraction and division relations, seems necessary. Study of the four rules needs frequent revision throughout the school-life of the child.
3. Many errors in subtraction could be traced to the fact that children had been taught by several methods. It is therefore possible that some standardization of methods in the teaching of subtraction would be worth while.
4. Short division should be taught *after* long division, not *before* it, as it is now.
5. There should be an increase in the amount of oral work and a decrease in the amount of written work in arithmetic.
6. The short problem method of setting work is much superior to the long problem method.
7. One should build up the child's confidence in his ability to be accurate.
8. The child's *natural* speed of calculation should be found and used.
9. One-line solution of problems should be adopted as much as possible.
10. All teachers should recognize that inaccuracy occurs far too frequently, and should carry out objective testing to find causes so that remedies may be discovered.

THE MOST SUITABLE AGE FOR COMMENCING AT THE
PRIMARY SCHOOL AND THE SUBSEQUENT SCHOOL HISTORY
OF THE AGE GROUPS INVOLVED

W. M. PHELAN

Method

Part I.—Accounts and results of similar investigations.

1. 'When should a Child begin School?' An investigation carried out in London by W. H. Winch.
2. 'The Relation between Entering Age and Subsequent Progress among School Children.' Leonard P. Ayres, Director of Education of the Russell Sage Foundation, New York.
3. 'Relation of Mental Age to School Success.' Department of Public Adjustment of the Dallas Public Schools.
4. 'School Progress of Under-age Children.' The Child Guidance Department, Summit, New Jersey.
5. 'The Exclusion of the Five-year-olds.' Extracts from *National Education*, the official organ of the New Zealand Education Institute.
6. Report to Board of Education, London, of Consultative Committee on Infant and Nursery Schools.

Part II.—An investigation of 1032 cases from one secondary school, University High School, and two elementary schools. University High School—523 histories examined; Elementary School A—99 histories examined; Elementary School B—410 histories examined.

The reason for the inclusion of a secondary school in the investigation was to discover whether there was a tendency on the part of pupils of over average ability to begin school at an early age.

The pupils from school A may also be designated as special pupils in that they are the pupils who have spent the whole of their school-life in that school and have reached the senior grades. Many of their less fortunately equipped brethren have fallen by the wayside.

However, with regard to school B it may be said that the

school history of a group of average pupils has been investigated.

Conclusions

The large proportion of pupils failing to complete a normal course demands that we must either cut down our curriculum or look elsewhere for the cause of this. This cause may partly be found in our haphazard starting age and, on occasions, in our haphazard treatment of a pupil when he does start. We might continue to allow pupils to start at 4½ years, but instead of compelling them to start on the day that they turn six, we should compel them to commence school at the beginning of the year in which they will be six. In this way two homogeneous groups would result and the teacher would be enabled to handle her class, in so far as it is possible to handle it, as a single unit. All her pupils would, in a measure, be able to deal with the same matter in the same method in the same time. Pupils would not be straggling into the school throughout the year, many, very often, on the day on which they turn six.

THE RESULTS TO DATE OF THE REVISED COURSE OF STUDY AT THE COBURG EAST TRAINING SCHOOL

O. C. PHILLIPS

In this investigation an attempt has been made to evaluate the results obtained during the years 1933-1936 from the operation of the revised Victorian curriculum in an elementary school.

The Coburg East School is situated in an outer industrial area, and caters for the needs of children of factory employees. With an average attendance of 650 pupils this school is used for teacher training.

Method

The method adopted throughout the enquiry has been to seek the opinions of teachers, employers, parents, pupils

and ex-pupils, and from an analysis of these to indicate certain tendencies which appear to have resulted from the operation of the revised courses.

The major problems associated with the implementing of the curriculum which are treated in this investigation include the reasons for the apparent overloading of the curriculum, the advances made as a direct result of the application of modern class-room practice, the closer link between home and school, the effect of the revision upon school discipline, and major disabilities arising from large classes, inadequate equipment and the examination system. Suggested amendments to the existing curriculum based upon the experience of the teachers are also included.

Conclusions

Tentative conclusions are submitted as a basis for further investigation covering a wider field, and of these the most important are:

1. The introduction of the revised courses represents the most significant educational advance made by the school.
2. A misconception with respect to the quantity of facts to be presented is evident, and this has produced an overloaded curriculum.
3. This misconception is due in part to the following causes:
 - (a) The existing methods of inspection and examination.
 - (b) Competition between teachers arising from the present method of teacher assessment.
 - (c) Failure to recognize that the number of facts indispensable to all is relatively small.
4. In mathematics certain topics lack reality, while others have proved to be beyond the mental ability of the pupil in the grade in which they are attempted.
5. A suggestion is offered that Grammar and Composition

be completely merged and that the two subjects be taught as 'Fundamental English.' Reasons for the unpopularity of Grammar are given.

6. In literature the need for a larger number of selections of the descriptive and narrative type is stressed, and evidence showing the need for a complete revision of *The Victorian School Readers* is provided.
7. Physical training is not at present functioning as a school subject, and suggested reforms are indicated.
8. The increase in the amount of pupil activity has made the school a more attractive place for the pupil, and further possible advances in this direction are outlined.
9. The attitude of the pupil is demonstrated by his eagerness to attend school and by his efforts on behalf of the group. A high standard of work is being obtained.
10. The attitude of the parent is shown by his desire to assist the school in a practical manner, the assistance he renders the child in the preparation of material, and his appreciation of the finished work of the pupil.
11. No evidence is advanced in support of the view that the parent is greatly interested in educational reforms as such.
12. In his attempts to develop individuality the teacher has been hampered by large classes, lack of suitable equipment and the examination system.
13. There has been little increase in the financial outlay of parents for school books and material.
14. No instances of cases of fatigue and of nervous disorders due to the difficulty of the subject matter could be discovered.
15. It will be difficult to make further advances without adequate library facilities, and the need for an auditorium and workshop in this school is stressed.
16. The examination system is proving a severe handicap, and a suggested reform is outlined.

SECONDARY EDUCATION IN A RURAL AREA (NORTHERN VICTORIA)

L. J. PRYOR

The aim was to ascertain the extent to which the Victorian State Secondary School system is meeting the educational needs of the rural population; at the same time to discover how far the present system of secondary education is appropriate for rural areas.

Method

Enquiry was restricted to the area within the following boundaries: the Bendigo-Echuca Highway, the River Murray, a 'line' southward from the Murray to Sea Lake, the Sea Lake-St. Arnaud Highway, and a 'line' from St. Arnaud to Bendigo. The most detailed investigation was made in the Boort district, a district served by a Higher Elementary School. The records for the Boort Higher Elementary School over the last twenty years were closely examined, and the main lines of enquiry were suggested by them. Information, in the form of statistics and opinions, was also solicited from schools by means of questionnaires. There was a satisfactory response from teachers of small rural schools, higher elementary schools, high schools, and girls' schools. The evidence submitted by them served to confirm the conclusions reached during the survey of the Boort district. The investigation includes a map showing the 'sample' schools, and the statistical and other evidence compiled from various sources during the enquiry.

Conclusions

1. Nearly 100% of the children in rural areas and the majority of the children in rural towns complete their education during their fifteenth year.
2. A small minority proceeds to post-primary education in high schools, higher elementary schools, technical schools and girls' schools, but the evidence shows that pupils of these schools come mainly from the country

township populations and only rarely from the farming population. Hence it is concluded that an almost negligible proportion of farmers' children receive post-primary education. So the present secondary schools are not true 'district' schools, and the permanent element in the rural population remains educationally starved.

3. The instability of the population of schools was noted. Very few children enjoy a period of fairly continuous education.
4. There is a periodical lag in child population and a consequent cyclical decline of country schools.
5. There is also a noticeable 'dropping out by the way.' Very few pupils proceed to the fourth year of the secondary course (Intermediate Certificate). Each year fewer pupils remain to be promoted, and thus the majority of pupils in each form are recorded as 'finally leaving.' So what secondary education does exist appears to be rather inconclusive and aimless.
6. Pupils' academic qualifications play very little part in determining their later vocations.
7. It is apparent that, in so far as secondary education points to the University, an injustice is done to the great majority of country children who will—and should—live their lives on farms or in country towns. Therefore it would seem certain that the present curriculum has the wrong bias and content for children in rural areas.
8. Secondary education has comparatively little prestige in the country. It is regarded as a 'polish'—as unnecessary, unpractical, and remote from everyday experience. The average farmer takes only the utilitarian point of view, and has no faith in advanced education.
9. Problems of expense and travelling also help to explain the lack of support accorded to secondary schools in the country.

10. There is a need to correct the narrow attitude of the rural community and, at the same time, to adjust the curricula and organization of secondary schools in rural areas so that advanced education (to age of 15-16) will be respected and demanded.

In conclusion, the writer suggests the nature and composition of an 'Advanced Rural School' on a district basis, which would supply the educational needs of a rural community on a broad plane and achieve a greater harmony between the school and the rural environment.

THE EDUCATIONAL NEEDS OF A RURAL COMMUNITY

W. C. RADFORD

The aim was to discover

1.
 - (a) The numbers engaged in the various occupations of the community of Bairnsdale (Victoria).
 - (b) The educational facilities offered to the children of parents engaged in those occupations.
 - (c) The occupational classes in which the children did not avail themselves of the opportunities offered by those educational facilities.
 - (d) The destinations, over the years 1930-36, of the ex-students of rural and secondary schools in the community.
2. The scope of work done at present, and the opinion of the workers as to their duties, in the following occupational classes:
 - (a) Home duties.
 - (b) Commercial pursuits.
 - (c) Farming.
 - (d) Fishing.
 - (e) Certain technical and trade jobs.

3. The object then was to arrive, with the help of their replies, at some conclusions as to the best type of educational administration, and the best bodies of educational material, to offer to the children of the community in order to equip them as fully as possible to take up in the community a complete life having regard to their almost inevitable social *milieu*.

Method

Statistical information as to occupations and numbers was obtained from:

- (a) Electoral rolls
- (b) The Commonwealth Statistician.
- (c) The Victorian Government Statist.

Educational material was obtained from school and administrative records.

Information as to prevailing practices in occupations and opinions as to the relative importance of various parts of the work in those occupations were obtained by means of questionnaires sent out to farmers, parents of children attending school, fishermen and commercial men, while certain tradesmen were interviewed and answered questions drawn up on the lines of a job analysis survey.

Conclusions

1. Certain classes in the community—notably the labouring, technical, and farming—do not use the secondary educational facilities as much as they could and should.
2. The courses at present offered to children at a secondary school level are neither the most suitable nor the most attractive for a big proportion of the students.
3. In a rural community the separation of post-primary education into two separate schools is unwarranted.
4. A greater proportion of school time and attention should be devoted to:
 - (a) Home Economics.

- (b) Local topics as the first steps to wider knowledge.
 - (c) Subjects more suited to an agricultural community.
5. This would be made possible by establishing one general school differentiating its courses after the first year to provide for the further study of Home Economics, Farming, Commercial and Technical subjects.
 6. The school staffs need more detailed knowledge of local conditions and local opportunities, as well as more general knowledge of career possibilities, in order to advise their pupils more accurately, and in order to guide them to more certain avenues of employment than many of them now reach.
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THE MULTI-PURPOSE SECONDARY SCHOOL IN VICTORIA

C. T. SCARFF

Aim

The aim was to examine the work being done by multi-purpose secondary schools in Victoria, and to consider the problems relating to these schools.

Method

The first part of the work traces the beginning and the growth of secondary education in Victoria. The several courses which it was proposed should be offered in the new schools are described, and the fact is stressed that they were to be multi-purpose schools with no undue emphasis on studies leading to matriculation.

The subsequent bias towards University entrance qualifications, together with the effect of this on curriculum content, is shown; but the points are made that these schools did not depart altogether from their original aims, and that in the last ten or fifteen years there has been a trend towards

the ideals of the 'modern' school. This is illustrated by the examination of a typical academic high school curriculum.

Then follows another investigation into the courses of such multi-purpose schools as Wangaratta High School, where a special girls' course is offered, and Frankston High School, where special courses for both boys and girls are in operation. A full analysis of the non-matriculation courses at the fully-developed multi-purpose schools—Shepparton, Horsham and Mildura—follows, and important problems are considered, e.g., a common first-year course, the 'wholesale' teaching of a second language, and junior technical training. A suggested modified 'matriculation' course is outlined.

The investigation concludes with a summary and a statement of conclusions reached.

MATHEMATICS AT WORK IN SCHOOL AND INDUSTRY

A. R. SHANNON

The study was undertaken in order to test the subject matter of the mathematical courses prescribed for Junior Technical Schools, and to determine whether it was necessary and sufficient to meet the requirements of artisans in the making.

Method

The procedure was to consider the various courses of Mathematics as at present laid down, to delete those parts for which no use could be found, and then to give consideration to the inclusion of any matter till now omitted.

Consideration was given to the various subjects in the following order: (1) Arithmetic—the fundamental basis of mathematical training; (2) Algebra—at root a generalized form of Arithmetic; (3) Geometry—introducing spatial relations; (4) Mensuration—the application of the foregoing to practical exercises; (5) Trigonometry—an advance

on Mensuration in that angles as well as sides are brought to bear on the solving of practical exercises.

The subject matter for the five Mathematics groups having been determined, their use was then shown in the three courses of work:

1. Trade Mathematics for electrical apprentices.
2. An experimental course for machine shop engineers as designed and conducted by the writer at the Collingwood Technical School during 1935.
3. A course in rural Mathematics.

Finally, some suggestions were included for the organization of the courses laid down.

THE COST TO VICTORIA OF A BURNHAM SCALE OF SALARIES FOR TEACHERS IN SECONDARY SCHOOLS

L. E. STEVENS

Method

The genesis of the Burnham scales for teachers in England and Wales is mentioned and their operation as it concerns secondary teachers described. Similar scales for secondary schools in the Transvaal, Queensland and New South Wales are then detailed. Victorian secondary teachers' salaries are tabulated, and the system of classification is described. It is pointed out that 50 per cent. of the men and 57 per cent. of the women are in Class V, the lowest class, for which the salary maxima are £324 and £264 for men and women respectively, whilst 79 per cent. of the men and 83 per cent. of the women are in the two lowest classes.

A table showing the numbers of teachers (men and women separately) in the five classes grouped according to the completed years of service strikingly demonstrates the dominant influence of seniority in determining promotion from class to class. Another table shows that the average times in the service as classified teachers of men and women in the

highest class are 35·9 and 34·3 years respectively. The official estimates of expenditure on salaries of secondary teachers in 1935-36 and 1936-37 are shown to amount to £475,760 and £478,930 respectively.

Three schemes, including unbroken scales, are then postulated and their costs calculated. In each scheme 80 per cent. of the teachers are in the lowest class, i.e., the class to which the unbroken scales apply. Promotion from this class to higher classes is to depend on ability, and promotion to the highest class is possible direct from any of the lower classes. In Scheme I the unbroken scales are £204-£12-£420 and £180-£10-£340 for men and women respectively; for Scheme II, £204-£24-£444 and £180-£20-£360; and for Scheme III, £240-£29-£501 and £192-£24-£262-£23-£402.

Increases on the official estimated expenditure for 1936-37 are 13 3, 18 4 and 30 0 per cent. respectively, assuming that 80 per cent. of the teachers in the lowest class in each scheme are on the maximum salary for that class. A comparison of the average salaries of certain groups for 1936-37 with the average salaries of the same groups under the three schemes is made. Scheme III, the salaries under which approximate to those in New South Wales, is advocated. The advantages of the unbroken scale are summarized.

THE NEED FOR VOCATIONAL EDUCATION IN VICTORIA

FRANCES M. SYNNOT

That the reorganization of the secondary system of education in Victoria has been long overdue is recognized by many, but so far there has been no definite attempt made to tabulate statistics upon which could be based conclusive evidence of the failure of the system to satisfy present-day demands. It has been the aim of this thesis to present such statistics and to set out a series of conclusions which may be based upon these tabulations.

Method

The opening chapter presents a survey of the historical development of the existing system, and the writer points out that 'vocational' as used in the treatise does not mean definite manual training but rather 'previsional' education, a programme arranged with an eye to the future occupation of those pupils who are incapable of successfully completing the course to the present Intermediate standard.

That the present system disregards the needs of these pupils is shown by diagrams based on the figures obtained from two schools—Charlton Higher Elementary School (a rural school) and Coburg High School (a secondary school in an industrial area). The records of these schools were examined with regard to the school career and after-destination of 1524 pupils.

When the destinations of the exit pupils of the Coburg High School are tabulated under the headings 'industrial,' 'clerical,' 'University,' 'professional,' 'other schools,' etc., there is found to be a wastage of 35·5%. That is, 35·5% of the pupils leaving the school have not been given any training which has a direct bearing upon their position in life. Again, of those pupils entering the school only 50·8% reach the Intermediate stage, 15·7% the Leaving, and no more than 1% go to the University; 71·6% take a course prescribed by the University and never reach that institution.

The figures obtained from Charlton have been examined in the same way, and the tabulations reveal a minimum wastage of 50·8%, 32·6% reach the Intermediate stage, and 2% reach the University. Figures obtained from Melbourne Boys' High School reveal a similar wastage. Investigations similar to this carried out in Scotland and America point to a similar conclusion.

The question immediately arises—why do such a large number leave before completing the course? The school records of those leaving before reaching Intermediate standard were examined, and it was found that 30·1% were retarded. Hence we may conclude that low intelligence

is an important factor in the failure of so many pupils to 'graduate.' Since, then, intelligence plays such an important part in success at school, it is obviously an absurdity to expect a predominantly professional curriculum to satisfy the demand for adequate secondary education. Moreover, the mechanization of industry and the changed outlook of men and women resulting from this make some form of reorganization of our secondary schools necessary.

Conclusions

The final chapter is devoted to suggestions as to the lines along which reorganization could profitably take place.

1. At the age of 11+ all children to be sent to secondary schools, whether High, Technical, Girls', or Modern schools.
2. Adequate information and advice to be given to pupils and parents concerning these schools.
3. Those intending to take up the professions to proceed to Secondary High Schools, where intelligence tests as well as tests of scholastic ability are to be used as the basis of distribution of bursaries.
4. Those wishing to enter industry to proceed to Technical or Girls' schools.
5. Those found to be incapable of proceeding to either of the above to be sent to 'Modern' schools, where the curriculum will be practical; these schools to have their own 'School Leaving' certificate.
6. The school leaving age to be raised to 15.
7. Continuation schools to be established to deal with the question of leisure and training for leisure. Compulsory attendance to 18.
8. Intimate and extensive co-operation to be maintained between Education and Industry.
9. Specialist teachers to be trained for all types of secondary schools.
10. Rural secondary schools to offer courses in Agriculture, Commerce and Domestic Economy.

11. Publicity campaigns over the air, in the press, in the school itself, to be entered upon.
 12. Travelling scholarships to be given to intelligent pupils in needy circumstances.
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THE RELIABILITY OF NEW TYPE EXAMINATIONS IN COMMERCIAL PRINCIPLES AND PRACTICE

J. C. TYNAN

The aim was to investigate the reliability of new type examinations in Commercial Principles and Practice.

Method

In constructing the first objective test an analysis of the syllabus was made, and statements covering the five main divisions of bookkeeping were classified under seven headings: journal entries, general theory, theory of bills of exchange, classification of accounts, adjusting entries and closing the ledger, profit and loss statements, and balance sheet statements.

Copies of numerous questions under all headings were circulated amongst commercial teachers, and the least suitable questions were discarded. With the exception of journal entries and classification of accounts the questions were set out in the commonly accepted forms of the new type examinations—True-False, Multiple Choice, Completion, and Identification. General directions for giving the test and a key for scoring were prepared. In the examination timetable for Term 1 provision for the objective test was made.

The ordinary examination consisted of two papers taking in all $3\frac{1}{2}$ hours, whereas the objective test took three-quarters of an hour. The results of the objective test were recorded in detail and the detailed results tabulated, showing the distribution of marks in each section and the mean and the standard deviation for each section. Next an analysis of correctly answered questions expressed as percentages was arranged in a frequency table. The objective test was then

correlated with the ordinary examination results (boys ·642, girls ·824, and total group ·781).

Another test on the work of Term 2 was drawn up, set and corrected, the correlations being: boys ·770, girls ·882, and total group ·789.

With the results of examinations held in previous years as a basis, an attempt was made to classify the pupils into the customary three groups—Pass, Lower Pass and Fail—on the results of the objective test for each term, to observe what proportion of pupils would remain in their category and what proportion would not. Then the results of the two types of examinations were compared in a table for each term, and a reasonable agreement was found each time.

The final results for Intermediate (Class 'A') being available, a comparison of the total scores on the ordinary examination for both terms and the combined objective scores was made, the former correlating with the actual Intermediate results at 6012, the latter at 6376. The final examination was of the ordinary type.

Conclusions

The tabulated results showed that the advantages claimed for the new type of examinations—economy of time, objectivity in scoring, diagnostic value, internal reliability in results—have been upheld. They also bear out the claim that examinations of a standard character could be made more objective by partial substitution of the 'short' answer for the essay type of question.

The results indicate definite trends, and it should be possible as a result of this investigation to commence the standardizing of 'short' type tests for all schools doing the same syllabus. Such standardizing, together with the construction of alternative papers for tests at each stage of the work, would be of particular benefit to teachers for diagnostic measurement, and should not in this particular subject have the fault of unduly restricting or moulding the classroom programme.

THE PREDICTIVE VALUE OF AN INTELLIGENCE TEST GIVEN TO STUDENTS OF THE MELBOURNE TEACHERS' COLLEGE

L. G. WHITEOAK

This enquiry concerns the extent to which the scores on a group test of intelligence of some 1,400 Primary Course students during the period 1926-1935 are related to their academic and teaching achievements during training.

A brief survey is made of similar studies published in various English and American journals of educational research and psychology. A bibliography is appended.

Method

The method adopted in the investigation required first the plotting of a percentile curve from the test scores of 1,750 Primary students. Next, a set of decile points was located, and the experimental group—some 1,400 students—were classified on the basis of their test scores into ten decile groups, presumably representing gradually decreasing degrees of general mental ability. Then for each student were tabulated the following data—final examination marks in each subject; the number of 'distinctions,' 'credits,' 'passes,' 'fails' awarded; final academic total; teaching practice marks and the final teaching mark; prior teaching experience and qualifications on entry to College. Within each decile group frequency distributions of the tabulated marks were made, and decile means and standard deviations calculated. Finally, correlation coefficients and coefficients of alienation were calculated for test scores and all tabulated marks.

Conclusions

- (a) Students making high test scores possessed, on the average, more and better academic qualifications on entry to College than students scoring low on the test. The correlation of qualifications and test scores was possible but low ($r = .305$; $P.E. = .02$). Zero coefficients were obtained for qualifications on entry and teaching practice achievement. Qualifications

on entry showed no closer relation to final academic standing than did test rank.

- (b) There would seem to be no connection between test rank and teaching achievement. All the coefficients were zero, or nearly so. In the most favourable instance prediction of teaching status from test scores would have been superior to guessing by 4 of 1% only.
- (c) Some degree of positive connection between subject marks and test rank was discernible in about two-thirds of the subjects given in the Primary Course. The connection, however, was slight, and varied with the subject, being most apparent with the more 'academic' subjects and least apparent or non-existent with the 'method' subjects. Comparisons of the distribution of subject marks in each decile showed that even when the distinction between the highest and lowest groups was most marked the overlapping of marks in all decile groups was considerable.
- (d) Correlation coefficients for test scores and subject marks, though suggesting in general some positive connection, were yet very low—the majority falling below .20. The highest coefficient was .369 for test scores and marks in English. It was calculated that in this instance prediction from test scores would have been superior to guessing by 7.1%.
- (e) Comparisons of the proportion of academic grades obtained in final examinations in the decile groups showed again a positive though slight connection. The test scores seemed to be slightly more discriminative in respect to 'fails' than for the higher awards. Awards of 'credit' or better were only 1.7 times as frequent in the first decile group as in the tenth; awards of 'distinction' or better were only 1.5 times as frequent in the first decile as in the tenth; while awards of 'fails' were found four times as frequently in the lowest decile as in the highest.

- (f) 'Fails' were present in all decile groups. The non-admission of either the whole or part of the tenth decile group would have made very little difference to the total number of 'fails.' Calculations indicated that the exclusion of even the lowest 3% according to test scores would have eliminated a large number who not only obtained fewer 'fails' than many in the higher groups but succeeded in gaining their Trained Primary Teacher's Certificate. It was estimated that injustice would have been done in the case of from 30 to 60% of those so eliminated as far as academic work was concerned, and in almost every case in respect to teaching achievement.

Concluding Remarks

The most significant fact that emerges from the enquiry is that the individual student presents a unique and complex picture, appreciation and understanding of which demands a many-sided approach.

If the results discussed are typical, it would appear that such a test as has been used for this investigation is inadequate as a single criterion for the prediction of academic and teaching achievement for Teachers' College students taking the Primary Course. This conclusion is in agreement with recent studies in this field to the effect that intelligence tests given at College level yield information of value chiefly when combined with the results from other fields of enquiry.

The probable explanation for discrepancies between test rank and College achievement disclosed in this investigation may be sought in the constitution of the student group itself and the nature of the abilities involved in mastering the subjects taken. The processes of selection extending far back in the life of the student and culminating in selection for College increase the homogeneity of the group as a whole. This is probably the most significant single factor contributing to the test's apparent lack of any marked discrimination in respect to College success. Again, most of the subjects taken

in the Primary Course are professional subjects involving, in all probability, the operation of specific abilities, special interests and factors of personality and temperament not measured by a test of general mental ability. In other words, given a certain level of general intelligence, perhaps sufficiently demonstrated by the mere fact of having survived the various selective influences at work, and a certain general academic background, success in courses for the Trained Primary Teacher's Certificate is probably determined by a large number of specific factors for which such a test is no adequate measure.

THE MULTI-PURPOSE SCHOOL IN A VICTORIAN
COUNTRY TOWN

(Based on a school of 160 pupils in a farming district)

A. A. WILCOCK

The aim was:

- (i) To examine the service being rendered by the school as far as it is indicated by official data.
- (ii) To examine, by comparison with aims and procedure elsewhere, what changes might be made to improve this service.
- (iii) To examine to what extent these modifications are possible under present conditions of finance and staffing.

Method

- (i) The data of the 1934 census are used to estimate the potential school population. The official returns over a five-year period concerning age and form on leaving and destination of ex-pupils are tabulated and discussed.
- (ii) Changes being discussed in the current enquiry of the A.C.E.R. Committee on Reorganization of Secondary Education are examined in their application to this school and in comparison with English and American

examples, the former from the Memoranda of the L.C.C. and the syllabuses of a typical Senior School, and the latter from data provided by Mr. J. F. Cramer, The Dalles, Oregon.

- (iii) The extent to which changes judged desirable can be made at present is discussed.

Conclusions

- (i) It is shown that, after allowing deductions for non-State education, mental unfitness, etc., there are within the school district approximately 75 children in each yearly age-group. In the D form of the school there are less than half this number, there is a sharp falling-off further up the school, and school life terminates at all ages and stages. No ex-students have passed directly from the upper forms of the school to the University, and the number passing to occupations requiring Leaving Certificate is small.
- (ii) The major changes considered desirable are
 - (a) Freedom in the organization of Domestic Arts and Industrial courses from the pressure of the academic side.
 - (b) After the second year separation of Domestic Arts and Industrial classes, in general subjects, from classes dominated by external examinations.
 - (c) Better provision for practical manual work.
 - (d) Courses which offer more value to the farming community.
 - (e) Provision of courses of a more general character leading to Leaving Certificate for those who require it for entry to teaching, banks, etc., i.e., an extension of the trend shown in the new courses for Maths. I and Physical Science.
 - (f) More attention to health education.
- (iii) Under present conditions the Domestic Arts course can be organized almost up to the ideal set out; the

industrial division, because of lack of equipment, falls far short of this; and the academic courses await further broadening by the University. So long as the Leaving Certificate, as it now exists, continues to exercise a dominating influence it will produce a harmful effect on the education of those who will never present for it.

VICTORIAN CENTRAL SCHOOLS COMPARED WITH JUNIOR HIGH SCHOOLS IN AMERICA AND MODERN SCHOOLS IN ENGLAND

MARY A. WILLIAMS

Aim

The aim was to discover the place and purpose of Victorian Central Schools in the educational system of the State by comparing them with American Junior High Schools and English Modern Schools, which cater for the same stage of post-primary education.

Method

Comparison of the three schools under the headings:

- (a) Growth (including circumstances which brought them into being).
- (b) Nature (a general description of the educational programme of each).
- (c) Aims, and methods of realizing aims.
- (d) Curricula.
- (e) Buildings.
- (f) Staffing.

Conclusions

(a) Aims

The American Junior High School aims at guiding pupils not doing an academic course by a series of exploratory courses in order to discover their aptitudes, inclinations, and abilities. This is a three-year course.

The English Modern School prepares pupils for taking positions immediately on leaving school by giving cultural training and adding a vocational bias in the last two years. This is a four-year course.

The system of Central Schools was brought into operation in Victoria in 1915 in order to cope with the increasing numbers desiring High School education, and were meant to act as feeders for High Schools, while at the same time giving opportunity for differentiation in capacities of pupils in order that they might be passed on to Technical, High or Commercial Schools according to their interests and abilities; 75% of Central School pupils pass on to various schools, but only about 40% to High Schools.

Figures for 1934 disclosed that it would be impossible for High Schools to absorb them all. The length of the compulsory course to be covered—it is a two-year course—and the lack of any definite plan make difficult the discovery of capacities other than academic ones; so this second aim is not being fulfilled. Such 'guidance' is the keynote of the American Junior High School. In our schools the course does not cater for the cultural equipment for life of those 25% who go straight to work.

(b) *Age*

The three schools fit into the post-primary scheme at the stage when the break is made with the primary school and secondary work is begun. The age of entry to each is 11+ or 12; nearly 75% of Victorian Central School pupils enter at 11+.

(c) *Buildings*

The Junior High School and the Modern School claim that their success is largely due to their special buildings, so that pupils make a nearly complete break with the elementary school and gain an entirely new outlook. This also enables provision to be made for libraries, gymnasiums, auditoriums and special equipment.

Victorian Central School pupils are housed in elementary school buildings, and so suffer from the lack of assembly

rooms, gymnasiums, etc., and of the sense of a nearly complete break with the past.

A greater disadvantage is the compulsory admission from the school's own VIth grade of pupils who must be taken since they are under 14 years of age, but who have no inclination or ability to complete an academic course. Parents sign an agreement to complete a four-year course, and the two years of Central School work is planned on this assumption. Those who leave after two years therefore leave with incomplete and inadequate training.

(d) *Curricula*

The Junior High School and the Modern School draw up their own curricula to suit local needs; our Central School pupils are bound to Merit Certificate syllabus and must all keep the same pace.

(e) There seemed to be a serious lack of definite purpose in the Victorian system, partly because of the dual task of fitting some pupils to go on with their school careers and others to go direct to work. Our great need is to recapture a sense of definiteness by some re-planning of this important phase of post-primary work.

MUSIC IN SCHOOLS

G. McCRAE WILLIAMSON

The aim was to estimate the position of Music as a subject in the curricula of Victorian Schools. State Primary, High and Technical Schools, Colleges and Roman Catholic Schools came within the scope of the investigation.

Method

Data were obtained partly by means of questionnaires and partly from interviews with teachers in charge of the subject in the various schools. Section I of the Investigation discusses the following as worthy aims of Music in schools:

- (a) To give pleasure.
- (b) To give relaxation.
- (c) To teach voice production.
- (d) To teach songs.
- (e) To teach how to read music.
- (f) To give some musical background as a nucleus for intelligent participation in the greater musical world during adult life.
- (g) To give opportunity for self-expression through music.

Section II consists of an investigation into the actual organization of the subject with regard to time allotment, content and instruction. It also describes organization in certain chosen schools, and estimates how far the aims as set out in Section I are being realized in Victorian schools under the present organization.

Section III considers generally various phases of extra-classroom activities in Music, and comments on certain activities that are described in the Investigation. Section IV discusses the possibilities of correlation between Music and various other subjects.

Conclusions

1. The time allotment for Music is usually inadequate.
2. The practice of grouping classes for mass singing is prevalent. Sometimes the groups number up to 200, resulting in the evils of wrong production and neglect of those pupils who need special attention. The unit for the singing lesson should be the class.
3. Part-singing is taught to some extent in most schools.
4. There is a decided neglect of voice-training, particularly in the senior sections of the State Secondary Schools and the Colleges. The lack of daily provision for voice-training may be accounted for by the difficulties of organization in secondary schools, but in primary schools it should never be omitted.

5. About 20% of the time allotted to Music is a suitable proportion for 'musical appreciation.'
6. There is a distinct tendency to neglect teaching the staff notation; often such teaching is completely evaded. It is recommended that staff notation should be taught on a tonic sol-fa basis, in easy stages from Grade III upwards, so that pupils should be able to read fairly well in the treble clef by the time they complete the course of Grade VIII or Form E.
7. Ear-training is obviously neglected. This is probably the correlate of mass singing.
8. Solo work within the class is not sufficiently encouraged. This can be done in both exercises and sight-reading, and is a valuable means of giving pupils poise in their renderings.
9. There is no Departmental syllabus for Music in secondary schools; but it is considered that a useful purpose would be served if, for example, a syllabus dealing with musical perception were issued.
10. The desirability of having a specially trained, full-time music teacher in each school is stressed.
11. There is a distinct need for more helpful supervision amongst the schools in the State system. A scheme of district advisers is suggested, and the need for supervisors in country centres is emphasized.
12. A trend towards special music rooms was noted.
13. The tonic sol-fa method is considered to have distinct advantages over the Justine-Ward Method.
14. The efforts of the visiting teachers of singing in the Roman Catholic Schools are mainly directed towards public performances for raising revenue devoted to the paying of lay-teachers' salaries. This severely limits the range of the subject.
15. A large number of schools have choirs which train for choral contests.
16. School bands are often unpopular owing to the difficulties of arranging practices, the high cost of instru-

ments, etc. The appointment of a Bandmaster to the Departmental staff is suggested.

17. The formation of Musical Societies in State secondary schools and colleges is recommended. Care should be taken to prevent members from developing into mere listeners.
18. More excursions such as those to the A.B.C. Concerts are eminently desirable. Suggestions for their increased effectiveness are made.
19. Not much is done in the way of correlating Music with other subjects.

It should not be inferred from this investigation that Music as a subject in our schools is dead. On the contrary, there is a great deal of activity in certain directions, but these activities are, for the most part, spasmodic and uncoördinated. There is a real need of definite planning so that the weak points in the present organization, namely, insufficient training in voice-culture, musical perception and appreciation, may be considerably strengthened, and the subject developed according to a sound and well-balanced scheme.

INVESTIGATIONS SUBMITTED
IN 1937

COMMERCIAL EDUCATION AS PROVIDED BY A HIGH SCHOOL IN A METROPOLITAN INDUSTRIAL AREA AND BY A HIGH SCHOOL IN A COUNTRY DISTRICT

FLORENCE BAXTER

PART I. A Study of the Course Offered

COMMERCIAL subjects were first introduced by the Education Department into its schools in 1913, and since then most of the metropolitan and country High Schools have offered parallel courses—commercial and professional—from the sub-intermediate stage. The subjects taught are Commercial Principles and Practice, Shorthand and Typing, the aim of the course being not to turn out trained operatives in any one section, but to continue to give a liberal education. The percentage of periods per week given to Commercial subjects in the metropolitan school is 31% in D form, 34% in C form, and 46% in B form. Thus the greater amount of the time spent in school is devoted to subjects of general education.

PART II. The Demand Existing for the Course—Reason for this Demand

The demand for the course was measured by a survey of the total school population and the percentage of that total from D form onwards taking the Commercial course. Figures given over the years 1934-1937 prove the existence of such a demand, the total percentage of children to each course being in the forties and fifties. In the metropolitan High School two-thirds of the girls take Commercial work, and about one-third of the boys. A study was made of the allotment of E form pupils between the two courses and of the numbers desiring but unable to take Commercial work. Figures show the numbers of Commercial students completing Leaving Certificate over three years to be six (11.75%), those completing Intermediate Certificate 41 (33%).

PART III. Questionnaire Given to Pupils in Metropolitan and Country High Schools, and Answers Showing the Course in the Light of the Students' Opinions and Attitudes. Critical Survey of the Work Done and Opinions Expressed on the Course

IIIA. Chief Points Shown by Answers are:

1. The students possess a utilitarian outlook on education—the school should provide a vocational preparation.
2. The bulk of the Commercial students complete Intermediate Certificate and then leave.
3. The majority wish to take up clerical positions.
4. Metropolitan students show a readiness to further their studies after leaving school.
5. The majority recognize the value of a good general education.

IIIB. Critical Survey of the Subjects taken in the Commercial Course

An examination of the subject-matter and method of teaching of Commercial subjects shows them to give useful mental training and involve no undue specialization.

IIIC. Does the Commercial Course at a High School Conform to the Requirements of Employers?

The general attitude here stresses the need for a good general education, but gives a high place to character and personality as one of the main requirements in the case of both boys and girls, though the latter need specialized training as stenographers.

PART IV

A. A Study of the Type of Demand for Exit Students

The metropolitan area covered is a large industrial one, and offers varied types of positions in all kinds of industries as well as the openings in the city itself. The country district, on the other hand, offers only a small range of positions.

B. Efforts Made to Secure Positions

The metropolitan High School circularizes firms in the locality. Successful students are registered with banks,

insurance companies and city firms for future employment. The country High School makes no definite effort to place exit students.

C. A Study of Destinations of Exit Students

These were studied for three years, 1934-1936, in both the metropolitan and the country areas considered. Trends only can be indicated as no cumulative record is kept. In general, with boys, the position taken depends little on the course followed. Figures show that the largest numbers go to office positions, the next largest to industrial positions.

PART V. A Questionnaire was sent to the Dean of the Faculty of Commerce and to a leading Accountancy College

Questions asked of Professor Copland related to the preparation desirable for a student who intends to enter upon a University course. Thus his answers are framed from this point of view. For such a student an academic education would be the most suitable. For those leaving school earlier and entering business, Professor Copland considers that the school Commercial course provides a useful and satisfactory training. This answers one of the vital points of the investigation. On these grounds lies the chief justification for varied courses with a vocational bias. More should be done for the average student and for those who will leave at fourteen. Many of the latter class study through Accountancy Colleges after entering business, and here it is admitted that their previous Commercial studies are of assistance to them.

PART VI. Conclusions and Suggestions

1. There exists an extensive demand for Commercial education, such a training being desired mainly because of its vocational application, though, as noted, it includes the necessary elements of a liberal education.
2. Both Professor Copland and Hemingway & Robertson concede that for the boy or girl entering business a Commercial education provides suitable training, but

for the student who is going to the University too much specialization at High School is undesirable, though the course gives knowledge which is of assistance to students in the early years of either course.

3. Employers prefer students with a good general education. Character, personality, ability and willingness are regarded by them as being of equal importance with high standards reached in examinations.
4. Positions taken often bear little relation to the course done at school, being conditioned by other factors, but the bulk of the Commercial students enter clerical positions. The numbers going to Business Colleges are small. These are mainly girls from the Professional side.
5. As the Commercial course is conducted in the High Schools to-day the tendency is for the Professional course to get all the prestige.

The Future Development of Commercial Education in State Secondary Schools

Conditions to-day force us to 'take the same attitude towards the higher education training of the future merchant, railways or insurance manager as we have so long taken towards the professional education of the future lawyer, physician or engineer.' Whether this training will be given in one multi-purpose school offering a variety of courses or in separate schools will have to be decided according to local conditions. With the country school in question, courses offered could be widened, a purely academic education having little appeal to many, and an organized system of transport could bring in children from the surrounding countryside to make full use of the facilities offered.

No pupil should be educated with a view to one specific calling, but all may receive training such as will make it easy for them to adapt themselves on leaving school to any occupation in the group to which the bias is related.

The Commercial course as it now exists in High Schools—

parallel with Professional—should commence in D form, but more flexibility should be allowed in choice of subjects. More lectures from outsiders could be given and more variations made in syllabus topics. The system of awarding scholarships should be adjusted to enable Commercial and Professional students to compete on an equal basis.

THE REORGANIZATION AND DEVELOPMENT OF AN
AUSTRALIAN PREPARATORY SCHOOL LIBRARY TOWARDS
MODERN EDUCATIONAL ENDS

A. J. BETHERAS

The school library, customarily regarded as a desirable but not an essential adjunct, has emerged in modern educational conception as an integral dynamic school unit. As such it is more detailed in organization, more exacting in administration, and more promising as an educational instrument. On various aspects of this new type of school library, still essentially experimental in character, an increasing volume of printed matter is becoming available, but comparatively few comprehensive reports on modern school library development are as yet available. In that it is among the first of its kind of Australian contributions, detailing an investigation extending over a period of four years (1934-1937), the report of which this is a brief outline should not be without interest to schools where library reorganization is contemplated.

Research has been directed in this investigation towards ascertaining the ends a school library should serve, evolving effective procedures, and ultimately presenting an adequate report.

Method

The initial step was to subject the situation to close analysis: to ascertain with what effect the library had been functioning, what elements of its organization might

profitably be retained, what modified, and what discarded with reference to the aims in view. That accomplished, an assessment of resources was made, consideration given to likely difficulties, and a tentative plan of operation devised. This was tested over a period and reviewed. In the light of the experience gained, modifications were made and developments planned with regard to policy, accommodation and equipment, classification, records, selection, circulation, initiating the practice of reading, promoting the reading habit, and reading guidance. As the library, thus invested with definite purpose, became increasingly active, various problems were analysed as they presented themselves. Reference was made to such literature on library management as was procurable from the files of the Australian Council for Educational Research and from other sources. Close supervision of all departments of the library was exercised to detect inadequacies, and continuous effort made to maintain progress along every line of planned development. As the volume of work in the organization increased, the method of delegating duties to capable boys was more extensively applied, and the librarian's function inevitably became less mechanical and more supervisory in character, and thus more favourable to developmental research.

Conclusions

1. The objective 'education for complete living' having been accepted, 'the library as the intellectual centre of the school' is endorsed. This is an ideal towards which the librarian should unceasingly strive. In such a transition period of education as the present, the issue will frequently be obscured, and gains resulting from past effort difficult to maintain. But if adverse situations be regarded as a challenge, the enthusiastic librarian need not be found lacking in resource. The successful library is conceived as dynamic in character, functioning as completely as possible within its limitations, but ever alert to break through to wider influence.

2. In library organization stability must not lapse into rigidity. Foresight with regard to the adoption of procedures is essential; then such modifications and extensions as suggest themselves may be put into practice with the minimum of temporary disorganization and with every prospect of success. Properly supervised pupil participation relieves the pressure upon the librarian and in itself opens up many avenues of development. A Play-Way organization is, in the writer's opinion, essential to the real success of a Junior Library of the modern type.
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THE RELATION BETWEEN SCHOOL EXAMINATION RECORDS AND THE SUBSEQUENT CAREERS OF EX-PUPILS OF A COUNTRY HIGH SCHOOL

A. R. BLACKMAN

The chief aim was to attempt to answer the question, 'Do pupils with different school examination averages tend to gravitate towards different occupational groups?'

Method

During the course of the investigation many side issues, bearing more or less directly on the value, suitability, or effectiveness of the present High School curriculum, arose. These were noted and commented upon. An attempt, necessarily limited in scope by the difficulty of collecting accurate data, was made to compare ex-pupils' examination averages with estimates of the ex-pupils' subsequent value to the community. Such estimates, while aiming at an interpretation of a 'subsequent career' wider than that of a 'subsequent occupational career,' were necessarily qualitative and arbitrary, being based on the following considerations:

1. Success in present occupation.
2. Moral qualities.

3. Interest in civic and community affairs.
4. Active interest in sport.
5. General mental outlook and cultural interests.
6. Attitude towards, and interest in, home life.

The examination averages were computed from school records, while the subsequent occupations of the ex-pupils were traced with the assistance of two former pupils whose association with the school covered, between them, practically the whole period dealt with in the investigation. The list of 'cases' included in the investigation comprised all ex-pupils since the school's inception—over twenty years—with the exception of those who had not reached adult age or about whom the necessary data could not be acquired. The complete list included over 600 ex-pupils. The subsequent occupations of these ex-pupils were classified into the following groups: (1) Professional Workers, (2) Semi-Professional Workers, (3) Business Managers and Agents, (4) Clerical Workers, (5) Agricultural Workers, (6) Mechanical Workers, (7) Shop Assistants, (8) Domestic and Unskilled Workers. Tables were then prepared to show average examination averages of all ex-pupils in each occupational group, together with the average mark for each group. Separate tables were first compiled for boys and for girls who left the school in each of the various forms of the school. Then by 'weighting' the average examination marks of pupils leaving the school from the various forms (to obtain more comparable averages), comprehensive tables—separate for boys and for girls—including all ex-pupils, were prepared. Finally a table was constructed to compare these 'weighted averages' with the estimates of the ex-pupils' value to the community, in an effort to discover any relation between examination averages and success in after careers—success, that is, considered in the wider sense.

Conclusions

1. More than 40% of pupils leave a country High School before reaching D Form, and more than 60% before

reaching C Form. In consequence of this observation it was suggested that more consideration of the interests of these pupils is necessary in the framing of the High School curriculum, which is at present bound by University requirements. The writer then put forward an outline of a scheme to provide a common less scholastic course during the first three years of the High School course, to be followed by a further three years' course leading to the Matriculation standard. This scheme involves the elimination of the Intermediate Certificate and of the Leaving Certificate Honours course, and the substitution of School Certificates.

2. In view of the comparatively small number of pupils proceeding to A and B Forms (12%), the practicability of consolidating these Forms in schools in the larger centres was discussed.
3. The tables presented show evidence of only slight positive correlation between examination marks and subsequent occupations. The range of examination averages is very wide in nearly all occupational groups. This may indicate either that examination marks do not form a sufficient basis for choice of, or for prediction of, a future career, or that there are many 'misfits' in all occupations. If the latter is true, as possible, to a very great extent, the need for greater vocational guidance and advice is evident. Also, since such misfits represent economic waste to the community, parents must be more prepared to follow such advice when it is given by experts; where financial difficulties prevent this the State should be prepared to offer greater financial assistance.
4. Except in the case of agricultural workers, and to some extent of professional and semi-professional workers, there seems to be very little evidence of positive correlation between the occupational groups of parents and children.

5. The very large number of girls who follow domestic occupations on leaving school gives further evidence for the need of a less scholastic course, particularly in the lower Forms of a country High School.
6. A graph showing the extent of overlapping in the occupations of parents and pupils suggests that our present High School course is tending to produce a more than sufficiently large group of scholastically trained pupils. The very large proportion of our school population which is drawn from agricultural areas was noted, and the need for these pupils of a less scholastic course was emphasized. Greater co-operation between Technical and High Schools in country towns seems essential to ensure that each child receives the type of education most suited to him.
7. In the later tables in the investigation some attempt was made to compare the school examination averages with an estimate of the value of each ex-pupil to the community in which he lives. As before, examination averages seemed to give little, if any, reliable indication of the worth of an ex-pupil to the community.

The general conclusion must be, therefore, that school examination records give very little, if any, reliable indication of the subsequent career of ex-pupils of the school, whether the career is considered solely from an occupational aspect or from the point of view that success or otherwise of a career can best be judged only by a consideration of all the contributions the individual makes to the society in which he lives. As a result of this conclusion and from the evidence of the investigation, there is an urgent need, particularly in country High Schools, for a curriculum more suited to the future interests of the great majority of the pupils, who will not proceed to University work and for whom the present curriculum contains much that is uninteresting and valueless, either vocationally or culturally.

THE PEDAGOGICS OF FRANCIS RABELAIS

H. R. BRODIE

This investigation may scarcely be said to have either aim or conclusion. It is an attempt to collect and arrange the educational conceptions of Francis Rabelais. It goes beyond a summary only in so far as it attempts also to present these in their proper historical perspective, and to compare them with the views not only of contemporary educationists but also of contemporary teachers.

Method

The work falls naturally into three divisions. In the first the life of Rabelais is sketched against the background of that breathless interval between Renaissance and Reformation. In the next—the least boring since it is most Rabelais—his utterances are set out under the headings:

A. The Real—

1. The Education of Gargantua (Old Style). 1
2. The learning of the Monks. -
3. The Universities. 21
4. The Specialized Studies. 22

B. The Ideal—

1. Gargantua to Pantagruel. 25
2. The Education of Gargantua (New Style). 27
3. The Specialized Studies. 28
4. The Abbey of Theleme. 29

In the last division Rabelais' utterances are criticized from the standpoint of Sixteenth-Century possibilities, and compared with those of their author's contemporaries.

Conclusions

As an educationist Rabelais has received unmeasured praise both from Rabelaisian scholars glancing at pedagogy and pedagogues venturing into Rabelaisian scholarship. A

critical examination, however, shows that he was neither infallible nor monopolistic; that much that he advocated was impracticable; that little that he advocated was not advocated by others; and that he failed to realize the existence of many problems of actual method. Erasmus, Montaigne, Bacon among the laymen, Mulcaster, Ascham, Ratke among the teachers, do not suffer from the comparison.

JAPAN'S PROBLEMS IN EDUCATION AND HOW SHE IS TRYING TO SOLVE THEM

A. S. BUTLER

The writer was primarily concerned with the modern trends in education in Japan. His personal observations during a recent visit to Japan are combined with material from the most recent books on that country.

Method

The social and political life of Japan is used as a background against which three major problems are discussed. These have to do with:

- (i) Health.
- (ii) Morals.
- (iii) The education of the masses to modern standards.

- (1) The ravages of disease and the steps taken by the Government and the school authorities to combat it are described.
- (ii) The Japanese concept of moral education is studied, together with the methods used for its inculcation in the students of all educational institutions.
- (iii) The principal types of school are described and their connection with the trades and professions indicated. Other subjects dealt with here are Female Education, Shortening of Courses, Language Difficulties, Examinations, Reforms in Educational Practice, Employment

of University Graduates, Reforms proposed in 1936, Censorship, and Militarization in Schools.

A copy of the Imperial Rescript of Education and a General Scheme of the School System in Japan from the latest official publication are included in the work. A Bibliography in which books are placed in the order of their value to students of education, together with a complete index of all quotations, is appended.

THE ARITHMETIC COURSE IN VICTORIAN HIGH SCHOOLS

A. H. A. CALDWELL

Method

In the collection of data the following methods were employed:

1. Two questionnaires to teachers. The first questionnaire, consisting of sixteen items, covered the objectives of arithmetic teaching and the distribution and method of treatment of topics. The second questionnaire consisted of fifty examples. Teachers were asked
 - (a) To comment on the suitability of the text as
 - (b) To comment on the suitability of the examples for the form indicated.
 - (c) To recommend its transfer, if necessary, to a more suitable form.
2. An examination of work programmes and examination papers from twelve schools.
3. An examination of 1936 Scholarship results in arithmetic.
4. An examination of the marks of 801 candidates in Intermediate Arithmetic results for 1936.
5. An investigation to ascertain the effect of five weeks' practice in solving short problems by use of pencil and paper on the ability to solve problems in mental arithmetic.

The investigation gives examples indicative of the standard reached in each of the four years of the Intermediate course in a number of schools, the mean time in weeks spent on the topics in each year, together with suggestions on the treatment of the topics.

Conclusions

1. 40% of schools exceed the suggested allotment of periods in the 2nd year, 75% in the 3rd year, and 50% in the 4th year.
 2. There is no evidence of any appreciable difference between the work of approved and that of non-approved schools.
 3. 67% of teachers express a desire for a more detailed course of study, particularly in the treatment expected of the Metric System and of profit and loss.
 4. The suggested course of study appears too much for a year's work for the 2nd year.
 5. The chief differences in treatment in the schools examined are to be found in:
 - (a) Work on H.C.F., L.C.M. and fractions.
 - (b) Papering of walls of a room.
 - (c) Units introduced in metric conversion.
- Conclusions.* There is moderate support for the following:
- (a) Exclusion of the inverse example, particularly in profit and loss, stocks and shares, mensuration and interests.
 - (b) Use of the Arithmetic course to teach a knowledge of Australian affairs, Government finance and social conditions.
 - (c) Reorganization of the work on compound interest and interests.
 - (d) Introduction of practice in filling in an Income Tax Return—Form B—during the 3rd year.
 - (e) Introduction of H.C.F. and L.C.M. incidentally.

- (f) Improvement of our standards of computation in each of the four years.
- 7. (a) Compound proportion is of doubtful value. Simple proportion needs greater stress.
- (b) Logarithmic work is good, but its uses are not generally recognized by students.
- 8. (a) Mental Arithmetic shows a low correlation with written Arithmetic (440 ± 011).
- (b) The amount of practice in Mental Arithmetic by the control group does not significantly improve their marks over the experimental group who used pencil and paper during the five-week practice period.

For an improvement in Mental Arithmetic it would appear necessary to give intensive practice in this branch of Arithmetic. Such an intensive treatment is not possible in the schools, and as there is only a low correlation with Arithmetic there would appear to be adequate reasons for abandoning the Mental Arithmetic test at the Merit Certificate examination.

MUSIC IN SECONDARY SCHOOLS

T. H. COATES

Method and Conclusions

The investigation implies the affirmation that music is an essential part of man's highest life, and therefore cannot be excluded from any reasonable scheme of education. In the first section the outline of a suggested course from the Kindergarten to the Leaving Honours stage is given. According to this, at the beginning of the secondary school stage children will have:

1. Good habits of voice production.
2. A large repertoire of good songs.
3. A thorough familiarity with the diatonic major scale, and the ability to read purely diatonic passages from the stave with marked doh.

4. A well-developed rhythmic sense, and the ability to tap the notes of any simple passage containing full and half beats and corresponding rests in $2/4$, $3/4$, and $4/4$ time.
5. Familiarity with many great melodies and their composers, and a sense of musical 'expressiveness.'

The suggested programme for secondary schools is based on this preparation, and aims at covering a balanced course in which voice preservation, reading, ear training, singing, musical perception, and general musical knowledge will receive due attention. The course for the first two years of the secondary school stage is identical for boys and girls, but thereafter the breaking of the boys' voices necessitates an entirely different course containing very little, if any, singing. On the other hand, girls in the third, fourth and fifth years are usually fond of singing, and are able to tackle advanced work in sight reading and part singing. Musical appreciation is important, but listening to music should never be allowed to crowd sight reading out of its place.

The second section is an attempt to survey the position in Victorian State Secondary Schools in 1937. It contains the results of a general questionnaire sent to ten schools selected at random. These indicate that, although few schools are able to apply a balanced course, considerable work of a varied nature is being done according to the individuality of the teachers.

A third section consists of a report on the methods adopted by the writer at Swan Hill High School during 1936-7. Because of the pupils' lack of preparation, the chief difficulty was the treatment of sight reading. Here it was decided to teach a little work thoroughly rather than to cover an extensive course rapidly, for 'reading is not a matter of knowledge, but of skill, and each stage depends on the one before.' The report contains details of a school concert and some tentative conclusions regarding the technique of handling pieces for appreciation.

In an attempt to get some light on the subject from the

point of view of the children themselves, copies of a simple question sheet were distributed among several schools. Unfortunately, the distribution of these was limited by the circumstances under which the investigation was carried out, and only 420 replies were received. The results, therefore, had to be treated rather broadly. The sheet contained four questions on preferences, one on standard composers, and the first six bars of 'God Save the King' in staff as a reading test, children being required to name the melody. The results are summarized as follows:

1. A large number of good songs is known to secondary students.
2. Too many children, however, prefer banalities.
3. Very little is known of the music of the great masters.
4. Concerted instrumental music is preferred to other types, e.g., to vocal solos.
5. About 50% of pupils have no ability at reading music.

The investigation concludes with a technical discussion on reproduced music and the attainment of high fidelity reproduction from records at low cost. Circuit diagrams and descriptions are given of two high-fidelity amplifiers and a novel baffling labyrinth, any of which could easily be assembled by a graduate in the exact sciences.

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A SURVEY OF THE SECONDARY SCHOOL POPULATION OF THE ECHUCA DISTRICT

C. PYM COOK

A. Education in rural districts requires special consideration because of the great difficulties in the organization of secondary schools.

1. The post-primary-school pupils are scattered over a wide area even in well-settled areas, and problems of transport or board arise.

2. In small districts such as Echuca it is difficult to provide for Technical, High School or Domestic Arts training for children who could benefit from such training.
3. Small numbers in the schools cause difficulty in grading pupils according to ability or course requirement. Instruction is impeded and pupils are forced to adapt themselves to the one course provided.
4. The curriculum is not suited to the type of student found in a country Secondary School. It is dominated by University or advanced Technical School requirements, and is not the general, cultural, practical training (wide but not deep) needed by country children in general.
5. Post-primary education is not continued past 14 years for the majority of country pupils. The number therefore requiring specialized academic or advanced technical training is small, and the large proportion between 11 and 14 years is not catered for.

B. An investigation was made in order to discover whether these contentions were borne out by the facts.

1. It was found that 68% (approx.) of the High School pupils in the years 1916-1937 left at 14 years of age after completing only one, two or three years of the course, while 92% of the Technical School pupils left at corresponding stages.
2. An analysis of the occupations of the parents showed that a large proportion of the children in the secondary schools of Echuca come from homes of labourers, farmers, small tradespeople and skilled workers. It also throws some light on the educational needs of the district.
3. The need for pupils of 'topped' schools to attend a secondary school forces all town children to begin a post-primary course which many will not complete. It was also shown that about 50% of the senior pupils

of rural schools examined leave to attend a secondary school. Attendances of town children fall away rapidly after 14 years. This is not so with country children attending a secondary school.

4. Intelligence tests given at the High School (1933-1938) and at the Technical School (1938) show the general level of intelligence at various class levels, and are valuable in indicating those who are not fitted for secondary work and will leave the school at 14 years of age.

C. Criticism of the System in vogue.

1. There is a wasteful duplication of staff and equipment in the provision of two secondary schools in the one small town and of Higher Elementary Schools throughout the district.
2. The curriculum is unsuitable in both High School and Technical School in that it does not meet the special needs of the district, thereby causing waste. Full advantage is not taken by children of available facilities because, though both schools are excellent, they do not provide courses of the right kind.

D. Reorganization suggested.—It would seem that as a multi-purpose school would solve the problem. A general cultural course would be provided to cater for the majority—those who leave at 14 and 15. Those children requiring a specialized University or Technical training would be given scholarships to a large rural centre such as Bendigo. This special higher secondary work would be begun at the D Form or 14-year-old level, so that there would be no gap or missed work for the combined school pupils transferring to higher schools. The senior classes of the rural post-primary schools would continue the general cultural curriculum begun in the earlier years. In this way it might be possible to make rural post-primary education of greater value to all children.

THE TEACHING OF BIOLOGY IN SECONDARY SCHOOLS

AMY L. CROFTS

Method and Conclusions

In order to throw light on the traditions behind the teaching of Biology in schools the history of the subject, in both schools and universities, was traced from the early years of the nineteenth century until the present day. In this historical survey the gradual development of a comprehensive course in Biological Science from a number of subdivisions of the subject is shown.

Comparative sections dealing with the teaching of Biology in Australian secondary schools, with particular reference to Victoria, and in schools in other countries, are given. The dates of introduction of the various branches of Biological Science in Victoria, their scope, percentages presenting at examinations, and changes in curricula are set out. Tables and graphs indicate percentages studying any branch of Biological Science in Victoria from 1907 to 1937. The fate of candidates studying these subjects is shown in the tables which indicate percentages passing and percentages failing, and which compare these figures with those of the whole number of candidates presenting for each year. In the critical survey of the present-day examination system in these subjects—which is given in detail later in the investigation—probable reasons for the fluctuations shown in these tables and graphs are given.

Although a slow increase in the number of those studying these subjects in schools is seen, the disturbing fact that about 87% of those leaving school at Intermediate Certificate stage have no systematic training in Biological Science is stressed.

Much criticism of the effects of the external examination system on the teaching of this subject in the schools is made. The tables showing percentages of failures in Victoria illustrate the great variability of standards and the abnormally high percentage of failures in recent years. The

examination of the Biological Sciences in Victoria is evidently an excellent example of the unreliability of our present examination systems.

The pioneering developments in the teaching of a comprehensive course in Biological Science in some of the accredited secondary schools of Victoria in recent years is shown, and there follows a full discussion of syllabuses, equipment, time allotment, and methods of approach used in these schools.

THE FINK COMMISSION ON TECHNICAL EDUCATION AND ITS EFFECTS ON VICTORIAN EDUCATION

C. C. CROSSKELL

The investigation is divided into three sections:

1. The events leading to the appointment of the Commission.
2. The proceedings of the Commission.
3. The effects on Victorian Education.

Section 1 commences with the 1872 Education Act, which abolished the Board of Education, a body which had controlled education in Victoria. Government control was seriously affected by the depression of 1891. A policy of retrenchment was carried out with very serious effects on education. The system of Payment by Results was continued, the Teachers' College was closed, and the monitorial system was extended to unreasonable limits.

Teachers' associations protested against the severity of the retrenchment policy, and teachers' congresses were held to demonstrate the value of a sound education. An agitation sprang up for greater facilities for technical education. In Parliament Mr. Deakin spoke scathingly of Victorian education. An association for the promotion of technical education was formed, and the *Australasian Schoolmaster*, an educational journal, constantly appealed for educational reform. Public confidence in Victorian education was shaken when

Mr. J. Bagge, a clerical officer with no teaching experience, was appointed permanent head of the Education Department. The long agitation for improvements in Victorian education resulted in the appointment of a Royal Commission on Technical Education.

Section 2.—The reports of the Commission show the enormous scope of the enquiry. Evidence was obtained from overseas, and members of the Commission visited various Australian States. The Commission constituted itself a commission on education generally and enquired into the Victorian primary system. The Education Department was severely criticized, and the Government was condemned for ruthless retrenchment. The loose system of technical education was also condemned. The Commission, which concluded its sittings in 1902, made a long series of recommendations.

Section 3.—The findings of the Commission led to many changes. Kindergarten, cookery and woodwork training was begun, the Teachers' College was re-opened, and Mr. Frank Tate became Director of Education. A revised programme of instruction was issued. Dr. Smyth became Principal of the Teachers' College and also Lecturer in Education at the Melbourne University.

This section also deals with the troubles which beset the Director in his efforts to improve Victorian education. Attempts at retrenchment after a severe drought were defeated by Mr. Fink in an able speech in Parliament. The Director's efforts led to the passing of the Education Acts of 1905. Registration of teachers and schools was made compulsory, and by 1906 most of the recommendations of the Commission had been adopted. High Schools and later Higher Elementary Schools were set up. The institution of central classes followed. A somewhat slower development took place in Technical Schools. Seven Junior Technical Schools were established in 1914, and this number increased later.

The section concludes with a summary of the results of the Commission's work.

RETARDATION IN A RURAL AREA OF VICTORIA

J. M. CROTHWAITE

The aim was to discover the amount of retardation present in a dairying district of Victoria, to elicit the causes of this retardation, and by means of comparison with statistics from metropolitan and other rural areas in the State to test whether, as is usually supposed, retardation is excessive in a dairying district.

Method

The area surveyed was that of Koo-wee-rup in South Gippsland. The survey covered nine schools with a population of 457 pupils. For purposes of comparison a similar investigation was made in the dried fruits area of Red Cliffs, where four schools were dealt with, these having an attendance of 768 scholars.

From each school were obtained the mid-year age-grade statistics as shown on the 'G Form' of the Victorian Education Department, the name and age of each retarded pupil in the school, the age at entry upon school life, and subsequent progress through the grades. Wherever possible, reasons for retardation were given, together with a brief account of each pupil's school history. The parent's occupation and social status were also obtained, and the grade teacher was asked to give his estimate of the pupil's scholastic ability. Marks awarded at the previous half-yearly examination were recorded, and in the Koo-wee-rup area the Intelligence Quotients of all retarded pupils above Grade III were assessed by means of the 'Otis Intermediate Test.' These I.Q.'s were then compared with the I.Q.'s of an equal number of non-retarded pupils from the same area.

Each teacher was asked for his attitude towards the promotion of pupils and his opinion on the chief causes of retardation in his own school.

The statistics obtained for the two areas were compared

with those prepared by Dr. Bachelard for Victorian Elementary Schools as a whole, and it was found that the amount of retardation in the dairying area was less than expected, and compared more than favourably with the figures for the whole State. In the dried fruits area percentage of retardation approximated closely to those for all elementary schools.

Conclusions

The writer concluded that children in a dairying district do not progress more slowly than children in other districts.

Apart from mental dullness, the chief factor causing grade retardation is late entry into school. This is true of both areas. In addition, in the dairying district nearly one-quarter of the retarded pupils owe their backwardness to over-work (milking) at home.

A tabulation of grades repeated by retarded pupils shows that in these areas Grades I and II are repeated more often than the others. While the inflexibility of our promotion system must in large measure be blamed for this condition, the writer is of the opinion that the replacement of sewing mistresses by fully trained assistants wherever possible would do much to decrease the amount of retardation in many rural schools.

AN EXPERIMENT WITH THE PROJECT METHOD, WITH SOME OBSERVATIONS ON THE GENERAL APPLICATION OF THE METHOD

G. M. CROWL

This investigation aimed at obtaining definite objective evidence of the value of the project method in teaching.

Method

The ideal manner of testing the method would have been to take parallel groups, teaching the one by traditional

methods and the other by projects. The small numbers available made this impossible. It was therefore decided that the Beechworth school should be used as an experimental school and the other similar schools of the district as controls. The five-point scale was used to make the inquiry as objective as possible, children being asked to state whether they liked a topic 'very much' or 'a little,' 'neither liked nor disliked it,' 'rather disliked it,' or 'disliked it very much.' From these results an 'Index of Interest' was calculated by assigning respectively 2, 1, 0, -1, -2 points for each choice and finding the percentage of the possible obtained by each topic for each form. The results showed a very definite preference for those topics which had been taught in a method involving projects or activities (between which no distinction is drawn here).

A second experiment, to determine the practicability of combining Geography with art work on activity lines, was made, the criterion being, again, the popularity of the topic. Here again a definite preference was shown by the children of E Form for those Geography topics in which their art work was correlated in a 'free' method.

An historical survey of the project method was made. The use of the method in recent years is of great importance, and deserves to be treated at some length.

In America projects and activities are being widely used. A questionnaire to Grant School, Oaklands, California, shows that their use is considered valuable for all secondary forms in all subjects. Naturally some subjects, the social studies, science, literature, and the like, prove more susceptible to the project method than others, but all are susceptible to a degree. Moreover, at Grant School it is considered that a wider application of the method could be made to advantage. Taking this school as more advanced than the average school in a State well known for its educational facilities, we see that the project method is not yet developed to its fullest value.

A similar questionnaire sent to England yielded disap-

pointing results: The educational system under the authority approached—Essex—is in a state of flux, being in the process of changing over to accord with the findings of the Hadow Report. Matters of internal organization thus could not be pronounced upon.

The late F. W. Sanderson, of Oundle School, aided by exceptional financial support, gradually raised the school work to an extremely high level, basing his studies on subjects of great magnitude. This school was so well equipped that it was able to make important contributions to the manufacture of war materials throughout the Great War. An important part of the school organization was an exhibition of boys' work—in senior and junior sections—which acted as a gathering up of the year's work.

In Victoria the project method is used rather differently in State schools and private schools. In the former the *Young Farmers' Club* is the crowning achievement of years of work along the lines of agricultural activities. The need for an exhibition or field day is recognized here very fully. The co-ordination of school and home and the co-operation of the parents are fully exploited.

In private schools, and especially in girls' schools, integration with a bias towards library work is noted. At least one boys' school is using a project curriculum based on the future needs of its students.

Conclusions

1. Projects are educationally valuable, but they require an integrated curriculum in order that time may be saved by using one project to help in the teaching of two or more subjects.
2. They are of inestimable value as a medium for introducing the school to the home, and the home to the school, both by using the natural enthusiasm of the children and by the direct method of holding exhibitions of work and activities.

THE CURRICULUM OF THE RURAL SCHOOL

G. DOWNING

The specific object was to ascertain if anything was being done in Australia to suit the curriculum of the rural school to country needs, i.e., to give a rural bias to the curriculum of the country school.

Method

Opinions of eminent authorities on rural education were collected, these proving somewhat divergent. Certain points, however, seem to stand out:

1. The utmost freedom in the choice of an occupation is the fundamental right of every child.
2. The door from country to city must be flung wide.
3. Culture is the birthright of the country child just as much as of the city child.
4. Local environment determines the basis of approach in all education.

Education in the States of Australia is governed by a central controlling body which defines a course of study for the whole State—city and country schools alike; though the modern trend is to allow a certain amount of freedom in many subjects. In Tasmania however, a notable departure has been made in the primary field. Area Schools have been established in suitable centres. To each of these schools all pupils twelve years of age and over are conveyed from the surrounding district. Bicycles and waterproof capes are provided for this purpose, and provision is also made for a hot meal or at least a hot drink at a nominal cost for all district pupils.

At the central school all the essential subjects are kept up, but craft work takes the place of nature study, drawing, civics and manual training. This craft work includes such things as plan drawing, farm woodworking, tinsmithing, leatherwork, blacksmithing and concrete work, all woven round a comprehensive course in agriculture, for the boys.

The girls study domestic science, housewifery, sewing, laundry work and such like. Favourable comment is made on the scheme under the following heads:

1. The levelling and broadening effect gained by the mingling of all pupils of the district.
2. The salutary psychological effect on backward pupils.
3. The carry-over of work learnt at school to the activities of the home.
4. The effect of the craft work on the regular classroom work.
5. The keen interest and appreciation of the scheme by parents.
6. The enjoyment by the children of the practical training.

In New South Wales, as in other States, Junior Farmers' Clubs have been established in connection with schools. The Education Department gives every encouragement and support to the movement, and the clubs have done much to stimulate the interest of parents and pupils. The constitution and activities of these clubs are briefly discussed and some criticisms offered.

Courses of agriculture are taken at certain High Schools, Intermediate High Schools and Rural Schools in New South Wales, and these are given hort treatment and criticism. But the main interest in New South Wales agricultural education centres in the two residential Agricultural High Schools, Hurlstone and Yanco. Yanco is treated in full detail.

Yanco gives essentially the same academic training as the other High Schools of New South Wales, and adds a splendid compulsory course in practical and theoretical agriculture. Its aims are:

1. To provide boys with a general secondary education with a special emphasis on science.
2. To give a thorough basic knowledge of elementary theory and practice of agriculture.

3. To encourage boys to take up agricultural pursuits as a means of livelihood.
4. To enable boys to proceed to certain faculties of the University of Sydney.

The school has exceptional facilities for giving a comprehensive training in all aspects of farm work, and each of these is discussed in detail, together with the equipment, stock and crops on the school farm. A feature is made of a special course in farm mechanics which covers five years.

An attempt is made to sum up the work of the two Agricultural High Schools, and finally the opinion of an exit student on the work and worth of Yanco is given.

THE STUDY OF THE VOCABULARY OF A SELECTED NUMBER OF FRENCH COURSES USED IN VICTORIAN SCHOOLS

BROTHER T. V. J. DUFFY

The object was to analyse the vocabulary-content of certain French texts used in Victoria with a view to determining their suitability for school use in the light of modern scientific study of word-frequency.

Method

Part I. The Vander-Beke Word-Book is a list of French words scientifically tabulated in order of their range and frequency. This was used to test the vocabulary of thirty French texts. A great amount of word-counting had to be done to discover the word-range of empirically-constructed courses and 'undoctored' texts. A chart that accompanies the investigation presents in graphical form a summary of the vocabulary-content of the various courses and readers examined.

Texts are also examined from the point of view of subject-matter, length of extracts, illustrations, exercises, etc.

In the course of his study of texts the writer exposes the faults and inadequacies of the Vander-Beke Book.

Part II. In this section are summarized the replies of teachers and professors of French who were approached for their opinions on certain important issues, e.g., the desirability or not of 'literary' quality in school texts.

Part III. This gives an analysis of the views of pupils on the content and effectiveness of texts read. The opinions of pupils are not a reliable guide, but they deserve to be considered when an attempt is being made to discover the ideal type of reading matter for modern-language teaching.

Conclusions

If the desirability of limiting the word-range of school texts (particularly in the early stages) be accepted, many courses and readers in current use must be condemned. The writing of text-books by the method of 'taking thought' is unsafe, leading to the introduction of too many words, these often not the most valuable. The Vander-Beke word-list points to a better way and does not exclude the possibility of introducing words of common interest. The 'doctoring' of accepted stories is in harmony with the above method of writing courses.

ARE WE MAKING THE MOST OF OUR JUNIOR TECHNICAL SCHOOLS?

E. A. EATON

The popularity of Junior Technical Schools is now widespread. Each year metropolitan schools are obliged to reject many applicants who have completed Grade VI of the elementary schools, to the post-primary grades of which they are forced to return.

For the boy 'better with his hand than his head' the technical school appears to parents to be the appropriate place of education. Many technical schools take an active interest in finding positions for their students, whether they have graduated or not. Pupils are naturally attracted to such schools. The workshops and working-models on 'open' days,

and the displays of carpentry, metal-work and art-work at school exhibitions, all play their part in increasing the number of boys anxious to attend these schools.

Investigation shows, however, that the proportion of boys who remain at school for the three years necessary for the Intermediate Technical Certificate is very small, and that only about two boys out of three remain for even two years. Of those boys entering Brighton Technical School in 1929, only 59·6% completed two years' attendance. For 1930 boys the figure was 65·8%, for 1931 68·6%. At Stawell during the years 1930-36 the figures were 65·4%, 68·7%, 48·5%, 67·6%, 75·8%, 82%, and 56·6%.

All boys attending the Junior Technical Schools do the same courses, preparing for the Junior Technical Certificate (the minimum qualification for apprenticeship to the more highly-skilled trades) at the end of the second year, and for the Intermediate Technical Certificate at the end of the third year. The rate of mortality in these courses, due to leaving before the examination, or else to failure in it, may be judged from the fact that the records at Brighton, Collingwood and Stawell over a period of years showed no occasion upon which more than 25% of the boys who began their junior technical course from the sixth grade succeeded in obtaining the Junior Technical Certificate, or upon which more than 13% gained the Intermediate Certificate, although there were years when the percentages were much lower than those quoted.

In most schools only 50% of the boys doing their second year can be brought up to a standard which makes it worthwhile for them to sit for the Junior Technical Certificate examination. Easier courses are substituted for the standard ones in mathematics and science. Amongst the boys in the lower sections attendance is often sufficiently irregular to be significant.

The inference seems to be that the Junior Technical Schools have devised courses to fit boys to enter the 'technician' and 'skilled-artisan' occupational groups, but have neglected the

needs of the much larger class of boys who will belong to the ranks of unskilled labourers, retailers, small tradesmen, transport workers, and shop, store and factory employees. Although they are admitted to the schools, the boys who will ultimately enter these vocational groups are provided with a course of study no more suitable than that designed as a preliminary training for skilled artisans. It is recognized to-day that every individual can benefit by secondary education of the right kind. It is obvious from results that the present curriculum of the Junior Technical School does not provide the right kind of secondary education for the majority of its students.

If, however, attendance at the Junior Technical School were to be restricted to those sufficiently intelligent to pass the examinations for the certificates, the cost per pupil of technical education would be enormous. Yet there is little doubt that the average-to-dull boys would be better catered for in Modern or Multi-purpose Schools than they are at present, because in those institutions they would be studying courses to suit their own needs and capacities.

Would it not be appropriate to provide in the technical schools, using the background of workshops, art-rooms and laboratories, a less specialized course for those who will never aspire to the ranks of skilled workers? With our knowledge of intelligence tests, it should be possible to make a fairly accurate prediction of success in courses that are tested mainly by written examinations, and those boys who obviously would have no chance of completing the standard technical school course should be placed in a separate group. Certificates, known perhaps as Junior Technical and Intermediate Technical Certificates (2nd class), could be provided, thereby adding an incentive lacking at present. The courses of study leading to these certificates should be not merely simpler than the present courses, but more general in nature, and seek to develop worth-while interests and tastes in as many directions as possible by means of the psychological rather than the logical approach.

Significant changes in the revised courses for the boys who are average-to-dull would be the increase in the time devoted to English and the substitution of one course in generalized Arithmetic for the standard Arithmetic and Mensuration, Algebra and Geometry of the present curriculum. The increased time for English would result not merely in the implanting in the pupil of some appreciation of the better things in literature, but would raise the standard of oral and written expression and make for more ability and pleasure in letter-writing. With the substitution of a course of generalized Arithmetic of practical length, more time could be devoted to promoting accuracy, paving the way for trade calculations if such should be necessary in the occupation followed in later life. Workshop and art periods would be devoted to developing the abilities and interests of the individual rather than to the attempt to implant the skill of the tradesman in everyone.

The provision of courses suited to the abilities of average-to-dull boys would tend to raise rather than lower the standard of education among working men, because the incentive of a more attractive curriculum would tend to prolong school life.

ROMAN CATHOLIC EDUCATION IN THE DIOCESE OF SANDHURST

W. J. P. FORD

'The full purpose of Education is not to pack the mind full of information on temporal things, nor to prepare children for successful business careers. Its full purpose is only attained when, in addition to receiving secular training, the mind and heart of the child are disciplined in the law of God.' This is discipline which can only be secured by the co-operation of the Church, the Home and the School. In order to make such an education possible the Roman Catholic community has set up, wherever numbers and finances permit, Roman Catholic Schools in which not only

is specific religious instruction provided but the whole surroundings are permeated with a religious atmosphere, so that all the school work is leavened by religion.

In the Rural Diocese of Sandhurst there are twenty-nine parochial primary schools in twenty-three of the twenty-nine parishes. These schools are built and maintained by the Parish, the Parish Priest being responsible to the Bishop, Dr. McCarthy, and arranging with one of the Religious Teaching Orders for the staffing of his school. There are eight different orders of Nuns and one order of Brothers teaching in this diocese. Each order is responsible for the training of its members, and for this purpose training schools form part of their organization. Staffing is the concern of the Superior of each order, but the Bishop maintains his control through the Diocesan Inspector who, although a Priest, has completed the University Course in Arts and Education. Father F. X. Thomas visits and inspects each school, reporting to the Bishop in terms similar to those of the State School Inspectors, who also have the right of entry into Roman Catholic schools.

The curriculum is the New Curriculum for the State of Victoria, but the Church has been granted the right to introduce a special History course. This course has recently been developed in a series of articles in the Catholic equivalent of the School Papers, *The Children's World*. The course is designed with a central theme, a Christian interpretation which is essentially spiritual.

In addition there is a full course of Religious Instruction which involves the setting aside of one hour daily in the time allotment. This course not only inculcates a correct belief but also promotes a fit and fundamental form of conduct. The religious instruction is defined, but in all subjects taught the aim is that they should be permeated with Christian piety so that in all acts the growing child will be led to realize the necessity for religious principles.

The standard of the school buildings, which have a net attendance of 3,261 pupils, is generally beyond bare require-

ments. The percentage of Roman Catholic children of the Diocese in attendance at Parochial Primary Schools is 63·2%. The low percentage is explained by the rural nature of the Diocese. Since it is not found possible to support one-teacher schools, many Roman Catholic children of the school age cannot be provided for. In the large towns the percentage is much higher, whilst at Bendigo the percentage is 97·1%. Thus it will be found that only in rare cases do Roman Catholics fail to avail themselves of their own schools where they have the opportunity. The average attendance at Parochial Primary Schools is 89% of the net attendance of 3,261 pupils. There are one hundred and twenty teachers in these parochial schools; ninety-three Nuns, eight Brothers, and nineteen Lay Teachers. In only one instance are there more Lay than Clerical Teachers on the staff of a school. The average number of pupils per teacher is twenty-seven plus, but this is exceeded in many cases, there being four classes in the Diocese of over fifty pupils. Grade grouping is along the usual lines, with one exception where the natural linking of Grades V-VI is broken. The average ages for the grades of the Diocese are given in the following table:

Grade	Inf	I	II	III	IV	V	VI	VII	VIII
Average Age— yrs mths	5-10	6-8	8	8-9	9-11	11-2	11-7	12-9	13

Retardation is not extensive, the percentage being 4·07 for the Diocese—a percentage made unduly high by the figures for one school where conditions were exceptional; whilst an examination of results shows that 89% of those in Grade VIII secured the Merit Certificate at the 1936 examination. On examination of the figures showing the numbers passing on to secondary education, it is found that only a small percentage fail to continue their course in a Catholic Secondary School, despite the apparent inadequacy at the moment of the provision of secondary education for boys.

The financing of Parochial Primary Schools is the work of the Parish Priest. In the Diocese under consideration the money is raised mainly by parish functions and Church collections, although in the Bendigo Parish there is a Contributory Scheme whereby the Roman Catholic community bears directly the cost of the education of their children. The burden of finance is lightened by the fact that the members of the Religious Orders are able to live more cheaply than the ordinary man of the world and have given their lives to their vocation.

The survey shows that the Roman Catholic community of Sandhurst takes the matter of education very seriously and is willing to make sacrifices to maintain schools which, it is equally evident, maintain high standards of scholarship whilst providing as well for the spiritual development of Catholic children.

THE COST OF A BURNHAM SCALE OF SALARIES FOR TEACHERS OF THE SECONDARY SECTION OF THE VICTORIAN EDUCATION DEPARTMENT

J. W. KERSHAW

The aim was to calculate the cost of applying the London Burnham Salary Scale, slightly modified to suit local conditions, to the Victorian Secondary Service, and briefly to contrast conditions of service under the present salary system and the proposed scale.

Method

1. Modification of London Scale to bring maxima and minima into agreement with the maxima of the existing Class III and the average commencing salaries of graduate teachers possessing Diploma of Education.
2. Examination, from files of Classified Rolls and Education Gazettes, of the length and type of service of all secondary teachers in Classes V, IV and III.

3. Calculation of Scale salaries of these teachers by means of a method equivalent to that applied in England.
4. Investigation into present salaries and annual cost.
5. Calculation of annual cost of proposed scale for same year.
6. Calculation of cost of second year of operation of present and proposed scales.
7. Statistical and graphical comparison of present and proposed schemes.

Conclusions

1. By regarding the present first and second classes as comprising Headmasters, Headmistresses and Special Assistants entitled to salaries in excess of the scale, the Burnham Salary Scale can be applied to the Victorian Service with very little modification and a minimum of Departmental inconvenience.
2. The estimated increase of expenditure required for the first year of operation is £51,000, an increase of approximately 10%.
3. For the second year of operation £57,500 extra would be required.
4. The maxima of the scales would be reached in 17 years for men and 18 years for women, by annual increments of £15 and £12 respectively for every year other than the first, which would be regarded as in the nature of a probationary period.
5. Promotion to the classes above the scale limits should be open to any teacher on the scale who has the necessary ability, merit, qualifications and experience, and should not be awarded wholly or even mainly on seniority.
6. The proposed scheme would deal effectively with the present stagnation in the service, and smooth out the 'blocks' which at present exist at the maxima of Classes IV and V.
7. The status of the teacher and the morale of the service

- would be definitely improved, and much of the discontent due to frustrated ambition would be removed.
8. The present drift of young teachers, especially those with science qualifications, away from the Department would cease, and the Department would be able to attract the best of potential teachers if they knew that a salary at least commensurate with the extent and expense of the specialized training required would be forthcoming after a reasonable period of service.
 9. Gradually but inevitably the Department would be able to insist on higher qualifications on entry, and the proportion of graduate teachers, at present far too low in Victoria, would increase.
 10. School staffing would be stabilized.
 11. The withholding of increments in the case of unsatisfactory work would act as a spur to the less able teacher.
 12. Married male teachers would be assured of a reasonable salary during the period when the expenses of a growing family are normally becoming considerable, and this security would be an incentive to an increased birth rate and an earlier marriage age, both put forward as definite national needs amongst the professional classes.
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EXPERIMENTAL STUDIES OF 'INTELLIGENCE' AND LANGUAGE IN DEAF AND HEARING CHILDREN

E. LUND

The aim was:

1. To devise Performance and Language Tests of 'Intelligence' and Tests of Language Achievement for young deaf and hearing children ($8\frac{1}{2}$ to $12\frac{1}{2}$).
2. To make a comparative study of 'Intelligence' and Language in deaf and hearing children.
3. To measure the effect of a short course of visual

instruction in language on a toto-congenitally deaf case child.

Method

1. Construction of:
 - (a) A battery of six performance tests.
 - (b) A battery of ten tests involving language.
2. Application of tests to 30 deaf children.
3. Statistical study of results:
 - (a) To measure the reliability of the tests.
 - (b) To weight the individual tests.
 - (c) To locate any overlapping factors or group factors.
 - (d) To select those tests which measure results of teaching.
 - (e) To reveal the effect on the scores of:
 - (i) Age on admission to school.
 - (ii) Chronological age.
 - (iii) Time spent at school.
 - (f) To reveal the interrelation of abilities as measured by the tests.
4. Application of the tests to 30 hearing children of similar ages.
5. Statistical study of results in relation to results from the deaf:
 - (a) To locate the differences between the deaf and the hearing.
 - (b) To measure the amount of significance of these differences.
 - (c) To explain the differences.
6. The construction of a detailed course of visual instruction in language for six months, leading to simple questions on a simple prose passage.
7. The selection of three children, by means of the tests, as nearly as possible equal in age, time at school and test scores—one being from a manually taught class

(finger spelling), one from an orally taught class (speech and speech reading), and the third to follow the special visual course of instruction (using only reading and writing).

8. The actual visual teaching of the case child.
9. Re-testing the three children and comparison of progress made by each.

Conclusions

A. In respect of the Deaf considered alone.

1. The tests appear to be reliable.
2. The ability underlying scores on the Performance Tests of Intelligence appears to be the same as that underlying scores in the Language Tests of Intelligence and also, in large measure, scores in the Tests of Language Comprehension.
3. There is some slight evidence for an overlapping specific factor—perhaps even a special ability—underlying scores in tests of more definite language comprehension, which is thought to be partly memory for language forms and partly the operation of synthesis and translation from language to conventional signs.
4. Scores in the tests involving language comprehension correlate appreciably with time at school as well as with scores in tests of 'intelligence'; it is probable, therefore, that, with more experimentation, a scale could be developed in which the scores would reveal in large measure the results of teaching; the development of such a scale would involve a close knowledge of the stages of language development in the deaf and the construction of tests designed to establish whether or not a particular stage has been reached.
5. Predictions of language ability in individuals from scores in the Performance Tests, closer than 'poor,' 'medium' or 'good,' would not be very reliable, though as reliable as many others.
6. There is apparently no real tendency for the child

who comes to school earlier to score higher in Tests of Language Comprehension for that reason alone.

B. In respect of the comparison of Deaf with Hearing.

1. In scores on the Performance Tests the deaf group tested was, on the average, at least as good as and probably better than the hearing group from all points of view. This may be partially, but not wholly, accounted for by an average advantage to the deaf of one year in chronological age.
2. In scores on Language Tests, and especially in those involving Language Comprehension, the position is almost wholly reversed, the hearing being superior to the deaf from almost every point of view, in spite of being, on the average, one year younger.

C. In respect of the Case Child instructed visually.

As far as the tests can reveal it, a child taught entirely visually made better progress than either a similar child taught orally or a similar child taught manually, but this finding must be interpreted with great caution. It provides, however, some support for a greater emphasis on visual language and on syllabus development.

CALDWELL COOK'S PLAY-WAY IN ITS AUSTRALIAN SETTING

T. R. MCKENZIE

The investigation consists of (1) short accounts of the work of teachers in N.S.W., S.A. and Queensland, and (2) a comparison between the results obtained by teaching on orthodox lines and those obtained by letting the class learn the principles of dramatic criticism by writing plays themselves.

The Play-Way in N.S.W.

Dr. Mackaness has given a vivid and stimulating account of his Fort Street experiments in *Inspirational Teaching*. It

is unfortunate that his promotion to the Teachers' College stopped the experiments which would have enabled him to add chapters on grammar and speech-training.

Mr. Keller's class at Maitland High School studied a novel, *Troy Town*, by dramatizing it. They first sought for dramatic incidents and then discussed their dramatic quality and the sequence, modification and adjustment which would be necessary. Six boys were then deputed to produce a play, which was later acted before the class. This was severely criticized as lacking climax and balance and having a weak dénouement. It was then altered and in its final shape gained the approval of the class.

As a result of the interest aroused two days were set aside as Play Days, and scenes from Shakespearean plays, miracle plays, modern one-act plays, Latin plays, French plays and plays based on novels were produced by different classes. Costumes were in almost all cases made by the boys.

Mr. R. F. Hodge early in his career showed a gift for spectacular teaching. He was successful at Maitland High School not only in making the plays considered suitable for the different grades popular but also in teaching 'Macbeth' and the elements of Shakespearean tragedy to twelve-year-olds. He also made them enjoy Dogberry and Verges and Falstaff. In 1921 the various classes gave a performance of their dramatic work, and afterwards, at the request of the Education Department, toured the country. As a result of his work his pupils in different schools have done consistently well in examinations, repeatedly winning Shakespeare prizes.

Mr. Hodge applied the method to history, allowing the boys to dramatize Charles I's relations with the Long Parliament.

South Australia

South Australian teachers were influenced first by Wilson & Wilson's *Motivation of School Work*, and later by Mackaness's *Inspirational Teaching*. At Adelaide High School Mr. Allen, however, influenced directly by Caldwell

Cook, during the years 1922-1925 allowed the lower classes to dramatize such books as *Tanglewood Tales* and the upper classes to act in costume set plays such as *Julius Caesar*. Dramatic clubs were formed still higher in the school. These spread both to the Teachers' College and Murray Bridge High School.

Western Australia

In 1932 Mr. Collins's first-year pupils at Wesley College wrote a history of Rottnest Island, collecting their material from the Public Library and from their elders. The writing was planned and criticized by the class.

One period a week was given to prepared lecturettes by the boys on current affairs. In 1935 the boys wrote a history of Western Australia.

An out-of-door relief map of the world was made on a large concrete base, and models of objects of historical interest such as Stonehenge, a baronial castle, and the like were made during handcraft periods.

Dramatic work and free composition in prose and verse have been encouraged throughout the school.

In 1932-3 Shakespearcan plays were performed, and in 1934 a programme of one-act plays was given, of which half were written by the boys.

Queensland

Mr. Rossiter, who had been Vice-Principal of Maitland High School, introduced Play-Way methods to Thornburgh College.

An out-of-door performance of *A Midsummer Night's Dream*, a tour in the north, and a school stage are the most noteworthy features of a long list of Thornburgh dramatic activities. Other schools imitated them, and the Kennedy Teachers' Federation asked for and was given a lecture on the dramatic method.

In order to present satisfactory performances alterations in plays were needed. These were made by the pupils. Thus three scenes were written to take the place of the Prologues

in *Henry V.* Other original work based on history or literature lessons was carried out.

Several amateur dramatic companies have sprung from the activities in Maitland High School and Thornburgh College.

The Experiment

Two classes of roughly equal ability were chosen, one to be called the orthodox class, the other the experimental.

The orthodox class was given as full an account as possible of the setting of the scene, had the scene read to them by the teacher, and then were set to some form of handwork. As the reading progressed the class recaptured the portion read last period for the first third of the lesson. The usual topics were discussed at the end of the reading and as much life as possible was brought into the teaching.

The experimental class began by turning *Young Lochinvar* and *Incident of a French Camp* into plays. They were then asked to write original plays on topical subjects.

The two classes were examined in critical appreciation of three plays at the end of the year, and the orthodox class was found superior by 9%.

Conclusion

On the whole the best and poorest pupils had learnt more proportionately by the experimental methods, but the great majority gained little by it. It could be used profitably after the first six months of a secondary course if a suitable teacher were available.

SOME PHASES OF APPRENTICESHIP TRAINING IN ENGLAND AND VICTORIA

S. L. MARTIN

Method

The material for this investigation was collected by the author during 1936, when he was on the staff of Birmingham Central Technical College as Lecturer in Physics. With the

object of collecting information concerning the training of apprentices (mainly those in the engineering profession), visits were made to a number of firms and letters were sent to others requesting information.

The investigation deals fully with the methods of examination and the conditions of issue of the City, Guilds' and National Certificates. The high standard and growing importance of these are emphasized. A section deals with the work and structure of the following four Regional Examining Unions: Lancashire and Cheshire Institute, Union of Educational Institutions, East Midland Union, Northern Counties Technical Examinations Council. These organizations are Unions of Local Educational Authorities who have banded together for the purpose of conducting technical examinations. Practically the whole of England is covered by these Regional Unions.

The City of Coventry Apprenticeship Scheme and the Birmingham and District Certificate of Apprenticeship Scheme are described; the main features of these two schemes, which are unique at the present time in England, are the facts that they are both controlled jointly by committees composed of employers and technical college representatives, and that practical experience is an essential qualification for their certificates. The flexibility of the Birmingham Scheme, which does not prescribe any set courses of training, is noticed.

The training schemes of the following firms are described by the writer:

Austin Motor Company.
General Electric Company.
Leyland Motors Ltd.
Vauxhall Motors Ltd.
Alfred Herbert Ltd.
Metropolitan Vickers Ltd.
The English Electric Co.
The British Thompson Houston Co.

The scholarships and inducements to study offered by these firms to their apprentices are described. The fact that many of their apprentices are allowed one whole day per week for study at a Technical College is stressed.

Conclusions

A brief outline is given of the work of the Victorian Apprenticeship Commission, and it is concluded that at present this is catering only for the trade apprentice and not for the more professional type of apprentice or cadet. Part-time day education at a Technical College is compulsory for apprentices in trades proclaimed by the Commission. On the other hand, such part-time day education is practically non-existent for the higher grade apprentices. On the basis of what has happened in England, where many employers have voluntarily made this concession, it is concluded that an effort should be made in Victoria by the Technical Colleges to induce employers to release their young employees for the purpose of attending day-time classes.

ACCOUNTANCY EXAMINATIONS IN VICTORIA

K. A. MUIRDEN

The object of this investigation was to enquire into the system of examinations conducted by various Accountancy bodies in Victoria. These examinations have become very popular in recent years, just at a time when various educational authorities throughout the world have been advocating a restriction in such tests.

Method

The investigation commenced with a brief history of the various Accountancy institutes. The main object of this was to indicate how these institutes have grown from small beginnings into large and influential associations.

Statistics obtained from the various institutes revealed

primarily the relatively low percentage of passes in the various examinations, especially in the Advanced Accountancy paper of the Commonwealth Institute of Accountants. Over a period of five years only 16.9% of candidates passed in this subject, and in October 1935 only 8.3%. An effort was made to arrive at the reasons for such low percentages.

A comparison with figures obtained from other Australian States of examinations of the same institutes revealed that the percentage of passes in the different subjects approximated closely to the Victorian figures.

In order to obtain the opinions of managers of business firms, accountants and accountancy students on the subject of Accountancy examinations, three separate questionnaires were sent out to persons representative of each of these groups. There were forty-six replies from business men, thirty-seven from accountants, and forty-two from students.

Letters were written to the leading accountancy coaches in Melbourne inviting their opinions on the subject. Four replies were received, and a variety of suggestions made for improving the present system of examinations.

A comparison was made of the Victorian examinations of the Accountancy institutes with the examinations for the Diploma of Commerce and Degree of Bachelor of Commerce of the University of Melbourne.

The investigation also dealt with students' societies and post-graduate courses provided by the various institutes.

Conclusions

1. The 'personal' method of tuition is preferable to a correspondence course for students of Accountancy. In spite of the fact that this is generally recognized, the majority of students study by the latter method.
2. The subject of 'Costing' is receiving more attention in Accountancy circles than any other subject. It is advisable to cover this subject in a separate course, such as is provided by the Federal Institute or under the Australian Institute of Cost Accountants.

3. The method adopted by the Federal Institute of including State Income Tax as well as Federal Income Tax as a requirement in the examination 'Income Tax' is commended.
4. Frequently the Federal Institute emphasizes the importance of Executorship Accounts in its Final Examination papers, with the result that other equally important sections of accountancy are omitted from the papers.
5. It would be an advantage to the accountancy student if all the institutes included 'Banking, Currency and Exchange' as a subject. 'Economics,' however, is too wide to be included in an accountancy course. This could best be studied at the University.
6. As a general rule insufficient time is allowed to answer all questions on papers dealing with Advanced Accounting.
7. The method adopted by the Federal Institute and the Association of Accountants of holding their Final Examinations half-yearly in all subjects is generally preferred to the method of dividing these examinations into sections (Legal in April and Accounting in October) as adopted by the Commonwealth and Chartered Institutes.
8. The method of holding examinations on five consecutive evenings is too great a strain for the majority of students. At least one day between each paper should be allowed. It would be an advantage if the examinations could be held during the day.
9. An effort should be made by the institutes to publish the results as soon as possible after the examination.
10. A sudden drop in the percentage of passes at accountancy examinations is sometimes due to the fact that the examiner does not strictly adhere to the syllabus as set out for a particular subject.
11. Frequently questions in accountancy examinations are ambiguously worded. Examination papers should be

worked out by more than one person before being submitted to candidates.

12. The institutes are in a flourishing financial position, and it is suggested that some relief be given to students from the high fees at present charged.
 13. The service rendered by the student societies of the various institutes is very helpful to the accountancy students. Also the post-graduate courses provided by the institutes prove a boon to qualified accountants.
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THE OBJECTIVES OF TEACHING LATIN IN VICTORIAN SECONDARY SCHOOLS

R. B. OSBORNE

In view of the absence in Victoria of a comprehensive statement of the objectives of the study of Latin in Secondary Schools, an attempt is made to find out just what they are at present and what they should be.

Method

An analysis is made of replies to a questionnaire on Objectives, sent to a number of experienced teachers of Latin in various types of schools, supplemented by scientific studies, tests and measurements, the aim being to evaluate the extent to which a particular objective is attainable through the study of Latin, the extent of its actual attainment at present, and its worth when attained. In this way a list of what may be generally considered as valid objectives is determined. It was necessary to make out several lists varying with the length of the course, as the problem is complicated by the fact that 46% of all who begin study the subject for two years only, and that such pupils must secure their returns during that period, if at all. 63% do not reach the Intermediate stage. It is not possible to include these lists within the limits of this summary.

An important distinction is made between immediate and ultimate objectives, and emphasis is laid on the definite relation of teaching method to the attainment of an objective.

Striking features revealed by the investigation are, firstly, the great difficulty of establishing the validity of objectives very commonly presented as justifiable, and, secondly, the generally low degree of attainment at present of objectives almost universally agreed upon. The former difficulty would seem to lead to the conclusion that the whole question of values in the teaching of Latin should be thoroughly investigated by all engaged in presenting it to several thousand pupils in Victoria every year. The present comparative non-success in the attainment of objectives is attributable chiefly to faulty organization, both in the general system of education and in the individual schools, which leads to an unbalanced syllabus and unsuitable teachers, methods and classes.

Special consideration is given to an ultimate objective very commonly presented in support of the teaching of Latin, namely, the development of desirable habits and ideals which may be carried into other fields such as sustained attention, orderly procedure, accuracy and thoroughness. Conclusions are that transfer is not automatic to any considerable extent; the desired general habits must be developed first in the training field of Latin (which is very rarely); and specific training must be given in the application, outside Latin, of skills acquired through Latin.

In addition, two questionnaires were given to about 500 Secondary School pupils. The replies to one, in which pupils were asked to indicate on a list their reasons for studying Latin, are remarkable for the high percentage requiring it merely for certificate purposes. The second questionnaire attempts to discover the relative popularity of Latin as a school subject. The results are hardly reliable, but indicate that Latin does not occupy a high place. In both of these matters teaching methods are considered to play a vital part.

Conclusion

The general conclusion is that Latin, in common with a number of other school subjects, suffers from the lack of that fundamental feature of the organization of any course of study, namely, a considered and official statement of the ultimate objectives of the course; that the validity of many objectives commonly set down by teachers and other experts can be seriously questioned.

ADULT EDUCATION AND A SURVEY OF ITS DEVELOPMENT
IN VICTORIA

D. H. RANKIN

The aim was to give the reader an idea of what Adult Education really means and what it will accomplish, to trace its development in different countries, and to grasp its basic principles in such a way as might be helpful in suggesting further development. A special study was made of the contribution Victoria has made to the general scheme of Adult Education.

Method

The writer began with an examination of the history of Adult Education in England and the United States. Then followed a study of what had been already done in Victoria. This involved an examination of the University Extension Movement, the Libraries, public educational utilities such as Technical Schools and Correspondence Schools, and even Wireless and Films. Visits were made to Postal and Railway institutions, the Y.M.C.A., the Y.W.C.A., and the Ford Motor Factory.

Conclusions

1. In Victoria a great amount of valuable work has already been done.
2. Much yet remains to be done. The University Extension Movement needs vitalizing. In the

- W.E.A. there should be more enterprise, more initiative and more forceful direction.
3. More financial assistance from the State is needed to develop the library movement.
 4. While private enterprise has been valuable and helpful in its contribution, there are yet untold and untouched possibilities in this field.
 5. The agencies of Adult Education such as fellowships, dramatic associations, recitals, etc., are all valuable in that they very frequently develop an interest that leads to something more important.
 6. The craftsman of the past always had fuel for firing his imagination, but the mechanized work of to-day renders this impossible; hence the need for further education as an exercise and as a tonic.
 7. The Open Forum, the Radio and the Film as channels of education have been imperfectly understood and inadequately used in Victoria.
 8. Finally, a wider development of Adult Education would eventually result in an increased amount of money being made available for the further educational work of the State. The need for a liberal educational fiscal policy is more readily recognized by an educated population.
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VARIABLE ELEMENTS IN SCHOOL EXAMINATIONS

R. G. ROWLANDS

The main purpose of this investigation is to indicate the possibility of a more positive approach to the examination problem along the lines of a purely mathematical analysis. The procedure is to estimate the probability that a judgment (based upon an examination result) will be upheld. In this way we may hope to gain not only an accurate idea of the present limitations of our judgments, but also suggestions for possible lines of future development.

We are concerned with two types of judgment. Firstly, the judgment of competitive ordering—that A is better than B, and B better than C, and so on. Secondly, the selective judgment—that the pupils in this group are better than the pupils in that group. And both these judgments attach themselves to persisting individuals. They imply, therefore, that the examination result is a measure which possesses a value-for-the-future.

The question of the relationship between success in examinations and success in the activities of real life is one which it is very difficult to investigate mathematically. No doubt it is also unreasonable to expect any very marked correlation between success in two such essentially different types of activity.

On the other hand, if we predict success in an examination on the basis of a candidate's success in a previous examination, we feel that the inference is perfectly natural and normal.

But how far such a prediction can be in error is well illustrated by the results of Professor Valentine's enquiry in *The Reliability of Examinations*.¹

The variation revealed in this enquiry is attributed to the activity of about seven main factors or influences. Moreover, when the incidence of four of these factors has been eliminated or reduced (by correlating results of successive years) correlations of about .8 are obtained (indicating a vast improvement).

This naturally leads us to enquire what would be the effect if the incidence of all the factors mentioned was either eliminated or reduced to the barest minimum.

Taking a selection of results which conformed as nearly as possible to the requirement, and which ranged from Sub-Intermediate to Leaving classes, the most typical correlation found was about .7² (i.e., rather lower than Valentine's year-to-year correlation of aggregate marks).

1. University of London Press Ltd., 1932 Chapters 4, 5, and 6, especially page 59.

2. Average .65.

Now if a teacher is to set it down that a pupil X is better than another pupil Y (say) he should be able to do so with a reasonable expectation that his judgment will not be confounded at the very next examination. After a detailed enquiry into the circumstances under which such a 'reasonable expectation' is likely to be fulfilled, we arrive at the general conclusion that 'if we were content to mark our range in step-intervals of 20 we could make decisions as to the relative merit of pupils, which would stand a 50-50 chance of not having to be reversed within six months.'

Such a scheme would prevent us from making any distinction at all among about 40% of the candidates.

On the other hand, if there is a margin of 40 marks (in the case of successive terms) or of 54 marks (in the case of a first to third term prophecy) we have about a 20 to 1 chance that our decision will be upheld. This seems to indicate that a considerable amount of certainty can be attached to the practice of dividing candidates simply into the two categories of pass and fail.

Investigation shows that a much greater degree of reliability does, in fact, attach to the selective function of examinations than to their use in competitive ordering. At the same time there is enough uncertainty in the case of about one-third of the candidates to warrant the greatest caution in making any prediction of their performance at the next examination.³

Naturally, these results apply only to the groups which were the subject of the investigation. But, while they may not be typical, there is every reason to believe them representative of the best. Nevertheless, it is still possible to contend that although it is no doubt 'hard lines' for 'the rejected—the men hemmed in with the spears,' they are lines which have to be drawn somewhere.

On the other hand, it may be urged that a judgment based upon the results of a succession of examinations (together with any other relevant information) can have a

3. There is about one chance in three that our judgment will be reversed in three months.

greatly enhanced reliability. And this is something which requires investigation.

But even if our hopes of progress along these lines should prove unfounded, we can still find consolation, and perhaps even inspiration, in the words of Plato:

‘Do not then, O best of men! compel boys in their learning; but train them up, amusing themselves, that you may be better able to discern to what the genius of each naturally tends.’

THE EXTRA-SCHOOL ACTIVITIES OF CHILDREN IN THE COLAC DISTRICT

T. R. SCOTT

The object of this investigation was to determine the nature and extent of the extra-school activities of all children in and above Grade VI in the State Elementary and High Schools of the Colac district.

Method

Questionnaires were sent out to all these schools and 474 answers were received. These were divided into four groups, each of which was subdivided according to sex:

- (a) Town (Colac) Elementary Schools (142 answers).
- (b) Country Elementary Schools (145 answers).
- (c) Colac High School—town pupils (141 answers).
- .. (d) Colac High School—country pupils (46 answers).

The questionnaire dealt with five main topics:

1. Mode of travel to school, and time taken.
2. Time spent on homework, and the number of people in the room while it is being done.
3. Extent to which children go out at night, and where they go.
4. Types of hobbies, and the time spent on these per day.
5. Nature and amount of work done at different periods of the day.

The answers in connection with each topic were treated statistically, and numerous graphs were drawn to illustrate the results.

The average age of the children concerned was 12 years and 11 months. The answers provide a good index of the conditions existing in a rural area of more than 150 square miles.

The average child travels to school on foot or by bicycle in 18 minutes. Homework occupies 22 minutes per night for Elementary School pupils and 84 minutes for High School pupils, while there are usually two or three people in the room while it is being done.

Town children go out at least one night per week, generally to the cinema, but country children go out much less.

Girls spend more time than boys, and town children more time than country children, on their hobbies, the average time spent per day being 54 minutes. Reading, handwork and sport are the three most popular hobbies with boys, while reading and needlework predominate among girls. Other hobbies, in order of popularity, are collecting, music, gardening, school work (sic), art work, care of animals.

The average child in the district does 77 minutes of work at home per day, divided between housework, milking, and various other tasks. High School pupils spend much less time on work (excluding homework) than do Elementary School pupils. Only 5% of children have no regular work to do each day. The average town child does one hour's work per day, as compared with an average of 100 minutes for country children, who in many cases, girls as well as boys, spend over two hours per day at milking.

STUDIES AND INVESTIGATIONS

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QUESTIONNAIRE

(To be filled in by pupils in Grades 6, 7 and 8)

Name (in full)

Date of birth

Address

School

Grade

1. At what time do you get up each day?
2. What work or duties do you have to perform before leaving for school each morning?
3. About how long does it take you to do these duties?
4. At what time do you usually have breakfast?
5. At what time do you usually leave for school?
6. Do you travel to school on foot, by bus, by bicycle or on horseback?
7. How long does it take you to get to school?
8. At what time do you get home from school?
9. What work or duties do you have to perform *before* your evening meal?
10. About how long do these duties generally take you?
11. At what time do you usually have your evening meal?
12. What work or duties do you have to perform *after* your evening meal?
13. About how long do these duties generally take you?
14. Do you do your homework before or after your evening meal?
15. How long does your homework generally take you?
16. How many other people are there in the room with you while you are doing homework?
17. Write down the nights on which you go out regularly, and say where you go
18. What are the things you like doing especially, such as your hobbies?
19. How much time do you spend on these things each day?

**BIOLOGICAL SCIENCE LABORATORIES: THEIR PLANNING,
FITTINGS AND EQUIPMENT****W. J. WEBB***Method and Conclusions*

Laboratories for teaching biological sciences, including Botany and Zoology, may consist of a single room with fittings and equipment for theory, demonstrations and practical work. Or there may be class, laboratory, preparation, storage, museum and herbarium rooms. The curriculum, size of classes and age of pupils will influence a decision on a scheme. In designing the rooms the main factors requiring consideration are lighting, size, shape, ventilation and heating. These points have been investigated and are discussed in detail. A series of plans of existing and proposed laboratories has also been drawn.

Details are given of equipment, including aids for teaching, such as microscopes, charts, projectors, dissecting apparatus, etc. In fact an attempt has been made to omit no useful equipment, and this section of the investigation should be of particular value to teachers.

The information has been obtained by the examination of existing laboratories in Victorian Secondary Schools, Agricultural Colleges in New South Wales, South Australia and Victoria, and in Universities and Research Institutions in Sydney, Adelaide and Melbourne, while reference has been made to English and American literature on the subject.

**THE EDUCATION OF GIRLS IN FIJI, WITH SPECIAL
REFERENCE TO THE EDUCATION OF INDIAN GIRLS****ESTHER M. WILLIAMS**

This study aims at giving a clear and unbiased picture of present educational institutions in Fiji. The past history of the islands serves as background, and the geographical situation of this picturesque group as frame. In the foreground

stands the Indian girl, with her wealth of latent powers, heir to the wealth of six thousand years of civilization. What of her future? The answer lies in the type of education that is made available.

Method

The most recent publications of the Government of Fiji, especially those of the Education Department, were found useful in the preparation of this investigation. The reports of Educational Commissions and of visiting educationists have provided valuable information. Teachers of various races and faiths have supplied data and personal opinions based upon their teaching experience. The author had spent several years in educational work in Fiji, and had first-hand acquaintance with the needs of schoolgirls of several races. Boarding-school and orphanage conditions made close contact with Indian girls possible, while the homes of half-castes, Fijians and Indians were visited freely. The weekly bazaar, the 'labour lines,' hospitals and leprosarium were likewise visited. Holidays were spent at a mountain resort, in inland villages and on outlying islands, or in accompanying Child Welfare workers on their patrol of villages. Teachers' Conferences and Study Camps were attended, and provided opportunity for learning the opinions of educated Indians.

Conclusions

Three great organizations control Fiji between them—the Colonial Sugar Refining Company, the Government, and Christian Missions. A fourth—gold-mining companies—may shortly demand recognition. All have a more or less disintegrating effect on native culture, creating some educational problems while solving others. The Methodist and Roman Catholic Missions pioneered educational work in Fiji. Through them the barbarous practices of heathendom were stamped out, and the natives made literate and, at least nominally, Christian. The influx of East Indians to work

as indentured labourers on sugar plantations proved a setback to Mission education; the depression conditions that followed the fall in copra prices intensified it. The Government began to assume control of education. Yearly it assumes wider responsibility, though its activities lag far behind the educational needs of the population. Only one Indian child in three has any opportunity of schooling. Teachers are few, and schools far apart and poorly equipped.

More girls' schools teaching the vernacular, boarding-schools under efficient European control, and trained Indian women-teachers are sorely needed. Indian inspectors, supervisors and social workers are required. The status of women must be raised, and child marriage especially stopped. Revised curricula which serve to relate the school to the community and to weld the heterogeneous elements of the population into a unified whole need devising. Delay or failure in educating Indian girls will lead to disaster, for their enlightenment and emancipation wait upon education.

THE WORK OF THE ROMAN CATHOLIC BOYS' BOARDING SCHOOLS IN AUSTRALIA

J. WILLIS (BROTHER DAMIAN)

The aim was to give some insight into the work of the Catholic Boys' Boarding Schools in Australia.

Method

The chief method of gathering the required information was the issue of a questionnaire, early in the year, to the schools concerned. Further information of a statistical nature was drawn from the *Australian Catholic Directory*, the *Australian Educational Directory and Gazette*, and the *Jesuit Directory*.

Conclusions

Some of the chief conclusions drawn from the investigation were that: Adequate provision is being made for spiritual

instruction and practice. Sports are well organized and special attention is given to health. A high standard of efficiency is maintained in the academic side of the schools' activities. A well-organized system of training is provided for the teachers, together with suitable refresher courses. Extra-curricular subjects and facilities for hobbies are provided, but the range is as yet rather limited. Few schools have suitable libraries, and these, as a rule, are not used to their fullest advantage. Efforts are being made to prepare the boy to make a worthy use of leisure and to develop the aesthetic side of his education, but much still remains to be done. Vocational guidance is provided generally, but is not systematic except in a few schools. The subjects and requirements of the Leaving Certificate examination do not offer a suitable preparation for the life work of a large proportion of the boys.

**INVESTIGATIONS SUBMITTED
IN 1938**

SOME OBSERVATIONS ON SECONDARY EDUCATION RESULTING FROM AN INVESTIGATION OF THE AGES, EDUCATIONAL STANDARDS AND DESTINATIONS OF EXIT-PUPILS OF A RURAL HIGH SCHOOL (KYNETON)

R. W. ANDREWS

Method

THE matter of the investigation is set out under the following headings:

- (a) Victorian High Schools—historical background.
- (b) Present-day questioning of the objectives of secondary education.
- (c) Kyneton High School and its environment.
- (d) Kyneton High School as a district secondary school.
- (e) The curriculum.
- (f) Data relating to exit-pupils.
- (g) Suggestions for reorganization of secondary education in a rural district.

Conclusions

1. The course of study at Kyneton High School is dominated by the requirements for University certificates. This is an obstacle to any attempt to meet the real needs of the majority of the pupils, only 15% of whom over a period of nine years have taken up positions requiring the possession of such certificates.
2. There is an urgent need for a reorganization of the course of study. There should be more training in 'practical' subjects, and education should be more closely related to the pupil's world. A three years' course, complete in itself, should be provided to meet, more adequately, the needs of the pupils who leave at about 15 years of age.

**A PRELIMINARY INVESTIGATION OF ADOLESCENT RELIGIOUS
PSYCHOLOGY****H. W. BAKER**

The writer's aim was to sample the religious ideas of adolescents, taking an age-range of 12-18 years, with a view to constructing a general map.

Method

Of the three methods available—the personal interview, study of written self-revelations, and the questionnaire—the second, that of self-revelation, is chosen. Following the procedure of Kupky at Leipzig in a similar investigation, an indicator-topic was given on which brief scripts were written by the subjects. The topic chosen was 'What arouses my reverence.' Only pupils from secondary schools were approached. An attempt was made at first to preserve a balance between State and Church schools, but for various reasons this was abandoned except with boys of 14 and 15.

Script-replies are classified under thirteen heads of Occasions of Reverence, e.g., God, Christ, Religious Observances, Human Achievement, Death, etc., and these are subdivided by years of age. Data for the higher age-group was so slight that no claim can be made that it furnishes reliable evidence. The findings are further weakened by the fact that many subjects had an imperfect grasp of the meaning of the word 'reverence.'

An interpretative commentary is given on the replies under each head, and a number of scripts are quoted in full. A comparison is made with Kupky's results.

Conclusions

The investigation reveals that:

1. Australian adolescents are highly religious.
2. Their religion is not distinctively Christian.
3. Boys appear to be more religious than girls.
4. Fear plays little part in adolescent religion.

5. In religious instruction the personality of Christ must be more effectively presented.
 6. Attempts to educate the general conscience through sacred ceremonial seem to fail with boys and have only temporary success with girls.
 7. The churches must adapt religious training to give expression to religious impulses in the adolescent of to-day.
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THE EDUCATION OF THE HALF-CASTE ABORIGINE

WINIFRED M. BURRAGE

The objective was a study of the education, past, present and future, of the half-caste aborigines of Australia, with special reference to those of New South Wales.

Method

Information was gathered from a number of publications, official and unofficial, and covers ethnological data, population figures, systems of administration for aboriginal affairs in the Australian States, and a review of the education given by whites to aborigines. The situation in New South Wales has been surveyed in greater detail, and an account of the Aboriginal Station at Moonahcullah is supplied from the author's personal knowledge. The second half of the investigation deals with the educational provision for aborigines in New South Wales, and is illustrated by samples of the work done in the schools at Moonahcullah and Cummeragunja. The whole work is illustrated by numerous photographs.

Conclusions

While noting the improvement that has been made in the education of the aborigine the author finds serious defects in the present system and in the concluding section offers suggestions for its improvement.

THE INTELLIGENCE OF UNDER-PRIVILEGED CHILDREN AND THE STANDARD THEY REACH IN ENGLISH AND ARITHMETIC

JOAN G. COURTNEY-PRATT

The idea of the investigation arose from the application of the Goodenough drawing test to about 180 children from schools in very varying localities: a Tasmanian one-teacher rural school, a free kindergarten in an industrial suburb, and two private schools (the last three in Melbourne). The I.Q.'s obtained from this test were inaccurate, but the averages were significant—well under normal for the rural school, slightly over normal for the free kindergarten, and well over normal for the private schools. There was, of course, nothing novel in the conclusion that the intelligence quotient tends to be high amongst children of professional people and low amongst children of industrial and agricultural labourers.

The investigator was aware that in the work next undertaken no new ground was being broken. The aim was to establish the difference in average I.Q. between two groups with widely differing social backgrounds and to see how this difference affects their work in English and Arithmetic.

Method

Tests were applied to a group of forty carefully selected under-privileged children in Lee Street State School—21 boys and 19 girls with unfavourable home conditions. As a control group 21 boys were selected from Wesley College and 19 girls from M.L.C. The tests used were the Otis Self-administering Test (Intermediate Examination, Form A), the A.C.E.R. Arithmetic Test (Mechanical Arithmetic, Form A), and the A.C.E.R. Silent Reading Test (Word Knowledge, Form A).

Conclusions

1. The experimental group was much below the control group in the quality measured by intelligence tests, though not below the average for Australia.

2. The control group was superior by a wide margin in word knowledge and by a small margin in arithmetic. When, however, the intelligence factor was equated the experimental group was superior in arithmetic, while the control group retained their superiority in word knowledge.
 3. There was very little to choose between the achievement quotients of the two groups. That is to say, though heredity and environment affect their score in the Otis Test, the Lee Street children are not being as greatly handicapped in their school work as we might suppose.
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EDUCATION IN NEW GUINEA

NELLIE O. FRANCIS

The writer aimed at a survey of the educational provision in the Mandated Territory of New Guinea from 1921 to 1937, embracing the education of natives, Europeans and Asiatics.

Method

The investigation is based on a study of official reports and publications of the Commonwealth Parliament, the Mandates Commission, and the Department of Home and Territories, together with other references of a more general character. Sectional headings are: Historical; Ainsworth's Report; The Curriculum of the Elementary School; the Technical School; Present Position of Elementary and Technical Education; the Language Difficulty; Cost of Native Education; Education of European Children; Native Agricultural Education; Training of Medical Tul-luls; Part Played by the Missions in Native Education.

Conclusions

Conclusions are offered as to the need for defining the

objective in native education and the considerations which should influence this definition.

**A REPORT ON A YEAR'S EXCHANGE DUTY IN A LONDON
BOROUGH WORKING UNDER THE HADOW REORGANIZATION
SCHEME**

P. L. J. GALVIN

This account of educational work in the borough of Leyton, a 'dormitory' suburb in the north-east of London, is based on information gathered by the writer during a year of exchange duty in 1936-1937. During this time he was afforded opportunities to make a study of the primary education within this district and in East End schools under the L.C.C., of secondary education in Leyton and adjoining districts, of 'small rural' schools in Essex, and of varied provision for physical education in the London area.

Sectional headings are: Administration; Organization; Buildings and Equipment; Finance; Staffing—recruiting, salaries, promotion; Curricula, including physical education, art, craftwork, sport; School Medical Service; School Camps; Child Guidance; School Journeys. Under the heading 'Problems Facing English Education' the investigation deals with the position of the senior school under the Hadow reorganization, the exemption clauses affecting the raising of the school leaving age, the examination problem, and the problem of the village school.

Conclusions

1. There is increased public interest under a system of local responsibility.
2. England has an advantage over Victoria in expenditure on education.
3. Teachers in Victorian schools compare favourably with English teachers.

THE CORRELATION BETWEEN INTELLIGENCE AND HOME CONDITIONS

H. G. HENRY

The object was to determine whether there was any definite relationship between the intelligence and the home conditions of the children in the sixth grades of the more important primary schools of the Mildura district.

Method

1. Intelligence tests were given to children in the sixth grades of six important primary schools of the district.
2. The home conditions of each child were investigated, and the information so obtained was sorted to form a 'home conditions' continuum on a five-point scale.
3. The 'home conditions' groups were then compared with respect to intelligence.
4. The cases were arranged in four groups of nearly equal size, the basis of classification being intelligence.
5. The 'intelligence' groups were then compared with respect to home conditions.
6. Individual investigations were made into thirteen cases which seemed to show a marked departure from the relationship indicated by the investigation as a whole.

Conclusion

A positive correlation between intelligence and home conditions does exist. A high intelligence mean goes with good home conditions and a low intelligence mean with poor home conditions.

THE VOCATIONAL ASPECTS OF A SECONDARY SCHOOL IN A RURAL COMMUNITY

J. J. MARTINDALE

The special purpose was to discover the relation between the school histories of a group of ex-students of the Shepparton High School (a typical Victorian multi-purpose

school) and the occupations in which they are now engaged; thus to determine the extent to which this school is meeting the requirements of the district it is designed to serve.

Method

A survey is first made of the Shepparton district, its population, its industries, its avenues of employment. The history of the Shepparton High School is traced. To show that the school possesses the machinery to cater for the requirements of each pupil, whatever his future work, the organization and curriculum of the school are described. An analysis is made of the scholastic achievements of the school population at enrolment over the period 1931-1938 and of the age and educational standard of exit-students. Graphs and tables to show the distribution of pupils between the three courses, academic, commercial and industrial, are supplied.

The writer, working on authentic histories of 200 ex-students, classifies occupations and summarizes present occupational trends for boys and girls. Tables show the careers of pupils leaving from different forms. To present a summarized picture of the relation between types of education and subsequent employment the 'form' statistics are collected in a single table.

Conclusions

1. The multi-purpose type of High School is well fitted to meet the varied requirements of children from all walks of life.
2. The investigation provides evidence in favour of lengthening the average child's school life by at least a year.
3. Apart from the sons of farmers and orchardists a low order of correlation is revealed between the occupations of fathers and sons.
4. The curriculum should be widened for pupils on the academic side to include more training in craft-work for boys and in domestic subjects for girls.

5. The appointment of vocational guidance experts to multi-purpose schools would be a great advantage.
 6. The problem of special vocational training can only be solved by the extension of the school's night-class activities.
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DIAGNOSTIC AND REMEDIAL WORK IN ARITHMETIC

H. A. RUSSELL

The object of the investigation may be gathered from the title. The inquiry shows the value to be derived from a careful analysis of the errors made in Arithmetic and from special coaching designed to remove individual difficulties. It is suggested that the general introduction of such methods in the schools would go far to remove the common complaints of weakness in the subject of Arithmetic.

LATIN IN VICTORIAN HIGH SCHOOLS

W. B. RUSSELL

The object was to discover whether Latin was holding its place in the curricula of schools in the leading countries of the world, to consider the case for its retention in Victorian High Schools, and to discuss any desirable modifications of current objectives and methods.

Method

- I. The writer corresponded with Directors of Education and Classical Associations in other States and countries. Britain and U.S.A. were most helpful. Figures and opinions relating to the rise and decline of classical studies and to objectives in different countries were obtained and compared.
- II. The findings of the American Classical Association (1924) relating to objectives and methods and the attitude of the French Education Department and the

English Classical Association were considered, together with the report of the Classical Sub-Committee of the A.C.E.R. (1937), the Melbourne University prescriptions in Latin, and statements by the Method Lecturer in Classics (Melbourne University) and the Chief Inspector of Victorian Secondary Schools. Here again the comparative method was followed.

III. Questions arising out of II were investigated.

- (a) Derivational studies. This question was investigated through the vocabularies of current textbooks and derivation books. Latin derivatives were obtained from the daily press and textbooks in English.
- (b) The popularity of Latin was tested by a questionnaire covering the ten most common subjects in forms F to C.
- (c) Abolition of Grammar. The grammatical endings of Latin were drawn up in vocabulary form and learnt as vocabulary. A sufficient number of pupils who would volunteer to learn enough general vocabulary for a satisfactory test could not be obtained.
- (d) The correlation between ability in Latin and general ability was investigated by testing the intelligence of forms F to C and correlating the scores with their Latin marks and average in all subjects.

Conclusions

- 1. The amount of Latin taught is decreasing, except in England and Victoria.
- 2. The theory of transfer of training is under a cloud, and the immediate objective of the two-years' course for forms F and E should be reading and derivation.
- 3. The most important modern developments are:
 - (i) The reading method.
 - (ii) The Latin word-order method of reading.

- (iii) The provision of attractive textbooks with abundant reading matter which can be mastered and with illustrations of historical-cultural value.
4. Latin is still disliked by most pupils.
 5. Special ability in Latin has high correlation with general ability.
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THE FINK COMMISSION ON TECHNICAL EDUCATION AND ITS EFFECT ON VICTORIAN EDUCATION

D. V. SATCHELL

The objective was to examine the antecedents of the Fink Commission, the light thrown on Victorian education by the reports of its proceedings, and the effects of its findings.

Method

The method of the investigation was an examination of Parliamentary Papers and Debates, contemporary newspaper comment, the Minutes of Evidence taken before the Commission, and the Reports of the Commission itself. Chapter headings are:

Events leading to the appointment of the Commission.

The Fink Commission and the Education Department:

(a) Administration, (b) Inspectors, (c) Teachers.

The Commission and the Curriculum.

The Commission and Technical Education.

The Commission and Agricultural Education.

The Commission and Commercial Education.

The Commission and the University.

Conclusions

These stress the influence of the Fink Commission on Victorian education both in the years immediately following and in more recent years. A list is given of fourteen reforms in education which are foreshadowed in the recommendations of the Commission.

THE POSITION OF TUBOU COLLEGE IN THE EDUCATIONAL SYSTEM OF TONGA**W. SHEPHERD**

The aim was to give an account of the history and work of Tubou College, Nuku'alofa, and to determine its position in the educational system of Tonga.

Method

The Tongan background is first sketched. The writer presents necessary geographical and historical facts, and gives statistics for population, products of the islands, and adherents of the various missions.

The somewhat stormy history of Tubou College from its foundation in 1866 and its relations with Church and Government are carefully traced. The writer is critical of the academic type of education that has been given for so long in Tonga. A study of the probable destiny of college students reveals that there is great need for remodelling the curriculum. There is also need, if wastage and foolish competition are to be avoided, for better organization of the whole educational system (of which Tubou is a part) along the lines advocated by the Commission of 1931. A tyrannical examination system bears down on schools in general and Tubou College in particular. This tyranny should be removed.

Selecting as desirable educational objectives Health, Vocational Preparation, Citizenship, Character Training, Fruitful Leisure, and Scholarship, the writer uses them as a standard against which to measure the achievements of Tubou College. Points of weakness are noted and lines of reform suggested.

Conclusion

The interests of Tonga will best be served by central government control of education, but Tubou College, with its fine tradition, should continue as a separate institution for the training of teachers.

LIBRARIES IN BENDIGO

R. H. SING

The aim was to investigate the nature of existing facilities in the public, commercial, and school libraries of Bendigo city and suburbs, with special reference to the provision made for juvenile readers, in order to discover the causes of the severe criticism which has been directed against the library equipment of this city in the past; and to ascertain the extent to which existing foundations may be utilized in the future, especially with regard to the establishment of a Children's Library.

Method

By means of questionnaire and personal inspection, detailed information (such as number of books in various categories, index systems, number of juvenile and adult subscribers, finance, furniture, general organization and administration) was obtained from libraries such as the following: School of Mines Public Library; Sandhurst Free Library; Railways Institute Library; the two leading commercial libraries; suburban Mechanics' Institute libraries; libraries in primary and secondary schools. An inquiry concerning the private libraries of pupils was conducted in a secondary school. For purposes of comparison, questionnaires were forwarded to Lincoln City, England, and Sacramento City, U.S.A., detailed replies being received in both cases. The history of a local movement for the establishment of a Children's Library was followed and reported in detail. The information thus gleaned was carefully analysed, tables of statistics being compiled where possible. Conclusions and suggestions for library policy in the future were then stated. Miscellaneous information concerning the library movement in general is given in an Appendix.

Conclusions

- (a) The existing facilities in the public, commercial, and school libraries of Bendigo are used by only a small

section of the community, and are at present inadequate for the purposes of general culture and modern education.

- (b) The municipality should take over the School of Mines Library and convert it into a modern progressive public library.
 - (c) The municipality should also make a permanent grant to the proposed Children's Library and provide a suitable site.
 - (d) The Children's Library should form the nucleus of a comprehensive library scheme extending to the suburbs and outlying districts.
 - (e) There should be full co-operation and collaboration between school libraries and the Children's Library.
 - (f) In all libraries more emphasis should be placed on the importance of librarians and librarianship.
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THE SCOPE, ADMINISTRATION AND PROGRESS OF THE
MOVEMENT FOR THE IMPROVEMENT OF NATIONAL
PHYSIQUE IN GREAT BRITAIN, WITH PARTICULAR REFER-
ENCE TO SECONDARY SCHOOLS, AND ITS APPLICABILITY
TO VICTORIA

V. J. D. TIPPET

The object was to investigate the reasons for the introduction of the British Government's scheme (1937) for national fitness, to call attention to the essential features in its administration, and to determine what Victoria had in common with Great Britain and whether a similar scheme should not be introduced here.

Method

Part I. Four reasons are advanced for the passing of the 1937 Act in Great Britain: the demand from the schools, the influence of developments in other countries, the influence of medical reports drawing attention to the poor

general state of physique, and changes in the economic and social structure. A review is given of reports and official circulars in England from which the British Act was framed. The lines on which physical education is being developed in Denmark, Sweden and Germany are sketched.

Part II. The writer outlines the steps leading to the passage of the Bill. Diagrams are provided to illustrate its operation in practice and the interaction of educational and voluntary organizations. Evidence is produced of the success already achieved; special reference is made to advances in the London area.

Part III. An analysis is made of the situation in Victorian primary and secondary schools. The organization of post-school physical recreation in Victoria is described and suggestions are made for strengthening it. Credit is given to two voluntary organizations, the Y.M.C.A. and the Workers' Sports Federation.

Conclusions

The British Act is an attempt to solve the problem of how to encourage that section of the community most in need of physical education to help itself. It is concerned with developing public enthusiasm and fostering action through existing machinery. There is room for a similar movement in Victoria. With this in mind the writer makes the following observations and suggestions:

1. The chief need is to shatter complacency.
2. There is a regrettable lack of co-operation between organizations concerned with physical well-being.
3. The Government should be urged:
 - (a) to appoint a Director of Physical Education whose first duty would be to co-ordinate the activities of Education, Health, and Labour Departments;
 - (b) to set up an Advisory Council on which voluntary bodies would be well represented;

- (c) to establish a central physical training institution, preferably at the University;
 - (d) to ask help from municipal councils in the interests of a fitness movement.
4. More attention should be paid in schools to those recreative activities which have 'carry-over' value.
 5. Too little is done in school and beyond to cater for the needs of boys and girls who do not excel at sport.
 6. There is a lack of willingness to provide more liberal facilities—grounds, tracks, showers, playground supervision, etc. This must be overcome.
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THE RURAL SCHOOLS OF QUEENSLAND

W. WOOD

The aim was to describe the rural schools of Queensland and suggest ways in which they might be further adapted to meet the special needs of rural communities.

Method

Section I. The writer shows how the Queensland education authorities have attempted to meet the needs of adolescents in cities and small towns by the establishment of Intermediate Schools. These correspond closely with the Modern Schools recommended in the Hadow Report and provide an enriched curriculum. The distribution of these schools is given, with some account of their working.

Section II. A 'rural school' in Queensland is a centrally situated primary school in which pupils, on reaching Grade VI, follow, in addition to the basic school subjects, a special course comprising Woodwork, Ironwork, Agricultural Science, etc. (for boys), and Housekeeping, Cookery, Dress-making, etc. (for girls). Pupils from the upper grades of surrounding schools attend special classes one day per week.

A description is given of the internal organization of these schools and of their achievements in adapting the curriculum

to special environments through Bee Clubs, Poultry Clubs, Forest Clubs, etc.

Conclusions

The rural schools of Queensland represent real progress toward the solution of the 12 to 15 years problem in country districts. But the State Scholarship Examination is an obstacle to their complete success since pupils from rural schools presenting for scholarships have to complete exactly the same course of study in academic subjects as those from other schools. Requirements in Mathematics, English, Geography and History should be reduced in order to remove the temptation to neglect or sacrifice manual and domestic subjects. The chief present need is thus a special syllabus adapted to the needs of the rural schools.

**INVESTIGATIONS SUBMITTED
IN 1939**

THE TRAINING OF THE APPRENTICE

R. BADSEN

THE writer traces the history and development of apprenticeship from the Middle Ages to the present day, and then proceeds to discuss the influence of the introduction of machinery and its effects on the nature of apprenticeship.

The importance of vocational guidance is emphasized. The training of the apprentice in the Technical School and in the workshop is discussed at some length; the importance of both aspects of his training is stressed. The writer stresses also the necessity for a highly efficient staff in the Technical School.

An account is given of a series of experiments conducted by the investigator to determine the effect of conscious recognition of defects or improvement in the use of tools.

A STUDY OF THE TEACHING OF GEOGRAPHY BASED ON INVESTIGATIONS MADE INTO THE WORK OF SOME VICTORIAN SECONDARY SCHOOLS AND THAT OF ESSENDON HIGH SCHOOL IN PARTICULAR

R. R. BELSHAW

The aim was, in general, to give an accurate survey of the teaching of Geography in typical Victorian secondary schools; in particular, to determine how far we have advanced from the old Geography learning—the ‘capes and bays’ method—and how far it is possible to follow modern methods of Geography teaching under existing conditions in Victoria.

Method

Much of the work has been based on the writer's own experience and attempts at improvement in his class procedures, especially at his present school.

To form a basis of comparison, a questionnaire was prepared after consultation with two well-qualified and experienced senior teachers, and copies were sent to various important secondary schools. These were selected as being typical examples of State High, Technical and Higher Elementary Schools, and private schools. Replies were received from sixty experienced teachers, whose information gave details of facilities for Geography teaching in thirty schools in different parts of the State, as well as personal opinions concerning aids and methods.

To gain some indication of student opinion, a questionnaire on teaching and examining was prepared and, with the help of friends in metropolitan schools, was given to over eight hundred students. It was thought that some representative indication of their opinions would form an interesting check on the judgements made by the teachers consulted.

The following aspects of Geography teaching were considered:

1. The New Curriculum—its results in elementary schools and the application of its principles to secondary work.
2. The Class 'A' system and the influence of external examinations and set textbooks.
3. The Geography room. Details of the room and its use at the writer's school. Details of an experimental unit of work to illustrate the possibilities of following new ideas under existing conditions and the need for a special room to carry out such ideas effectively.
4. Equipment for Geography teaching—film strip projectors, wireless, gramophone, reference library, textbooks, atlases, wall maps and charts.
5. Activity methods, excursions, and overseas correspondence.
6. Courses of study with special reference to correlation.

Details of schools, teachers' qualifications, questionnaires, samples of students' work, and an experimental correlated course are given in appendices.

Conclusions

1. Only a very small number of schools have proper accommodation, facilities, and equipment for the adequate treatment of Geography as an important social study; and, generally speaking, the practice of Geography work is far below the standard demanded by constructive educational principles.
 2. Apparently a large proportion of the teachers of Geography were insufficiently trained for the satisfactory conducting of Geography studies; and, therefore, some advanced course of instruction, preferably of University standard, is needed.
 3. Information and opinions given by teachers in various schools showed the possibilities of Geography, as an important branch of social studies, occupying a key position in any modern educational scheme when properly developed. Interested teachers in several schools are doing valuable experimental work to establish methods of increasing the contribution of their subject to the education of the child.
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THE TEACHING OF BIOLOGY AND NATURE STUDY IN VICTORIAN SCHOOLS

HILDA C. BUTLER

Very few Victorian schools teach Biology; almost all include Nature Study in the curriculum. The writer set out to discover, among other things, the reason for the difference in attitude shown to the two subjects.

The matter of the investigation is in eight sections:

1. General introduction and an indication of the scope of the investigation, as well as some reference to work done by others in this field.
2. An outline of the development of Nature Study and Biology in Victorian schools.

3. An account of the investigation carried out personally in a 'sample' of Victorian schools in August, 1939.
4. School Horticulture in some Australian States.
5. Agricultural education in the schools.
6. Children's Museums.
7. Some information collected from oversea countries.
8. Appendices of syllabuses, library lists, and references that may be useful to anyone else interested in the subject here discussed.

Method

The writer visited a number of schools, in only a few cases being expected by the Headmaster. The usual plan was to arrive at a town and get into touch with the school by telephone—or in some cases simply to arrive. Questions were asked on how Nature Study and allied subjects were taught, how Nature Study was correlated with the rest of the work, and what 'aids' were available, such as radio, film-projector, library, museum, school garden and plantation, Young Farmers' Clubs, etc.

Information on School Gardening was obtainable only from Victoria and New South Wales.

Throughout Australia the State Departments of Agriculture are playing a major part in the practical education of the man on the land. This was also found to be the case in every country from which information was collected.

Conclusions

1. The value of Biology as a cultural subject is not appreciated except by Headmistresses of Girls' Schools and a few others. Boys take the subject only when needing it in preparation for a medical course.
2. Sex instruction, as such, was given only in one school, and that a State High School.
3. On the whole Nature Study is not well taught.
4. Children's attitude towards Nature Study does not greatly vary. They are always interested.

5. There are three reasons for the teachers' insufficiency in the subject:
 - (a) Lack of interest.
 - (b) Lack of knowledge and training.
 - (c) Lack of teaching experience.
 6. The teaching of Geography seems to be a popular way of avoiding the teaching of Science.
 7. In some districts the interest in Nature Study passes from the school into the home and back again. In one district it was the home interests that were carried over into school life.
 8. In country districts, on the whole, pupils show that they are at least normally observant, but like most country children they are disinclined to comment on their observations. In many cases, too, the children are really unappreciative of familiar things rather than unobservant.
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METHODIST MISSION EDUCATION IN FIJI

A. C. CATO

The intention was to make a critical survey of Methodist Mission Education in Fiji from earliest times to the present day.

Method

Part I.—*From Earliest Times.*—Since many general descriptions of Fiji have already been given, the writer refrained from arranging a geographic or historical setting for his study and confined himself to educational questions.

The older, pre-school education of Fiji was examined and shown to have been imitative and well adapted to the native environment. There is need in these days for again relating the curriculum to life. The first missionaries showed initiative and vision. With their coming the foundations of the later educational structure were laid. Characteristics

of the early missionary education were the close association between church and school and the part played by the Bible.

In tracing the history of Fijian education from 1909 to the present time reference is naturally made to the Indian problem, and here and elsewhere the writer refers to the reports of various commissions, notably Dr. C. W. Mann's *Education in Fiji* (1934).

Part II.—*The Present Period.*—In this section are discussed the following present-day problems: the relation between Government and mission; the need for the development among the Fijians of leadership and initiative; the part played and to be played by English in Fijian development; co-education in Fiji; the special problem of Davinlevu; the education of Fijian girls; the Suva Methodist Boys' School.

Conclusions

1. A sound centralized educational system with the Church gradually retiring from the field will be more satisfactory.
2. Agriculture and handwork should be emphasized throughout the courses.
3. More teachers should be provided.
4. Full advantage should be taken by the Church of the opportunity to give education to Fijian and Indian girls.
5. As the Government more completely controls education the Church should endeavour more efficiently to undertake the work of religious instruction in Fijian schools.

EDUCATION IN THE ANTONINE AGE

W. F. CONNELL

This is an historical investigation into Roman education during the years 138-193 A.D., an age which the author describes as 'a period of significant transition.'

Method

It is based on a careful examination of contemporary writings and a study of secondary authorities, to all of which detailed references are supplied. Sectional headings are: General Introduction, The Education of an Aristocracy, Endowment of Education, The Effect of the Educational System.

Conclusions

The writer was led to conclude that 'the chief developments in the regular educational sphere—the increasing Latin content of the curriculum in the western provinces, and the considerable encroachment of the imperial government upon the higher studies in the system—reflected current needs and desires.' He notes especially the superficiality of the culture of the period and the failure of education to make any great impress on the lower classes. To these features of Roman education in this age he ascribes a heavy responsibility in preparing the state of mind for the favourable reception of the Oriental spiritual invasion.

THE CLASSIFICATION OF PUPILS IN OUR SCHOOLS TO-DAY

J. A. DOWER

The aim was to examine the present theory and practice of class-grouping in Melbourne schools, with particular reference to pupils in Grades VII and VIII.

Method

A questionnaire was forwarded to thirty schools and answered, either completely or incompletely, by twenty-four of them. It asked Head-teachers to supply information with regard to their methods of promoting and classifying pupils, their use of Intelligence Tests and Tests of Scholastic Attainment, and the ages of children in each grade of their schools. The replies were analysed to reveal practices prevailing in metropolitan schools at the present time.

A special study of 100 pupils in Grades VII and VIII

was made. Scores on Arithmetic and Reading Tests were converted into 'Brightness' ratings, and I.Q.'s were determined by means of an Intelligence Test. Much heterogeneity was revealed, and individual cases of incorrect classification were discussed, suggestions being made for adjusting the standard of the work done to the proved capability of the child to deal with it.

The attempts being made in Victoria and New South Wales to cater for the bright child and the dull child are discussed, emphasis being placed on the enrichment of the curriculum for the gifted child and the use of I.Q.'s to separate the retarded from the very dull children.

This is followed by a discussion of schemes in operation at a metropolitan school to enable individual differences in ability to be catered for in Arithmetic and Reading. Mention is also made of a similar scheme in a provincial centre, and of the problem of refugee children and their classification.

A discussion then follows of schemes which have been adopted to secure flexibility of promotion—the Dalton Plan, the Winnetka Plan, the Multiple Track System in Oakland, U.S.A., the Mannheim Scheme, the Howard Plan in operation at a Girls' Public School in Melbourne, the Boys' Modern School Plan in operation in a provincial centre in Victoria, and the Intermediate Schools of New Zealand. In all these schemes some attempt is made to allow the child to work at a pace determined not by his fellows but by his own level of ability.

Conclusions

The results obtained showed the variation in abilities amongst children classified in the same grade. A survey of present facilities for dealing with such variations revealed them as insufficient, although significant experiments have pointed to effective measures which could be adopted. There is need for a more liberal Government policy to care for the bright and the dull, although it is recognized that this means smaller classes, more liberal staffing, more suitable buildings, more equipment, and more freedom for teachers.

**THE ORGANIZATION OF A MEDIUM-SIZE SCHOOL IN A
SPARSELY POPULATED AREA OF NEW SOUTH WALES****H. D. EVANS**

The object was to compare the relative merits of the small rural school and a school of the consolidated type, with special reference to the needs of the district of which Bombala is the centre.

Method

The system of education by means of many small rural schools as it now operates in the Bombala district is reviewed. Advantages and disadvantages of the system from the point of view of both teacher and pupil are studied.

The one-teacher school and the consolidated school are compared with respect to site, buildings, equipment, curriculum, staffing, grading of pupils, social activities, the teacher's part, the value of the central school to the community, and administration.

Conclusions

The consolidated school is to be preferred to a group of small rural schools: it is superior in that, unlike them, it can offer to pupils a many-sided curriculum and it exercises a greater influence in developing civic responsibility and promoting the welfare of the community.

**BREAKING DOWN THE BARRIERS IN THE PRIMARY SCHOOL
CURRICULUM****G. H. HALLETT**

This investigation is based on an experiment carried out by the writer to test the efficacy of an integrated course in Grade VI of the elementary school. The school in which

this work was carried out is situated in Pender's Grove, Thornbury, Victoria; the experiment commenced two years ago, and is still in progress.

Method

In order that the pupils might not suffer from their participation in this new work, the ordinary teaching was carried out in the morning, while the afternoons throughout the whole year were given to work on the integrated course. It is interesting to note the modifications that had to be made as the experiment proceeded. The topic chosen at the beginning was 'The British Empire,' but after working for some time in preparation for this it was realized that the scope of the topic was too vast to permit of exactness, and it was decided to substitute a single topic from the course, namely, 'India.' The plan of the experiment was that each member of the grade should complete forty-two assignments and after each assignment give a lecturette to the remainder of the class before proceeding to the next. In this manner the pupils would cover the total field of work and provide useful class recapitulation as the experiment proceeded. In the end, however, it was realized that a grade of forty-two was too large to permit the scheme to function with reasonable efficiency. All pupils were not able to obtain the same value from the study of the material. Some pupils proved weak in carrying out their assignments and others showed inability or lack of training, being unable to profit from silent reading. In consequence, the investigation continued in a revised form, and twelve pupils who showed that they were likely to profit most from the original plan proceeded with it. The remainder of the grade continued with the subject-matter, but not as individuals, and with frequent oral lessons given by the teacher.

The investigation concludes with a list of the assignments which were given to the class, examples of integration showing how other subjects were worked into the scheme, and some specimens of original work carried out by the class.

Conclusions

1. The method of instruction showed that children need to be trained to read and investigate, but when this training was provided there was a distinct increase in the effectiveness of the work done by individuals compared with the work done under ordinary class teaching.
2. The use of the integrated course provides definite training in thinking and initiative.
3. The emphasis on activity aroused much enthusiasm on the part of the children who participated.
4. The teacher learnt a great deal about the children, for attention was focused not upon the subject-matter so much as upon the living children who were learning.

The writer concluded that this modification of the plan of integration is psychologically sound, is attuned to child interests, and is practicable in an ordinary school.

THE PLACE OF THE LIBRARY IN HIGH SCHOOL EDUCATION

F. T. J. HAMLEY

Method

The introductory section is concerned with the views of leading educationists on the function of the library in the modern school and with a review of library facilities in the Australian States.

Section B considers more fully three fundamental questions: What should be the aims of library service in a Victorian High School? Is there any demand by High School students and staffs for reference libraries? What training in library administration does the teacher-librarian need?

In the third section the equipment and organization of the library and the need for definite library instruction in schools are dealt with in the light of the author's own experience at University High School and his study of reports and publications from U.S.A. and England.

Sections D and E urge the need for making the library a cultural and social centre for the school and of linking it up with other libraries in the city or State.

Conclusion

In conclusion the author offers his opinion that the most urgent library problem in schools is to lead the authorities to the conception of a library as something indispensable to the life of a school and not merely a desirable but expensive asset.

THE TEACHING OF MATHEMATICS IN SECONDARY SCHOOLS

W. D. HARDY

The writer has attempted to make a philosophical analysis of his theme. He does not profess to add a new point of view, but has endeavoured rather to adduce arguments in favour of his own convictions in the matter.

The investigation is in the main a plea for the introduction of an integrated course in School Mathematics. The writer uses as a basis for his reasoning and suggestions (a) the syllabus of Mathematics as laid down in the *Handbook of Public Examinations* and (b) the admirable integration formulated by Mr. H. M. Campbell of the Melbourne Boys' High School.

STANDARD ATHLETIC COMPETITIONS IN VICTORIAN AND ENGLISH PUBLIC SCHOOLS

E. L. HARLEY

The aim was to give an account of those schemes of organized athletics in schools that have come to be known as Standard Athletic Competitions. The schemes considered are those operating in secondary schools in Victoria and England.

Method

The report of a special committee which investigated physical education in England (published in the *British Medical Journal*, April, 1936) is referred to. Two of the conclusions of the committee are quoted: that there is need for stimulating interest in education for physical fitness, and that Standard Athletic Competitions provide this stimulus.

Some attempt is made to sketch the origins of the Competitions in England and New Zealand, particularly the latter. Unfortunately, information obtained was very meagre.

A detailed account is then given of the conduct of Standard Competitions at Scotch College, Melbourne, during the years 1935-1938. The account is supported by tables of times, distances, etc., that have been adopted as standard at the various age-levels in the various events, and with samples of record-cards, result-sheets, etc., as currently used. There are also plans of grounds and snapshots taken while competitions were in progress.

The scheme at Scotch College, both in its organization and in its standards, is compared with those in operation at Wesley College and Geelong Grammar School. Differences are noted.

Conclusions

1. The introduction of Standard Competitions, both locally and abroad, has done much to awaken interest in athletics. The system gives a great number of boys healthy exercise and an incentive to strive. It discovers latent talent and gives life to House competitions.
2. Dangers inherent in the scheme (e.g., strain) can be avoided by consultation with school medical officers and by care in the arrangement and management of events.
3. Success depends (a) on the possession of suitable grounds to cater for both participants and spectators, and (b) on smooth organization involving (in the beginning at least) the ready co-operation of the staff.

**A HISTORY OF ADULT EDUCATION IN WESTERN AUSTRALIA,
WITH SUGGESTIONS FOR THE FUTURE**

R. M. HOARE

Method

This history covers the whole period of adult education in Western Australia, from the days when the Adelaide University Extension Board provided facilities up to 1939. Developments since 1913, when Dr. Albert Mansbridge visited the State and the W.E.A. movement was inaugurated, are dealt with in greater detail. Section 4 covers the era of the W.E.A. itself, with its collapse and attempted revivals, and Section 5 deals with the Adult Education Committee through five successive periods from 1929 to 1939, in which are included the directorships of Mr. F. Sinclair, Professor A. Fisher, Mr. C. R. Badger, and Mr. T. H. Roberts. The difficulties encountered in establishing the movement are considered, and the investigation emphasizes the part played by the Carnegie Corporation in helping financially the initiation of different aspects of adult educational work.

Conclusions

Suggestions for the future cover questions of finance, libraries, tutorial classes, decentralization, the establishment of a central office at Perth, the use of broadcasting, summer schools, the Box Scheme and the Readers' Counsellor Scheme for country districts, and the introduction of panel discussions.

**THE CONSOLIDATION OF SCHOOLS IN THE WOORINEN
DISTRICT**

G. E. HOLDEN

Method

This investigation is divided into three sections. The first sets out the problems of the one-teacher rural school in Victoria, discusses consolidation in the United States, gives

a brief account of the Tasmanian Area Schools, and then goes on to comment upon the fact that Victoria has tried no experiments at all in complete consolidation. An account is given of what happened in connection with the plan for Ouyen, and the story is disproved that consolidation was tried at Ouyen and failed.

The second section makes a survey of the educational facilities which exist at present in the Woorinen district, Woorinen being in the neighbourhood of Swan Hill.

The third section sets out a plan for the consolidation of small rural schools in this district. A map is provided showing not only the location of the schools of the proposed consolidation, but the residences of all the families in the district and the numbers of children in each family. Details of the scheme are worked out.

Conclusions

The conclusion arrived at by the writer is that this district would provide an admirable sphere for an experiment in consolidation. The reasons for this are as follows:

- a. The schools are close together.
- b. The roads are good and transport difficulties could be reduced to a minimum.
- c. The parents are all interested in the same activity, the growing of dried fruits.
- d. The cost of the scheme would be reasonable.
- e. A much better type of education would be achieved.
- f. Children could obtain the early part of secondary education in their own district, without moving away from home.
- g. The majority of parents are willing to accept a plan of consolidation.

To sum up, the writer believes that a school similar to one of the Area Schools in Tasmania would adequately serve the needs of the district and provide a marked increase of interest in education.

YOUTH HOSTELLING AND ITS EDUCATIONAL VALUE

ANNE HOOPER

Youth hostelling is here considered as a true form of education, which 'should develop self-reliance, initiative, independence, perseverance, and capacity to enjoy the simple joys of life, in short, those things which we normally call character.'

Method

The material for the investigation was gathered, for the information of those interested in establishing Youth Hostels in Australia, from personal experience and from Handbooks of Hotel Associations in European countries, in Canada and in U.S.A.

The investigation traces the history of the Hostel Movement and shows the progress it has made in various countries. The fundamental aims of the movement are set out, and the author shows how additional rules and suggestions in national handbooks reflect the international tension of recent years. The life of the hostels is described from the author's own knowledge and from her reading. This section is illustrated with pictures and maps and with a copy of the International Sign Language.

In conclusion the investigation makes suggestions for the establishment of hostels in Australia and sets out their advantages under the following heads: (a) Holidays; (b) Physical Fitness—Appreciation of Country; (c) Educational Value.

THE RISE AND PRESENT POSITION OF VOCATIONAL
GUIDANCE IN NEW SOUTH WALES

J. C. KENNA

The object of this investigation was to discuss the origins and development of the present system of Vocational Guidance, with a description of the present state of Vocational Guidance in New South Wales.

Method

The preliminary chapters discuss the social, economic and psychological origins of Vocational Guidance, laying particular stress on the changing social philosophy which assisted its development. A brief historical outline of the growth of vocational guidance is given, followed by a brief dissertation on the part to be played by the school in giving correct guidance. America, England, France and Germany are dealt with. Germany's plan to adjust occupational choice to the needs of the nation's economy and the difference between the English and American attitudes to tests and to the appraisal of personality are noted.

The changed concept of Vocational Guidance is shown by a comparison of pre- and post-1918 definitions. The present meaning of the words is shown to imply a recognition of the capacity for adaptation of the individual within certain wide fields.

A national survey of Vocational Guidance is then made, stress being laid on the effect on the movement of different social and cultural backgrounds. The chief factor operating to develop the need for Vocational Guidance has been the rapid industrialization of the country. Expansion in the face of official inertia and conservatism was difficult, but an account is given of the growth since 1926 of agencies giving Vocational Guidance in New South Wales—the Vocational Guidance Bureau founded in 1926, the National Institute of Industrial Psychology, the Vocational Guidance and Welfare Officer at Ultimo, and the School Counsellors. A description of the aims, methods, and activities of each is given, supported by tables and figures where possible. Seasonal variations in the number and ability of applicants seeking guidance are discussed.

The work of the Vocational Guidance Bureau attached to the Department of Labour and Industry is dealt with exhaustively, including its attempts to arrive at accurate job specifications for various industries and the success of its work as revealed in a follow-up investigation.

Some attention is given to the lack of appreciation, in some of the Great Public Schools, of the need for Vocational Guidance and to the part to be played by effective testing.

Conclusion

The investigation concludes with a critical estimate and review of the present facilities. The writer considers that there is too little interest shown in the possibilities of guidance, that wage regulations must be revised in the light of vocational guidance and training, that the system of school counsellors must be extended, that much fuller information in regard to the absorptive capacities of occupations must be made available, that guidance work and research should be separated, and that the school programmes must be adapted to the advice given by Vocational Guidance officers.

Appendices show the classification of occupations used at the Vocational Guidance Bureau, a report on the Follow-up Investigation made by the Vocational Guidance Section of the Department of Labour and Industry, and a Report on the Vocational Guidance Survey of Unemployed Youths.

AN ACCOUNT OF AREA SCHOOLS IN TASMANIA

L. A. LARGE

The writer is himself a Tasmanian carrying out educational work in New South Wales. He paid two visits to Tasmania during 1939 in order to examine the working of the newly established Area Schools. His investigational work was guided by the Tasmanian Education Department, and much valuable data was collected. Photographs and diagrams helped to complete the survey.

Individual schools are described in detail. Two are in orchard districts (Cygnet and Geeveston); one is in a dairy-ing district (Ringarooma); and four are in mixed farming areas (Hagley, Mole Creek, Sheffield and Wesley Vale).

At the time of this investigation four more schools were being planned for 1939 and several others for 1940. The main objectives of the system are set out as follows:

1. To create an environment that will be most favourable to the development of the rural child.
2. To provide primary and post-primary education suitable to the environment.
3. To provide facilities for country children equal to those provided in the towns.
4. To curtail the drift of young people to the cities by interesting them in their own environment.
5. To provide an enriched curriculum with a harmonious blending of a practical with a cultural education which should widen the outlook of these young people and give them an interest in educational work.

The main part of the investigation is devoted to a description of the activities and practical work at the various schools together with the arrangements made for conveyance. The following seem to the investigator to be the chief advantages of this scheme:

1. The social value of the system is very great. It gives children a broader outlook and tends to break down the isolation of certain self-centred areas.
2. The less efficient country school is disappearing.
3. The rural child is receiving an education more nearly suited to his type and his environment.
4. A much more elastic curriculum is the rule, age-grouping replaces class-grouping, and discipline is much easier.
5. Many subjects are given effectively which the one-teacher school could not handle.
6. There is a general improvement already in deportment.

Certain disadvantages are noticed, but they are more matters of organization than principle; for example:

1. The grazing and experimental plots are too small to give reliable results. The size of grounds surrounding the school should be much larger.
2. It would pay to have a groundsman at each school to attend to work that the boys should not be expected to do.
3. Much more provision should be made for the teaching of elementary science.
4. The curriculum at the moment is inclined to be too heavy. It places a great burden on the teachers of the ordinary school subjects who are required to reach the usual standard in three days instead of five.
5. A radical change in the methods of training teachers for these schools will be necessary.

Some comparison is made with English Area Schools in Surrey, the movement which apparently inspired similar action in Tasmania.

This type of school is bound to develop much further in Tasmania, and it is hoped that the movement will spread to some of the States on the mainland.

COMPARISON OF ATTAINMENTS OF GOVERNMENT SCHOLARSHIP WINNERS FROM A CENTRAL SCHOOL WITH AN EQUAL NUMBER OF UNSUCCESSFUL CANDIDATES OF ALMOST EQUAL ABILITY

J. P. LOUGHNAN

This investigation set out to compare the attainments of a group of scholarship winners with those of a group of unsuccessful candidates from the same forms whom, judging from their school records and his personal knowledge of them, the writer regarded as of almost equal ability. It sought to discover the reasons for the observed differences between the scholastic records of children and the allotment of scholarships, and to decide whether or not sport or

positions of responsibility had any effect upon examination results.

Method

A comparison was made between the two groups in two ways:

- (a) While they were pupils at the same school.
- (b) After they had finished their courses at the Central School from which they gained their scholarship, and had gone elsewhere to continue their education.

Use was made of school records, Education Department records, questionnaires, and personal knowledge.

A table was presented showing the difference between the place in form and the place in the State examination. An analysis of these figures showed that approximately one-third of the children deemed worthy to receive scholarships by their teachers (judging from school marks and position in form) were rejected by the independent examiners. Boys appeared to be more successful than girls.

The reasons for the variation were then discussed. Unconscious bias towards certain pupils by the teacher, pupil temperament and health, the holding of positions of responsibility, participation in sport, were shown to be instrumental in affecting the results obtained at examinations held by the school and by independent examiners.

A system by which consideration was given to the non-scholastic records of pupils was discussed and approved, and its effect upon the allotment of scholarships on a strictly scholastic basis was shown.

The destinations of the two groups after leaving the Central School revealed that many scholarship winners went to colleges or non-State Schools, and that there was a slight superiority of this group over the group of unsuccessful candidates in respect to passes in Intermediate, Leaving Certificate, and Leaving Honours subjects, and in numbers proceeding to the University.

After discussion of University careers, the suggestion was made that scholarships might be awarded to specialists in subject groups, provided that they obtained a sufficiently good pass in general subjects.

The effects of participation in school sport and of accepting positions of responsibility were shown to be unfavourable to the fulfilment of early promise. Pupils appeared to be almost completely in favour of sport, in moderation, and the writer expressed his own approval.

Pupils who liked examinations were those who did well at them.

The question of competition for scholarships was then discussed, and the fierce competition within the school for the three scholarships now awarded was shown to be as severe as it had been in the past between schools. The writer held that the question of pupils travelling to certain schools well known for their scholarship successes had, in the past, been grossly exaggerated; even under the present system some schools specialized in scholarships to non-State schools, and competition developed in this way. To overcome this the suggestion was made that a certain number of free places at a definite High School should be awarded, the choice being made on the results of an entrance examination conducted at that school.

Conclusions

The writer concluded that four groups should be given scholarships:

- (1) Those who reached the highest positions in school examinations.
- (2) Those who reached the highest positions when examination results were considered in conjunction with the part taken by pupils in school life.
- (3) Those who gained the highest places at a High School entrance examination which was conducted by independent examiners.

- (4) Those who gained the highest marks in a group of subjects at the above High School entrance examination, provided a certain minimum was gained in other subjects.
-

THE OCCUPATIONAL OPPORTUNITIES OF THE BOY LEAVING SCHOOL IN CANBERRA

R. W. McCULLOCH

The nature and scope of the investigation may be gathered from the title. As School Counsellor to the Canberra High School the writer had special opportunities for first-hand observation.

Method

The most important heads under which information was gathered are:

- (a) Adult employment in Canberra.
- (b) Youth employment in Canberra.
- (c) Boys' vocational preferences.
- (d) Boys' vocational abilities.
- (e) Factors limiting the exercise of ability.

A special section was added on the results of some recent overseas investigations into related topics. There is also appended a full bibliography of recent publications arranged under the following heads:

- General reference sources.
- Vocational guidance (general).
- Occupational teaching.
- Vocational training.
- Occupational classification.
- Occupational interests and choices.
- Occupational follow-ups of pupils who have left school.

Conclusions

1. Canberra boys have five times as much chance as the average Australian of entering professional clerical

- work. They also have twice as much chance of becoming labourers. There will be openings in the Public Service for 60% of them and in Industry for another 25%.
2. They will be able to avail themselves of these openings because the occupational opportunities for boys leaving school coincide fairly closely with their desires and their abilities and because they have the necessary intelligence and education to give their abilities full scope.
-

TEACHING ECONOMICS TO JUNIOR FORMS

W. H. MASON-COX

This is a detailed account of an experiment carried out at Geelong Grammar School during 1938 with boys in the second year of the senior school course.

Method

The class concerned was composed of boys not proceeding to an academic course, of average age 15 5 years and average I.Q. of 96. The investigation shows how the course in General Economics was fitted into a curriculum which had for its aim the understanding of the meaning of citizenship in a democratic country. The syllabus of the course is shown in detail, with its applications in larger projects.

In examining the success of the experiment the author reviews the general progress of the class both in Economics and in all school studies and activities as shown on the basis both of work done during term and of examination marks. He also notes the relation of a course of study in Economics and General Social Studies to a scheme of National and Social Service in the school.

Conclusions

1. Such a generalized course of work did give the class some understanding and knowledge of the meaning

of terms and problems of civic life, although it meant the breaking down of the barriers between social, historical and economic studies.

2. Great possibilities lie in the extension of this work to the fields of National Service.
-

INTELLIGENCE TESTING IN THE MIDDLE SCHOOL

ELWYN A. MOREY

Three intelligence tests, one of them the latest revision of the Stanford Binet Test, were applied to fifty pupils in order to ascertain the inter-relations between the tests themselves and also to see whether the results would be of assistance to the teacher in understanding her pupils.

This type of investigation does not open up new ground, but it was satisfactory to find a correlation as high as .89 between the individual Binet Test and the Otis Group Test as standardized for Australian conditions.

The results are presented from the graphical and statistical points of view.

A CRITICAL SURVEY OF GIRLS' SCHOOLS IN VICTORIA ON A COMPARATIVE BASIS WITH SIMILAR SCHOOLS IN ENGLAND AND THE U.S.A.

ELVA RICHARDS

The aim was to examine the part played in Victorian education by the Girls' Schools of the Education Department.

Method

After a brief consideration of their history the author proceeds to a detailed study of these schools, dealing with their equipment and general organization, the curricula for the domestic, commercial and professional courses, vocational opportunities for exit-students, library facilities, provision for physical education and extra-curricular activities.

Information has been drawn from ten schools which have been classified according to their various locations.

In the second part of the investigation comparisons are made with the Walsall Blue Coat School (Birmingham) and with the core curriculum of the Abraham Lincoln High School at Los Angeles.

Conclusions

1. There is a serious inadequacy of plant and equipment in some of the Victorian schools.
2. One cannot fail to note the value of the work being done in these schools and the happy atmosphere which characterizes them.
3. There is room for development along the lines of the American Junior High School.
4. More girls' schools in rural areas under a scheme of consolidation should be established.
5. Some scheme is needed for maintaining contact with girls who have left school.

THE CAREERS OF GRADUATES AND NEAR-GRADUATES (1899-1938) OF THE QUEENSLAND AGRICULTURAL COLLEGE

C. A. RODERICK

The writer has endeavoured to estimate the effectiveness, in a vocational sense, of the training offered by the Queensland Agricultural College to those of its students over the last forty years who have completed the full course.

Method

Sociological and economic conditions affecting employment in rural industry are considered: the rise in population, the expansion of production, the development of export trade. The numbers of graduates in Research (beef-cattle, sugar, cotton, tobacco, etc.), the Fruit Industry, and the Dairying Industry are given, and an estimate is made of

the future 'carrying capacity' of these and other fields for men with scientific training in agriculture. The account is supported by tables and graphs.

A history of the Queensland Agricultural College is presented in four sections covering the period 1899-1938. Modifications in aim and curriculum over the forty years are noted, but consideration is given chiefly to the careers of graduates. Summaries of present occupations are provided in tabular form and notable careers are mentioned. The number of graduates lost to agricultural employment in each decade is given and reasons for the loss are advanced.

For comparative purposes analyses are made of the records of ex-students from the sister colleges of Hawkesbury, Dookie and Roseworthy.

Conclusions

1. Over 80% of Queensland Agricultural College graduates have entered rural occupations.
2. The failure of the rest to enter or remain in rural employment has resulted mainly from economic necessity.
3. The migration to non-rural occupations might be avoided:
 - (a) By more sympathetic consideration being shown to the family circumstances of graduates;
 - (b) by the adoption of a Land Settlement Scheme;
 - (c) by the appointment of a Careers Master to the staff of the College.

ACTIVITY WORK IN SOCIAL STUDIES

SYLVIA A. ROLFE

The writer gives an account of her introduction of activity methods into certain classes at the Box Hill Girls' Technical School. A preliminary section deals in very brief outline

with various plans under which individual work has been provided for in England and U.S.A.

The author's experiments were carried out under very definite limitations—the school equipment for activity work in Social Studies was meagre, only slight modifications of the system of formal examination were permitted, and the pupils themselves were below average in mental ability and without training in independent study. The study may be of use to others working under similar conditions.

THE YOUNG FARMERS' CLUB MOVEMENT

R. F. H. ROW

The aim was to study the Young Farmers' Club Movement with a view to forming some estimate of its effectiveness as a part of rural education in Victoria.

Method

Is rural education to be considered as an education for rural vocations or as a general education in a rural setting? According to the answer given the Young Farmers' Club Movement will be thought of as (1) an economic movement, (2) an educational movement. The great majority of people regard it as (1). The Education Department and some teachers regard it as (2). Rural education should differ from urban in method, environment and curriculum. Young Farmers' Clubs were formed in Victoria to fit the curriculum to the environment of country schools. Enquiry shows, however, that few Victorian schools have a decided rural bias.

The success of a Club depends mainly upon the teacher, who must have an enthusiasm for the ideals of the movement, an appreciation of rural activities and problems, and an understanding of rural people. Refresher schools for teachers seem to place too much emphasis on the need for agricultural knowledge.

One of the greatest dangers besetting the movement is the growth of unhealthy competition. Field days give opportunity for exhibiting projects and help to arouse local interest, but they have highest educational and social value when they are non-competitive.

The Young Farmers' Club Movement invites comparison with rural education in Denmark. The weakness of this comparison lies in the absence in Victoria of a general rural bias to the curriculum.

Conclusions

1. The movement has been successful in these ways:
 - (a) Local interest has been aroused, farm, community and school having being brought into closer touch.
 - (b) Most teachers report a greater interest by the children in general school work and group activities.
 - (c) Teachers have had the opportunity to offer education which is real and vital.
 - (d) The standard of stock in some districts has been raised.
 2. The future of the movement will depend upon which is the predominant aim. Work should be directed less towards economic and more toward general educational ends.
-

THE PLACE OF GIRLS' SCHOOLS IN EDUCATION, WITH SPECIAL REFERENCE TO THE GIRLS' SCHOOLS OF THE VICTORIAN EDUCATION DEPARTMENT

ELLEN V. ROWE

Method

The first section of this paper offers a brief review of girls' education in other times and in other lands. The history of Girls' Schools in Victoria is then outlined and a more particular survey is made of the Girls' Schools under the

Victorian Education Department in 1938-39. Statistics are given to show the numbers in attendance at the different schools and for each year of the course, the previous educational achievement of the pupils, and their domestic background as revealed in an enquiry into parental occupations. The curriculum is described and a statement is given showing the years of attendance, the ages on leaving, and the destinations on exit for pupils of the J. H. Boyd and the Footscray Girls' Schools over a period of three years.

Conclusions

1. The value of a training in Home Crafts is evident.
2. Special difficulties arise from the location of Girls' Schools in industrial areas.
3. There is a tendency to send retarded pupils to the Girls' Schools.

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