AUS

AUSTRALIAN COUNCIL FOR
EDUCATIONAL RESEARCH

THIRTY-EIGHTH
ANNUAL REPORT
1967-1968

A·C·E·R

Frederick Street, Hawthorn, Victoria 3122

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1967-1968

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Members of Council for 1967-1968

Including Annual Meeting 1968

CO-OPTED MEMBERS

PRESIDENT

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VICE-PRESIDENT

Professor Sir Fred Schonell, M.A., Ph.D., D.Litt., F.B.Ps.S., F.A.C.E.

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CO-OPTED MEMBER

Mr A. H. Webster, B.A., B.Ec., M.A.C.E.

Footnotes: 1. At the annual meeting in 1968, Dr J. A. L. Matheson and Mr W. Wood were elected as Vice-Presidents. Professor P. H. Karmel, Vice-Chancellor of Flinders University, accepted an invitation to join the Council as a co-opted member. 2. Observers: At the annual meeting of the Council, Mr F. H. Brooks represented as an observer the state Directors-General of Education, and Mr H. K. Coughlan was present as an observer for the Commonwealth Department of Education and Science.

MEMBERS APPOINTED BY STATE INSTITUTES FOR EDUCATIONAL RESEARCH

NEW SOUTH WALES
Associate-Professor D. Spearritt, M.A., M.Ed., Ed.D.

VICTORIA
Mr G. D. Bradshaw, B.A., B.Sc., Dip.Ed., M.A.Ps.S., M.A.C.E.

QUEENSLAND
Dr S. A. Rayner, M.A., M.Ed., Ed.D., M.A.C.E.

SOUTH AUSTRALIA
Mr K. L. Berndt, B.Sc., B.A., M.A.C.E.

WESTERN AUSTRALIA
Dr R. S. Adam, M.A., Dip.Ed., M.Ed., Ph.D., F.A.C.E.

TASMANIA
Mr H. L. Dodson, B.A., B.Ed., M.A.C.E.

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Retirement from Council of Professor Sir Fred Schonell

At its annual meeting held on 24 and 25 October 1968, the Council was advised by Professor Sir Fred Schonell that for health reasons he wished to resign from membership of the Council. Sir Fred had been co-opted as a member of the Council and appointed to the Executive in 1957, and elected as a Vice-President in 1959.

His resignation was received with regret by the Council, which placed on record its appreciation of Sir Fred's long services to the Council, of his contributions to its programme and to its development, and of the deep personal interest he had shown in its activities both before and after he became a member of the Council.

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Annual Report by the Director

Presented at the Annual Meeting of the Council
*24-25 October 1968**

1: FUTURE OF RESEARCH INTO EDUCATION IN AUSTRALIA

Any graph of public interest in and concern with education in Australia would show rises and falls over the last century. The last decade has been a period of rapid rise in both private and public interest, and of an equally rapid rise in expenditure from private pocket and public purse.

Australia is not alone in its increased public and private expenditure on education. One result overseas has been that the literature on planning for education carries frequent references to measures of the efficiency of education. There are seen to be limits of one kind or another on the portion of its national income that a nation can or should spend on the education of its citizens, although there are no infallible criteria on which decisions may be based.

No nation—even if, like the USA, spending vast sums on its education by both absolute and relative standards—is satisfied with the outcomes of its education. Nations seem to be more aware of their neglected areas and their deficiencies than of their successes and satisfactions; and to deal with the inadequacies while continuing to maintain the adequacies requires higher and higher expenditure. It is inevitable therefore that 'value for money' should become more than a slogan; that the probable outcomes of alternative proposals for development or change or improvement should be sought before decisions are made; that ways should be sought for concurrent evaluations of the effect of policy decisions in organization, curriculum or method; and that existing procedures of all kinds should be subjected to probing scrutiny—to ensure both that they are doing what is expected of them, and that there is not an equally effective procedure available that will cost less in time or manpower or physical materials or mental and emotional resources.

Australians are perhaps writing and speaking less often about these matters than other countries, except perhaps about failure

* In this printed version of the report, account has been taken of comments made on it during discussion at the annual meeting. The views expressed are those of the director and not necessarily those of the Council.

rates at universities. But we can expect the demand for efficient use of scarce resources to be as pronounced, as insistent and as reasonable, as elsewhere. Within the limit that insistence on 'efficiency' should not become a preoccupation that is itself inefficient, those involved in education should welcome the challenge of such a demand upon their analytical and constructive skills.

An atmosphere in which such questions are asked is one in which research of all kinds should flourish. It is one in which there is unrivalled opportunity for the innovating mind, for the critical analyst and the equally critical synthesiser, for the strict experimentalist and for the comparative educator concerned with the productivity of different systems. The research worker oriented toward contributions to any one of the disciplines that contribute to education or to the discipline of education itself will find in it all that he needs for excitement. So too will the worker interested in the application of research findings to some of the practices that make up the vast range of human activity involved in education.

The awareness of the benefits to be derived from research in education has increased at an even faster rate over the last decade than the interest in education itself. This has been, I think, partly a rub-off from the obvious benefits to our way of life flowing from medical, agricultural and technological developments based on basic research into the scientific disciplines, and on research into their applications to matters within our daily living; and partly a recognition that those responsible for policies and practices in education should base their decisions on a firmer factual foundation than has often been the case in the past.

It has had a threefold effect. It has led to a search for evidence in the literature of education and its supporting disciplines that current practices are soundly based and have been properly assessed. It has led to a much more critical examination of many things that were taken for granted, and has encouraged many good minds either to undertake some research or to press for more of it. And it has led to several attempts in Australia to embody the results of both analysis and research into kits of materials for use in schools, so that the no-man's land between the findings of research and its application in the classroom can be effectively crossed. More people than ever before are questioning practices and trying to find answers to problems. Much of the questioning remains at the verbal level, but many are trying out something new and making some sort of evaluation of it.

By comparison with the number and magnitude of the questions

and problems, the research effort in Australia is still small. But it has grown rapidly over the last decade, often in inchoate ways. Most of those involved in it are also enmeshed in such other activities as administration, teaching and counselling, but knowledge both of the *need* and of the *growing support for the research approach* to problems has led many to devote more time, with enthusiasm, to research. With some change in organization and redeployment of staff, the research effort could be doubled or trebled at short notice. Expansion beyond that level will require a deliberate expansion both of the programmes for those higher degrees which give training in research, and of the opportunities to those so trained, to undertake research immediately after their training.

It is an idle hope that a short burst of intense activity, by even a very much expanded force of research workers trained by existing courses and methods, will so push back the frontiers of knowledge that all major problems will be quickly solved, all doubts resolved, all lines of progress thoroughly mapped. Like any other field of human endeavour, education will produce more questions than researchers can answer. There is something attractive about the metaphor of pushing back the frontiers. A more realistic one for research is that it widens the horizon. Yet that too is misleading. Some short-term and some survey research can in fact bring part of the horizon into focus and is intended to do so, although I know of no such study that I have myself undertaken which has not—even while limiting one part of the horizon—opened up much more for exploration. We must accept that the more good research that is done, the more we will find to do. I can see no feasible limitations to what can be done, given resources and intelligent use of them.

But meanwhile, because of that very vastness of possibility, there is an immediate and continuing need to establish priorities so that the resources available may have the most direct effect in improving the quality of the education given.

When research priorities are mentioned, there is a danger that what is given high priority will be either the immediate and pressing problems which have arisen often because of pressure of events and which only a change of events will resolve, or some matter of current controversy which is causing professional or political concern. Often these matters are not *soluble* by research methods, although research may help to provide some of the data on which decisions are made.

This is not so say that the solution of some current problems

will not be helped by well-planned research. It does not help the advocacy of more research to deny that short-term research on current problems should have a high place. But it must go hand in hand with long-term research which is not likely to yield a full and comprehensive set of answers—research into purposes; research into the persons for whom they are proposed; research into the processes of learning and the nature of its effects; and research into the outcomes of education and its impact on society.

Emphasis upon research which will have an immediate and visible effect in the classroom is to be encouraged so long as it is not narrowly interpreted as involving only teachers and pupils, and their interaction. Prior consideration of purposes and later evaluation of the outcome of the interaction in the light of those purposes are equally important in the picture of education. Nor should the relatively simple and often scorned factual survey be neglected. It is often essential to help determine both the relative importance of a problem and the context in which its solution must be attempted.

ORGANIZATION

In the expansion and development which, along with many others, I think must take place in research into education in Australia, there are a number of possible alternative courses of action.

Growth will take place through the expansion of existing centres or units, and/or the development of new ones. It seems unlikely that new units will be established outside the universities and other tertiary institutions or the several government departments responsible for education. But the initiation of special units would not be impossible. Whatever is done, those responsible for the distribution and use of funds for research will need to decide not only upon priorities in their expenditure, but upon whether they should be directed to the solution of specific problems or to the development of specific programmes or projects, or to long-term or to continuing research in the disciplines that support education. In the latter case, of course, they will obviously be directed to matters relevant to education.

There seem to me to be two main issues here.

1. Should Australia move towards the development of centres specializing in particular areas, or towards centres with diverse interests and activities?

2. Should each centre, in the area it is concerned with, undertake the combined role of basic research, applied research, develop-

ment and trial of applications, dissemination of approved recommendations, and evaluation of widespread use of results? Or should it have a more limited interest, so that there can be greater specialization of activity?

The frank answer must be that we do not know what is best—and no one else appears to. In these circumstances, there seems a case for both variety and diversity in the breadth of interest and the breadth of activity in whatever centres are expanded or established. The case for such variety and diversity is supported to some extent by observation of the necessary functions of existing centres in Australia.

For the research branches or offices of state departments of education, it seems unrealistic to suggest specialization or concentration of function to the exclusion of concern for more general matters. They are service centres, and I cannot envisage them not having this function. Particular members of staff may have specialized interests, but there can be scarcely a rationalization of activity overall—in the sense that State X specialises in reading and State Y in mathematics, and so on. (This is not an argument for duplication of specific research and development in six or seven centres. I hold that to be wasteful. But I believe it is a realistic approach so long as the state departments have their present responsibilities.)

For the universities, too, it seems unrealistic to suggest concentration of expertise to the exclusion of concern for other areas, although I think there is a case for concentration as well as diversity within a particular university. I think the diversity is necessary so long as each university offers the master's degree in education with a requirement of either course work or thesis. My reason is a simple one. If the masters' courses are to be taught adequately and the theses or dissertations adequately supervised or assessed (and otherwise the course should not be offered), the universities want scholars in charge of the several segments of the course. And these scholars should be undertaking scholarly studies and research.

I think concentration is desirable in addition to this diversity, to enable each of the universities to build up expertise in a particular field of study and thereby to attract students in sufficient numbers to make a significant contribution to that field. Something of this sort is going on here and there in Australia. It could be further developed, I believe, to the advantage of Australian education.

Overemphasis on concentration would, however, not be an advantage, since both students and staff, even if specializing, need

the association of those concerned with other equally important aspects of education.

It would not, I think, be difficult to select areas for concentration. It could be done expeditiously in collaboration, and would be made easier if there was a guarantee of adequate initial and continuing financial support for staff, postgraduate students, and research projects. Once established I think these centres would have no difficulty in attracting good staff and interested students, and in building up a status based on performance. They should have a long life, although not necessarily be a permanent feature of any university scene *in the form in which they began*: a 'Centre for the Study of Educational Theory' may find after ten years of operation that one of its off-shoots can and should bear more concentration, or that combinations of theory and practice should be explored in more depth.

On the other hand, it is entirely feasible that some centres, institutes, units (or the same item with some different title) should be established either in association with an existing institution or agency or separately from it. Centres for the study of Aboriginal children or for the study of the language problems of migrant children or for the study of the teaching of an Asian language could be established within existing universities in association with one or more departments (e.g., the former could have joint affiliations with anthropology, psychology, sociology, and education; the latter with a language department or department of Asian studies, and a department of education, and so on). They could be established within one or more of the state departments of education—and here I can envisage a specialization occurring, where one or more such centres would have an Australia-wide function and would be more than service centres for their own states. They could be established at the Department of Education and Science, or at the ACER, or with probably less viability as autonomous centres with governing bodies and funds of their own, in a manner similar to that of the 'regional laboratories' in USA. (Among such centres, one that perhaps should have high priority and be sited *at an appropriate university* is one to study the effect of diet, nutrition, and other physical elements of the environment on the learning potential and capability of young children. This is a basic research field in which Australia as yet has no educational research to call on.)

There are good arguments for having on the Australian scene some centres which concentrate on one step of the sequence:

research—demonstration—dissemination—evaluation, and others which undertake all steps of the sequence. Thought regardless of feasibility or consequences needs to have its place in any programme of research, just as research without consideration of its application to the actuality of education needs to be given a satisfying home.

I still adhere to my view that education is activity and that research in it must have application to that activity if it is to claim support. I think it also desirable to have those engaged in it professionally carrying through, or seeing to the carry through into action and final evaluation, of the result of their research. This may not mean more than the linking of this result to others to set off the next step in a research programme, but it may mean carrying through a programme involving the preparation, dissemination, and evaluation of a revolutionary method or curriculum or organization. I think too that for some researchers the thought of later involvement in application is inhibiting. They suspect that it might be wasteful of talent, and that an overriding concern for application may prejudice the quality and completeness of the basic or initial research.

Nothing that has been said so far requires the setting up of a completely new organization or system. It has probably stated the obvious:

- that there is an increasing interest in and an important place for more research into the purposes, persons, processes and products which form the fabric of education;
- that in the wide range of matters with which education is concerned there is need to establish priorities upon which research effort should be concentrated, and that this will require short-term and long-term research, both basic and applied;
- that there is a place in the organization and systems set up to undertake research both for centres concentrating on particular fields and others of a more general nature, and within those centres some dealing only with some aspect of research or application and others ranging over the whole continuum from perception of the problem to evaluation of a solution.

TRAINING

If an expansion takes place, what kinds of persons are required? There is no single model of the necessary training. The skills needed in research, development, evaluation and dissemination are in many ways different one from another and require different kinds of

training. Research in education covers such a wide field that it is difficult to consider any single model of training being effective in all situations. Nevertheless there are basic elements in the training required.

There is first, I think, the need for a sound first degree. It has been customary for us to expect this not to be in education itself, but it could well be so. In studies beyond first degree, we expect that the ability to analyse and to abstract the essence of a problem will be developed to a marked degree, that a firm grasp will be obtained of the main techniques of research, and that this grasp will have been demonstrated in the production of a thesis by those who wish to continue with research. If the further studies have led to a doctorate, then the thesis is assumed to have made a contribution to knowledge, and to be more than an exercise in training. We expect someone qualifying for a master's degree by thesis, and for a doctor's degree, to be able immediately afterwards to undertake research on appropriate subjects with much less supervision than others require.

An equally effective training could be obtained by internship in a research centre, but the real source of trained research workers should be from the formal courses in the universities. If units or institutes were established at the universities, internships and formal work in university courses could be established. There are sufficient numbers taking masters' degrees at present to enable a considerable expansion to take place in the research effort in a short time, if these persons can be employed in it. Many of them are already fairly senior men or women who will not turn to research as their final career unless it offers comparable salaries and career prospects to those available elsewhere. The small numbers taking the doctor's degree are mostly members of staff of universities. They will use their qualifications both in their later research and in their training of others.

In addition, there are people qualifying in disciplines and schools other than education who could move immediately into educational research—from sociology, psychology, economics, history, philosophy, statistics. Again it is a matter of providing the opportunities for such people to enter educational research, and to remain in it to develop a specialization.

Few of those engaged in research in Australia have had the opportunity, or perhaps the wish, to develop specialization and to build up knowledge in a way which will enable them to be seen by people wanting to specialize in a particular field as a suitable

person under whom to study or work. Unless we can develop such specialization and have students for higher degrees see these places as their centres for higher degree work, we will not develop enough specialists in particular areas to enable us to make a significant impact on any particular set of problems.

ROLES OF CENTRES

There is as much doubt about the probable or most desirable roles of the various centres where research goes on as there is about concentration or specialization of functions. There is no reason in theory or organization why any one centre should not undertake any particular kind of research: for example a state department can as reasonably approve some concentration on aspects of learning theory relevant to education as can a university department of education or psychology, and a university as reasonably undertake development and application. Certainly the university departments by tradition are more concerned with contributions to knowledge through 'discipline oriented' studies than with application; and education departments more concerned with research associated with the administrative and curricular problems of their departments—'mission oriented' research—than with less applied studies.

This kind of separation of function, or agreement in practice about areas of responsibility or of operation, depends upon such matters as—

(i) the size of university departments and the quantity and relevance of their research work;
(ii) the size and quality of research units in state education departments, the explicit charter they are given and their need to undertake particular studies as a basis for policy decisions;
(iii) the existence of other bodies with interests in research; and
(iv) the policies of governments in regard to contracting for research and development.

Any clear-cut separation of roles is illusory. There are certain to be areas of overlapping or parallel activity, particularly in curriculum development and educational methodology.

I can see some clear-cut activities for a state department of education or the Commonwealth Department of Education and Science or the national Catholic Education Office in obtaining data for policy making or evaluation of policies. But many of the functions at present performed could be contracted out to a uni-

versity or to a special centre like ACER, just as a state education department or the Commonwealth Department of Education and Science could with justification establish a laboratory for studies of learning, or a child development centre for the study of all aspects of the development of the school child.

In a federal system like ours, little interest has been shown *at the state level*, until quite recently, in national studies. Although there is a good case for such studies being undertaken mainly by bodies like ACER, the Department of Education and Science, the Australian National University, the Australian Teachers' Federation, the Australian College of Education, and other national bodies, there is again no reason why a state university should not undertake some of these studies. And there are some which could be effectively handled by the research branch of a state department.

In sum, then, it seems to me that any subdivision of the field of research or delineation of the roles of various institutions or kinds of institutions is a matter rather of mutual agreement than of determination by the nature of the institutions. Roles can and should be flexible. No particular field of research or development should be regarded as unquestionably the field of one institution or one type of institution. Strength in staffing, experience and previous performance, geographical suitability, political expediency—these and other criteria may be important in determining where particular things should be done at particular times.

TOPICS AND PRIORITIES

Are changes in the organization of education in Australia—and possible changes in the general nature of schooling—likely to affect research in the future?

It seems clear that the Commonwealth is to play a larger role in education. It will need to make inquiries into potential areas of policy making, and evaluate implemented policies. The Catholic Church has set up a national office, and both at national and at state levels will be concerned with similar inquiries. Both, as well as state departments, independent schools, and the autonomous and semi-autonomous tertiary institutions, will be concerned about their efficiency. Research must, I believe, play a much more active and critical role than it has done in the past.

There is no shortage of important matters for inquiry. In any field, whether this be curriculum, organization, method, evaluation, administration, buildings, training of teachers, child growth and development, environmental effects, or the establishment of goals,

long lists of unanswered but important research questions can be listed. Priorities within these lists will inevitably change from time to time.

It is probable that in some matters we already have sufficient background knowledge and that what we need is its application, assessed in different settings and with controlled variations. On other matters, perhaps the obvious applications have already been made, but either not appraised or not effectively applied. It is possible that some important questions have not yet been asked because the apparently obvious research out of which they might arise has not yet been done.

My own long-term priorities for investigation are:

1. Family stimulation of the mental, social and emotional development of the young child from birth to schooling, with particular regard to verbal behaviour, the handling of children's questions, and the combination of manipulative, visual, aural, and oral experiences that the child has. It is at this level that some basic physiological-neural-dietary etc. investigations ought to be associated with the more traditional types of research.
2. The match between on the one hand the individual's rate of learning and most effective mode(s) of learning, and on the other the mode(s) of instruction and the materials for learning that we can offer him.
3. The nature of development—cognitive, social, and emotional —at the transition stage between pre-adolescence and adolescence.

These assume that purposes have already been established and that acceptable curricula are available to lead to the establishment of those purposes. (It is unlikely that any single curriculum is the best for all pupils or all teachers.)

Working on those priorities would surely lead to investigation into school organization, buildings, evaluation, the preparation of teachers, and the use of instructional resources.

There have been few areas of *concentrated* study on Australian education from which results of short-term or long-term value have emerged for direct use in schools or other institutions. But a good deal of the research done in Australia has influenced practice to a significant extent. Much of this has come from the state education departments and has concerned mainly their own schools although it has brushed off on to others. It has been mostly research done

to help to solve a particular current problem or to provide data to help to decide between alternative policies, but it is not difficult to list a number of important actions taken as a result of research, or developments in practice in schools and other institutions arising from it.

Except for the research done within universities upon their own educational problems, it is difficult to find much research done under university auspices which has obviously affected educational practice or policy. Still, I believe an intensive inquiry would show a significant cumulative impact, upon educational thinking, of the slowly growing results from masters' theses and the research of university staffs. In the same way, I think the influence of at least some of the research of the Commonwealth Office of Education and its successor, and of the ACER, can be documented in regard to policy decisions, school practices, and the climate of thinking.

CO-OPERATION IN RESEARCH AND CONCENTRATION OF RESOURCES

But whatever the past has produced of value in research activity, there is now—I think by general consent—far too little of it being done to match the resurgent interest in education with proven ideas and guaranteed practices. Both to satisfy good professional thinking and the legitimate requirements of parents for efficient education, much more research is needed—better organized, more carefully directed towards priorities, and followed through into its practical applications. This will not take place without a deliberate effort. It will require an expansion of training, expenditure of money, and some more formal organization at national level than exists at present. I think the three aspects must be seen together.

At present there is no form of either formal or informal collaboration, co-ordination or even association between all the various units and bodies engaged in research although there is, for example, a regular association of the state departments' research officers, and a regular meeting of professors of education. There is no professional association of researchers, and no journal devoted solely to educational research.

The state institutes provide a sounding board but have not generally seen their role as including co-ordination of interests and activities, or fostering an enlargement of research activity. Many have asked why ACER has not assumed a co-ordinating role, but they have posed the question without having considered either

who or what is to be co-ordinated, or the degree of authority or mutual agreement needed for such co-ordination.

I and others have suggested in recent years that given the present limited resources of experienced and qualified research people in Australia some concentration upon agreed-upon priorities in research would yield impressive dividends. I think this is even more important today. More questions are being asked about education, and more matters opened up for inquiry.

Education departments will concentrate on matters of immediate concern and of importance to plans already either specified or seen in outline. Each within its own sphere of authority will effect co-ordination without questioning its necessity. But the matters of concern and the plans may have little in common from state to state. And in the present and foreseeable organization of education in Australia there is no reason why the Commonwealth, concerned with its own interests, should not act in the same way.

I would not suggest any reduction in these activities, since they bring research and practice face to face to the advantage of both. Research helps both to develop policy and to appraise it; findings are applied to real problems and help to resolve them; critical analyses, controlled experimentation, objective evaluation, are found to yield results of importance to the day-to-day activity of classroom, school and system. Within their own boundaries some universities are doing likewise. This is as it should be. In both these instances, research has yielded dividends in improved practices in teaching or in learning, or in a deeper understanding of an educational environment in which constructive action may be taken with more intelligent awareness of its likely fate.

It is because there already are these evidences of valuable concentration in Australia that I think there should be more of it—both at the state level and on a nation-wide basis. The first and most natural place is at the state level and will require close collaboration between the education department and the university department or departments of education in each state.

Some collaboration already exists, but not of the closeness I envisage. To be effective it must be assumed that those responsible for providing and administering educational institutions have a respect for theory and past research (out of which the interests of university staffs develop and from which most higher degrees take their beginnings), and a readiness to take their problems to the table for the necessary discussion with those responsible for the university research resources. It also assumes that the univer-

sity department and its research activity should have some relationship with the local scene and its problems, and that its interests will be sufficiently close to those problems for its research resources to make an important contribution to the solution of some of the most pressing of them.

This kind of co-ordination—in a setting in which the desire for it may not yet be strong; in which the interest of a university staff member in pursuing a specialized field of study may find no responsive echo in any current problem, policy or plan in schooling or its administration; and in which the practitioner often disparages both theory and the attempt to put a problem into a theoretical context which will or may subject it to a meaningful analysis—is not easy to achieve, and there has been relatively little of it in Australia. As a result, we have all suffered from the scattering of much of the research effort available.

SEQUENCE OF ACTIVITY

There is another kind of co-ordination that we have seen little of as yet—the sequential co-ordination of problem-raising, research, application of findings, evaluation and dissemination to those likely to find practical use for the results. For the most part we have divided the sequence of activity in Australia into two parts—(a) the problem-raising and research on the problem, and (b) the application of findings, evaluation of this application, and dissemination of the results (often with insufficient regard for the evaluation phase, but that is another story). We have not been alone in this, at least in curriculum studies.

One result has been the belief that there is far more information available in research findings than we have yet made use of. Two possible lines of action follow from this belief, in which there is some measure of truth. One stresses the need for better and more rapid dissemination of research findings. The other stresses the need to consider the possible and probable applications of the research, and to see that those are followed up.

The former has led to the development of abstracting services, and in the USA to the establishment of nineteen centres for the collection and abstracting of relevant documents and to the monthly publication by the Central Educational Resources Information Center (ERIC) of the abstracts fed to it from the supporting centres —a formidable but useful service with its accompaniment of microfiche or hard-covered copies of most of the reports.

The latter has led to the development of the three new types of

agency in USA—the nine Research and Development Centers in universities, the twenty Regional Laboratories, and the Supplementary Education Centers. I cannot do better here than to set down the functions of the first two of these in the words of the recently retired Associate Commissioner for Research in the US Office of Education, Dr Richard L. Bright:

> The primary purpose of the regional laboratory is to implement beneficial changes in the schools in its territory. The laboratory will identify what it believes are the one or two major educational problems in a region and mount a program to solve the problems. To widen the use of innovations throughout a region the laboratory will, where necessary, utilize research components, demonstrations in local schools, dissemination activities, and so forth. The R. and D. centers, on the other hand, will be concerned with research in depth in particular problem areas. The problems will be of longer range than those dealt with in the regional labs., and the R. and D. centers will have much less responsibility for dissemination. Probably 90 per cent of the budget at R. and D. centers will be spent for research activities, whereas only 10 to 20 per cent of their budget will go for research at the laboratories.*

The Supplementary Centers (costing $135M in 1967) are designed to encourage innovation in schools and to provide the equipment and facilities for them. It was expected that the staffs of the Regional Laboratories would amongst other things provide guidance for them. In Bright's words, 'one of the major functions of the laboratories will be to provide the direction, the ideas, and the evaluation techniques required to make the Title III program productive'. A large part of these Title III programmes involved the Supplementary Centers. In 1967 when it was planned to spend $25M (US) on the laboratories, $250M was to be spent on the Title III programmes by the federal government. This second amount was not, however, considered as part of the research programme.

Some of the activities of the Schools Council for the Curriculum and Examinations in the UK have been of a similar kind. Its objects and terms of reference are 'to uphold and interpret the principle that each school should have the fullest possible responsibility for its own work . . . but . . . to seek through co-operative study of common problems to assist all concerned with the

* See *Phi Delta Kappan*, September 1966, pp. 2-5.

curricula and examinations of schools'. As its chairman, Sir John Maud, succinctly put it, its concern was to be 'What should our school children be taught in years to come? How should they be taught and how examined?'

RESEARCH INTO EDUCATION IN FUTURE YEARS

What then does the future look like through *my* eyes? (Some of the President's views, as expressed in his 1968 Frank Tate Memorial Lecture, are given on Pages 25 to 28.

1. In view of the centralizing tendencies in Australian education, it is likely that support for research will tend to be on approved projects which are related to the current needs and problems of governments. Though valuable in themselves, and probably adding to the efficiency of the operation of the educational system, these projects will not necessarily open up new knowledge or break new ground. So while seeing the need for a considerable expansion of this kind of research, I see also a need for an increase in support for 'uncommitted' research, initiated and originated without direction and guided by the interests of individuals and groups. I can see no need to operate the 'project' research in bodies separate from the 'uncommitted' research, but merits in having both operating in the same units. I envisage both activities being conducted in existing centres and in new units or institutes. In addition there could be within the latter the kinds of specialized studies referred to earlier.
2. Although an expanded research effort could be readily mounted, and the effective work force in it increased by using people trained for it, but engaged in other activities, expansion at a reasonably fast rate will require more training facilities for research workers. And an increase in the numbers being trained will require reconsideration of training procedures. To be effective in attracting persons of high calibre, good opportunities for productive research after training must be available to them. Expansion of effort and expansion of training must go hand in hand.
3. There is no need to establish new *institutions*. Within existing organizations there is a place for increased activity and greater specialization. New units within existing organizations are both possible and desirable.
4. There is a place for close collaboration at state and Commonwealth levels about problems and the resources for their

solution. One justification for greater specialization in particular places is that it will enable people of like qualification and interest to profit by closer association. When one centre develops a specialization there are too many other important things to do in the same geographical area, by those serving the same constituency, for duplication of specialization to be justified. The resources and work of such a centre should be available to all, and its work supported by all. The same applies at the federal level. Unless the volume of work in any area of responsibility is beyond the capacity of a specialized centre, or of a unit within a more general centre, it seems wasteful to duplicate it. This is not arguing a case for centralization of many activities in one body, at either state or Commonwealth level. Specialized units or centres can be spread; no one institution or department need have or expect to have a monopoly.

5. To expand research and development and to increase the numbers in training will cost money. Co-ordination of effort and the establishment of limited but efficient centres of special competence require an organization acceptable to, or at least representing, those engaged in and concerned with research and development as trainers, executors, or users.

ORGANIZATION AT NATIONAL AND STATE LEVELS

One such organization could take this form.

A. *For funding and co-operation at the Commonwealth level*

5.1 A National Advisory Committee (NAC) on Research and Development in Education, representing the interests of those engaged in research, evaluation, development of curricula and development of educational materials, viz: state departments of education, university departments of education, the Commonwealth Department of Education and Science, ACER, Catholic education, independent schools, pre-schools, colleges of advanced education, and others.

5.11 This committee would have a permanent chairman and small executive provided by the Commonwealth government and a regular allocation of funds for disbursement.

5.12 Its charter would be:

5.121 To keep research and development under constant

review so that it advanced in accordance with national needs.

5.122 To recommend to the Minister, after appropriate inquiry, areas of research and development having a priority for support and appropriate measures to have these handled.

5.123 To recommend to the Minister the nature and size of regular grants to be made to institutions and organizations set up for the purpose of undertaking research and development.

5.124 To make grants in aid of projects submitted to it, to some defined limit per grant and in total.

5.125 To advise the Minister on any application for a grant in excess of the amount within its own discretion, or on those it could not support from its own funds.

5.126 To advise the Minister about the adequacy or otherwise of training facilities and likely changes in both the present and the future.

5.127 To take responsibility for the collation and dissemination of information about work in progress and for the dissemination of abstracts and reports of completed work, using if possible a model something after the ERIC style but much less expensive.

5.13 The NAC would have funds available, additional to disbursements for research, to call meetings, at least annually, of the parties concerned in its programme, so that its advice and recommendations would present their considered views as well as its own.

5.14 The committee would, in its recommendations to the Minister, be free to recommend the provision of funds for research and development to state departments, both for the general development of their work and for the establishment and operation of special units or centres.

B. *For collaboration and integration at the state level*

5.2 A State Advisory Committee (SAC) representing the interests of the state department of education, the Catholic school system, independent schools, university departments of education, and others.

5.21 Each SAC would be responsible to its state Minister,

and each would have one member as a liaison officer with the NAC.

5.22 Their terms of reference would include:

5.211 responsibility for the allocation of special funds made available through the NAC;

5.212 responsibility for any special funds made available annually from the state for research and development;

5.213 responsibility for drawing the attention of the Minister and the NAC to areas of need and suggesting ways of meeting these needs;

5.214 responsibility for ensuring that mechanisms of dissemination and evaluation at practitioner level were as effective as possible.

6. In terms of priorities of action, I think the first steps to be taken at the Commonwealth level are the establishment of a NAC, at the moment without liaison officers from the states. The NAC priorities are, as I see them,

6.1 the establishment of a rapid and effective dissemination service of information about
: research under way
: completed research in Australia
: sources of information about research in other countries;

6.2 the working out of acceptable plans for liaison with states, including, if appropriate, the SACs;

6.3 a survey of the research under way and of completed research in selected areas, related to the best estimate of priorities that the NAC can arrive at;

6.4 arrangements for the extension of training through the award of postgraduate fellowships for research in education, with emphasis on fields selected under 6.2 above;

6.5 the offer of annual funds for the establishment, or the further development, in selected centres where there is already a record of good advanced work being done, of centres for research and development in keeping with the training effort under 6.3 above;

6.6 the establishment of procedures for:

6.61 receiving applications for research projects, or for general support of research activities;

6.62 surveying the overall scene to establish areas of need to which special attention could be directed and to which studies should be commissioned.

FUNDING FOR RESEARCH

The size of the funding necessary is a matter of opinion at this stage. In view of the magnitude of educational expenditure in Australia, it is fair to expect a serious effort to appraise its results, to improve educational procedures and to determine the effectiveness of policies. But what should be done depends upon many things: perception of problems, reasonable certainty that research will help in solving them, availability of qualified persons, and certainty that their results will be in a form acceptable to those who must use them.

Assuming that current expenditure on education in Australia is running at a figure of $1100-1200M per annum (the estimate for 1966-67 was $911M), ½ of 1 per cent of the lower of these two figures spent in research and development would yield $5.5M; 1 per cent would be $11M, and 2 per cent* would be $22M.

If the Commonwealth were to use these percentages to make an allocation for research related to its own expenditures on education, the amounts would have been, for 1966-67, when its estimated expenditure on education was about $142M:

½ per cent $710,000
1 per cent $1.42M
2 per cent $2.84M

If the states were to do the same, their allocations for 1966-67 would have been, approximately, on expenditure of $607M:

½ per cent $3M
1 per cent $6M
2 per cent $12M

(The balance of the $911M referred to is estimated expenditure in the 'private sector'.)

Overall, it seems doubtful if more than $1½M was spent on research in 1966-67—about 0.15 per cent of expenditure on education.

Quoting the thoughts of others in other countries carries little conviction to the unconvinced, but the concluding remarks by

* This figure was proposed by M. René Maheu, Director-General of UNESCO, at the Williamsburg Conference in USA in October 1967.

Michael Scriven to his contribution ('The Methodology of Evaluation') to the 1967 Monograph No. 1 in the AERA Series on Curriculum Evaluation express very well thoughts that are now fairly common among research people and those concerned with curriculum development. He has been discussing at considerable length the complexities of a good evaluation of a curriculum or an innovation in education, and concludes (page 83):

> Complex experiments on the scale we have been discussing are very expensive in both time and effort. But it has been an important part of the argument of this paper that no substitutes will do. If we want to know the answers to the questions that matter about new teaching instruments we have got to do experiments which will yield those answers. The educational profession is suffering from a completely inappropriate conception of the cost scale for educational research. To develop a new automobile engine or a rocket engine is a very, very expensive business despite the extreme constancy in the properties of physical substances. When we are dealing with a teaching instrument such as a new curriculum or classroom procedure, with its extreme dependence upon highly variable operators and recipients, we must expect considerably more expense. The social pay-off is enormously more important, and thus society can, in the long run, afford the expense. At the moment the main deficiency is trained evaluation manpower, so that short-term transition to the appropriate scale of investigation is possible only in rare cases. But the long-term transition must be made. We are dealing with something more important and more difficult to evaluate than an engine design, and we are attempting to get by with something like 1 per cent of the cost of developing an engine design. The educational profession as a whole has a primary obligation to recognize the difficulty of good curriculum development with its essential concomitant, evaluation, and to begin a unified attack on the problem of financing the kind of improvement that may help us towards the goal of a few million enlightened citizens on the earth's surface, even at the expense of one on the surface of Mars.*

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* Ralph W. Tyler et al., *Perspectives of Curriculum Evaluation.* Rand McNally & Company: U.S.A., 1967. See 'The Methodology of Evaluation' by Michael Scriven, pp. 39-83.

APPENDIX: SOME OF THE PRESIDENT'S VIEWS AS EXPRESSED IN HIS 1968 FRANK TATE MEMORIAL LECTURE

The conclusions, then, arising from my quick summary of the position are:

(i) that there is an acute need for research into many problems in Australian education;
(ii) that the existing facilities, though soundly based and full of possibilities, are quite inadaquate to cope with the many problems awaiting solution;
(iii) that the finance available for educational research is also quite inadequate if any progress is to be made in the solution of the many problems confronting educationists;
(iv) that there is a serious shortage in the numbers of educators trained in the techniques of research.

What then do I suggest as a solution of this problem?

The inadequacy of facilities for educational research is not a local or state problem: it is a national one. Failure to provide a solution as early as possible will result in a deterioration of Australian education as a whole. I feel very strongly that to rely on the several states finding solutions in their own areas will result in a piecemeal development which is undesirable. I therefore suggest that a national approach to the problem is necessary and I welcome the attitude of the Secretary of the Commonwealth Department of Education and Science, Sir Hugh Ennor, as expressed by him at the opening of the conference on 'Research into Education' held in May 1967 under the auspices of ACER (and again more recently in the Fink Memorial Lecture). He indicated his awareness of the great need for research in the general field of education, and hoped that the Commonwealth government could give material assistance to it. I accept his statements as an invitation and I now put forward a suggestion for consideration, particularly by the Commonwealth government.

I consider, firstly, that at the summit there should be a national body to deal with educational research on somewhat the same lines as the Australian Universities' Commission and the Advisory Committee on Colleges of Advanced Education follow in their respective spheres. Its prime function would be to advise the Commonmonwealth and state governments of the needs of educational research; it should also put forward proposals for national, local and individual projects; it should endeavour to co-ordinate plans in order to ensure that duplication was not wasting manpower and money; it should recommend financial allocations to the various

research agencies, to individuals and to schools for specific projects; it should encourage the training of educational research workers in appropriate institutions and advise on financial assistance for this purpose; it should also be responsible for making allocations to agencies and for the publication of the results of research, and advise on their application. It should be quite separate from the Australian Research Grants Committee which in the main concerns itself with research in scientific fields.

This body could have its administration through the Department of Education and Science in the same way as do the committees already mentioned. A possible composition of the body might be one person to represent the Department of Education and Science, one to represent departments of education, one for the universities, one for ACER, one for independent research and two or more others not currently engaged in any of the above fields, one of whom might be the chairman.

Whether the finance should come entirely from Commonwealth sources or be a joint enterprise between Commonwealth and states is a matter for decision at the political level. It seems to me, however, that this is an area for which the Commonwealth might accept full financial responsibility in the same way as it has done in the fields of science and technical education—on the grounds of national urgency. This would certainly be a more expeditious way of getting any such scheme launched.

I would recommend the retention of all existing resources for research but would hope that as time went on and finance, trained personnel and adequate facilities became available, they would expand far beyond their present limits. I would like to see other educational institutions, such as colleges of advanced education, teachers' colleges, technical schools and colleges, secondary and primary schools, both government and non-government, encouraged to undertake specific research projects provided they had personnel with the necessary competence on the staff. In addition, grants might also be made on application to the approved lone research worker who, unattached to a recognized agency, wants to investigate some approved problem of significance but is prevented from doing so by lack of finance.

At state level, the research sections of the various education departments could be greatly expanded if substantial financial assistance specifically allocated for research were available.

The universities should, I believe, have a dual role in this proposed expansion of educational research—firstly to train research

workers through postgraduate schools, and secondly to conduct educational research programmes. This might best be done by the establishment of institutes of educational research within certain universities, each such institute to be headed by a professor of educational research. Grants would be the subject of recommendation by the national advisory committee and should be specifically allocated for training purposes, for projects approved by the national body and for individual projects outside the overall national programme.

I consider that it is absolutely essential that ACER must continue its independent role in Australian educational research. This is the only body of its kind in Australia. It is imperative that there should be such a body so that, if the need arose, it could speak against poor quality educational practices or outmoded ones, no matter whether in government or private institutions; and to support its arguments it must be in a position to make its own independent investigations and to do this it must have a branch in each state. Its finances, which at present depend largely on grants made by Commonwealth and state governments, would also need to be considerably increased. If my proposals are implemented, consideration would need to be given to whether governmental assistance should continue as at present or, preferably, come entirely from the Commonwealth on the recommendation of the national committee.

A major problem in this area is that of dissemination of research findings. The publication of the account of a project as a scientific treatise with all its fearsome jargon is of value only to the initiated, and it rarely goes beyond the experts. One of the weaknesses at present is that there is insufficient translation of research findings into the language of the classroom, which the average teacher can comprehend and apply to his daily work. Some thought will need to be given as to how this can best be done. Some education departments have developed comprehensive systems of in-service training, together with an educational centre, itinerant advisory teachers appointed for short or long terms according to the specific matter to be introduced, and a journal devoted to improved techniques—but unfortunately not all have these desirable facilities, or, if they have, they are so restricted that they achieve only small impact on teachers generally. In the past, I have said often, in desperation, that it took thirty years for a new idea to percolate from the central office to all schools under its jurisdiction. Today we just cannot afford such slow progress. Education must gear itself to the faster moving world of industry and speed up its lines of communication

with its practitioners in order to hasten the implementation of improved practices.

2: ROLE AND ACTIVITIES OF ACER

I will approach this through a discussion of its functions, its structure, and its location, and use the term 'Council' when referring to the governing body and 'ACER' where referring to the whole institution—Council, staff, etc. . . . That done, I want to say a few things about the ACER's current programme.

I began my Annual Report to the Council in 1964 with 'Some Comments on the Function and Control of the Council'. I do not intend to repeat all those comments again here, but merely to stress again what I consider the basic facts.

FUNCTIONS

ACER was established, has operated, and has been supported, on the principles that is was to be 'independent of control by any university, State school system, or political party', and that 'its scope should be as wide as the Commonwealth'.*

The objects and powers with which it began have been the bases of its operation and the reasons for its support. Although expanded somewhat in the Memorandum and Articles of Association drawn up in 1957, they can be best summarized as being:

(i) to promote research and investigation into education at any level in Australia, either by initiating such research and investigation, or by co-operating in it with others;
(ii) to publish the results of research and investigation;
(iii) to make grants to aid research investigation and service;
(iv) to foster any development in education in Australia which it considers likely to be of benefit to Australia.

Inevitably, in the forty years since James Russell surveyed the Australian scene and successfully suggested to the Carnegie Corporation that a body for research into and service to Australian education would be an appropriate investment of its venture capital, there have been changes in the setting and therefore in the emphases. But I believe three things still remain firm bases for ACER's activities and existence.

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* From the letter by James Russell to Tate, Mackie and Lovell, and others, on October 1928.

1. *It must be, and be seen to be, independent.* This means that, whatever it does by way of consultation about programmes or by way of research studies, the final decision about policies, priorities and selection of activities must be its own. If increasing dependence on government funds undermines this, it would be better in my view to reduce the dependence, and therefore probably the activities. ACER must not be seen as a government agency, either state or Commonwealth.

2. *Its interests must be Australia-wide.* This means that its facilities for research, investigation and service must be available to any educator or any educational organization in Australia; that as far as possible its research and investigation programmes should be concerned with problems that are relevant to Australia as a whole; and that any services given on a contractual and paid basis should be equally available to any person or institution in Australia (with the implications that ACER's decision, in deciding whether or not to accept the contract, will be guided by the relevance and importance of the project involved).

3. *There must be no limits to its interests in and concern with education other than those the Council itself determines.* Although in some ways this is related to the issue of independence, it is a separate issue so far as the public view of the nature of ACER is concerned, and so far as the Council's own policies are concerned. It means that it is no one's business, other than the Council's, to say whether ACER is attempting too much or too little, spreading its interests too widely or restricting them too narrowly. It means that the Council can, at its own discretion, be involved in education at any level or in any form of research, investigation or service.

The Council could, of course, decide to change these bases at any time. For example, if it was decided that something in education of the nature of CSIRO in industry, commerce and agriculture, or of the Commonwealth Serum Laboratories in aspects of medicine, was to be established in Australia, and the ACER was asked if it would allow its resources to be incorporated in one of these bodies, or if substantial aid was to be offered to it on the understanding that it developed along one or other of these lines, it would be within the power of the Council to determine upon a change in existing policies.

STRUCTURE

The Council

Some of the problems of representation referred to in my 1963-64 Annual Report have been resolved by co-options made since then by the Council. How the Council should be constituted and how it should operate depend in the long run on how it sees the nature and functions of ACER as a whole, and of itself in particular.

As the governing body, the Council has the final responsibility for the ACER—its policies, its mode and efficiency of operation, its relations with others, and its solvency. Since its establishment in 1930, it has always relied heavily on its Executive and on the Director to fulfil its purposes, depending upon one meeting per year as sufficient to determine policy and to decide upon particular issues such as staff salaries and conditions, grants, and other matters.

In many respects this system has worked effectively. But in recent years I have been led to doubt whether it is the most effective means of control over a growing organization with the many ramifications ACER now has. It has meant that an increasing number of important day-to-day decisions must be made by the Director and staff, sometimes with effect on policy and programme. It has meant an increasing responsibility on the Director and staff for the financial stability of ACER.

I have appreciated the Council's trust and its willingness to leave interpretation of policy and a good deal of initiative with the staff between meetings, but I think we need more regular associations with the Council along the lines already developing, and in particular in two ways. The first is in helping to determine research, investigation and service needs, so that the interests and perceptions of the staff do not play too large a part in the ACER programmes. The second is in providing for the financing of ACER's activities, and in planning ahead for their expansion and development.

The first of these requires, I think, some mechanism by which members can bring to the Council's notice prior advice and opinion about both the current programme and needed developments in it, needed changes of emphasis, and needed additions to it, together with a realistic notion of what may be accomplished with the resources and funds ACER may have, or that the Council could provide. I think a corollary must be that the Council have a subcommittee (Executive, or other) to consider these proposals, to

try to order them in terms of feasibility and priority, and if necessary to indicate additional resources required for some or all of them.

The second requires the establishment of a finance committee of the Council with a responsibility for obtaining *funds* and *watching their expenditure*. It may be that the Executive can fulfil this function. In any event a finance committee and the Executive should work closely together, particularly in obtaining and controlling funds. As I envisage the Finance Committee operating, it would need to meet frequently and would need to have on it members experienced in financial control. A prerequisite, however, would be that the staff structure and organization of duties were rearranged so that a finance officer on the staff had responsibility for the production of regular analytic financial statements upon which the Finance Committee could base its decisions. The committee would, I think, need to meet frequently—perhaps every one, two or three months—and the material it dealt with would include both general financial statements, project costs, proposals for new projects requiring special finance, plans for expansion and their costing, and so on.

Staff

There are two administrative appointments needed soon if ACER's activities and staff increase as they have done over the past decade. One is a senior administrative assistant to look after matters such as personnel, buildings, equipment and maintenance, insurance and superannuation, ordering and other procedures, and similar matters. The other is foreshadowed in the previous paragraph—a senior finance officer.

Apart from these, there are a number of alternative ways in which the activities may be organized. No particular diagram of organization is adequate, since any such diagram would show separation more clearly defined than it is in fact: members of staff in test development are also involved in curriculum work and on special projects, and members of the research staff write test questions, or sit on critics' panels, and so on. This has led to some suggestions that we should organize less on nature of main work than on our projects, so that under a project director each project could by arrangement call on the help of a particular member of staff. I am not convinced that this would operate any better than a more open arrangement with frequent meetings, informal for

the most part, between staff interested in projects and plans.

Physical separation—the transfer of the staff engaged in educational test development to another building nearby—has given almost *de facto* recognition to a subdivision of work which was rapidly developing and which I think is reasonable—a subdivision in test development between those engaged in the preparation of tests which are specifically or generally 'educational' and are seen to relate closely to schooling, and those engaged in the preparation of psychological tests. I think the two fields are different in many ways, and particularly that they refer to a different clientele of users. Obviously many techniques of preparation, item analysis, sampling, and so on, are common to many tests, but specialization of 'content' and approach are required in each, as well as different academic and experimental backgrounds.

What we have called 'Curriculum' and 'Materials Development' seem to me to need closer examination and probably some degree of integration *in the future*. However, *at present* the curriculum work being done in that unit involves participation in the international study of educational achievement (IEA), which is now almost a full-time job, and attention to the role of the computer in education; and neither of these is related to materials development. The latter type of work lends itself much more than most to consideration on a project basis, with other members of staff being called on from time to time for advice and co-operative work. This, however, has its disadvantages for the 'intermittent' staff, because it can lead for them either to an interrupted project of another kind, or to a working week solely devoted to others' projects, without any foundation in a task they can really call their own.

It has become increasingly clear too that several aspects of the work of the test development unit must be thoroughly reconsidered. We have over recent years done more and more work on a contract basis, or have prepared tests for specific programmes, without adding enough to the availability of tests on the general market for teachers or others, and without having time or funds to undertake the renorming or the revision of many of the ACER tests of earlier years. We have, however, been able this year to review and prepare a new set of reading tests for use in Australia, and to plan for their norming; to take the initial steps also in reviewing our mathematics tests at primary level and decide to undertake a completely new programme of tests at this level; to complete the

preparation of English tests at the junior secondary level and to begin to prepare mathematics tests at this level.

Obviously we should plan for and build part of our programme around regular review and revisions of existing tests (and materials of other kinds). Staff to do this must be paid for from the 'profits' of previous tests, or from advances against the profits of the tests they are preparing. The market for few tests has been large enough to provide this kind of money in the past, but there is a pressing consumer demand for tests of many kinds.

When we undertake contract work to prepare a test for a particular occasion, such as the Commonwealth Secondary Scholarship Examination, there is nothing left for sale on the general market. So unless our costing takes account of this, we are likely to be in the position of not having enough funds, between contracts, to meet the salaries of the staff concerned. Until now we have been fortunate that this has not arisen, because we have had reserves from the sales of materials and enough other paid work. It is not a position I like to be in. Yet there is a great deal of very useful work to be done in providing teachers with good test material for them to use in their day-to-day work—more than enough to keep our full test staff busy, even apart from contract work!

The other important matter is the nature of the work being done by those in test development. Much of it, especially when innovatory, is interesting, and how it works out in practice is often exciting. But the continued creation of test questions and the making of tests is not enough for the kind of staff we want able to make those innovations. They need opportunity to make contributions both to the methodology of testing (item analysis, test form, validity studies, and so on) and to the nature and methodology of learning through their work on tests. But how to give them the necessary time for reading, for creation or original thinking about their special field of work and interest, and to give them adequate time either for research or for the translation of results from what they have done into classroom practice of value to teachers—these are not easy questions to answer. Either we must charge more for tests and test construction, or we must have other sources of money to provide for these 'non-producing' times which are so likely to make other times more valuable in their productivity.

Administration, project and cost control, and other matters loom large in the role of the heads of departments and other senior

officers. When we were smaller, we took them in our stride. Much could be done by informal consultation and by common understanding. With more staff, more frequent changeovers and more projects, these older days are over.

Inevitably we must be more concerned with formalizing procedures and establishing routines. Inevitably, too, unless we take action, the amount of administrative detail carried by a senior officer becomes a serious inroad on his time, and means that the professional skill for which he is employed is not fully used. This is the chief reason why I began this section with the remarks about the need for two administrative appointments. No senior officer with ACER can expect to be completely free from some administrative responsibility. But I want to eliminate all of it except the essential decision-making, leaving the detailed execution to those employed for it, and professional work to those who have been trained for that. We can be more productive, I believe, by using specially trained staff for much of the administrative and financial details, and by enabling the professional staff to concentrate their time on the job for which their professional expertise fits them.

One further point should be made. If steady growth is to be expected, as I hope, the sources of trained and experienced staff are an important question. Some of the training we should do ourselves. Other sources also will be called on. But certainly the staff—when they join ACER at lower levels—will need to see career opportunities available to them in the higher echelons. We should also take positive steps to ensure that those likely to do well in positions of higher responsibility receive the kind of training and experience needed for it.

PROGRAMME

I turn now to a discussion of the ACER's programme.

General

The future of ACER depends fundamentally upon the usefulness to Australian education of the work it does. If that work is useful to those responsible for the education systems, for those in charge of schools, or for the teachers in schools, and its costs can be met, then it will continue and it should expand. In the context of education in Australia since 1930, some of its work has been useful, and it has filled a need not otherwise met. It has upon request, and upon the initiative both of its Council and of its staff operating within accepted Council policy, undertaken new tasks

from time to time. It has tried to make contributions to the emerging needs of teachers and schools, to the solution of problems in the development of Australian education, and to the stock of information about Australian education on which decision-making is based. In the process it has grown steadily both in the original fields of its operations—information services, research, and test development—and added others such as advisory services, testing services, materials development and curriculum development, and a service through the publication and sale of tests, books and other educational materials.

Much of its development since the early 1950s has been financed from its own activities in selling tests, materials and services. That development has given service to many, and I think has improved some aspects of education in schools. It has not been able to contribute much to the growth of fundamental knowledge about education in Australia, although it must be recalled that for some years income from the sale of educational materials like the reading laboratories—which I think have helped teachers and children—enabled the ACER to undertake more general research and more test development than would have been possible had only the regular sources of income been available.

I think that its work can continue to be useful to all those engaged in education in Australia—whether this work consists of surveys of existing conditions, inquiries into causes and effects of current problems, surveys of achievement, or any of ACER's other activities. Whether it continues to be supported in the same ways as in the past—by annual government grants, by contracts, by sale of tests and services, or whether by some of these only—I think it has a future and that that future ought to be one of expansion and not contraction. The Council should plan for that expansion, and in the process consider the functions of ACER that should and could be expanded, the implications for physical expansion, for staff recruitment and training, for location, and for financial control and management.

Activities

I can see no reason why ACER should not continue the main activities in which it is at present occupied:

(i) research, test development, materials development, and testing services, advisory services and information services, to teachers and others;

(ii) the sale and distribution of tests and educational materials, including books;

(iii) the publication of books, tests and materials.

There will be differences in emphasis and changes in the nature of activities, but there should be a steady growth in activity.

There may be less need in future, however, to make grants of a substantial nature, although it is not an activity I would like to see abandoned.

Research Programme

It is not likely to be easier to decide on research priorities than it has been in the past. It can be argued that a major defect in the present programme is that it does not concentrate enough effort on any particular field to make a major contribution to knowledge or change of practice. It may also be argued that it is doubtful if, except over a considerable period of time, the research possible with an annual expenditure of the size of the government grants will make such a contribution, although I have no doubt that if concentrated it would make some impression on one of the major fields of educational activity. The concept of critical mass is relevant in the research effort of a body like ACER.

It has, however, been the policy of the Council since 1964 that the research activity financed from government funds should cover four main fields of work, as well as the general service given through the library:

- the collection, collation, critical review, and distribution of information about Australian education;
- studies in curriculum, organization, and methods of the schools;
- studies in school learning with particular reference to how concepts, important in early schooling, develop;
- studies in evaluation, and in the methodology of research, testing, and curriculum making.

In addition we have had the opportunity to supplement the work done by ACER's own staff with special projects wholly or partly supported by other funds.

Agricultural education, music education, and the current study of aspects of engineering and business studies in colleges of advanced education, are cases in point.

On balance, I still think it better to try to have someone working in each of these fields, though specializing in one particular part

of it, than to concentrate all available funds on one or two fields or on issues of recognized significance. However, expansion of activity is another matter. The alternatives appear to be expansion in the current fields of work—i.e., more dissemination of information and more reviews of aspects of Australian education, more research on curriculum and organization, more work on school learning, more studies on evaluation and methodology, or continuation of some of these at their present level and the expansion of others. I think the latter is the better alternative. I would like to see it develop so that about one half of the Council's income from grants would be spent on a combination of

(a) regular services of information, abstracting and surveying, and frequent critical reviews; and
(b) *ad hoc* studies requested by the states or the Commonwealth,

and the other half on experimental research and development in areas both freely chosen by the Council itself or requested by the states for collaborative work.

The kind of regular study I have in mind for the first half of this programme includes:

(i) the continuation of such services as the Australian Education Index and the Quarterly Review, and the production of occasional bulletins on and reviews of aspects of Australian education. In the process, a specialization in retrieving information about education would be developed. The library is already being re-oriented with this in mind.
(ii) periodical summaries of research in selected fields.
(iii) regular surveys of important matters such as
—the teaching of particular subjects—English, languages, mathematics, art, social science, etc.;
—modes of assessment of performance—both general and in particular fields;
—teacher recruitment and education;
—destination and use of the output of schools;
—class sizes and their correlates in methods and achievement.

The *ad hoc* studies requested by the states or the Commonwealth could be along the lines of the 1946 Curriculum Survey, the 1964 Conference on the Mathematics Curriculum for Primary Schools, or the 1967-68 Tertiary Education Projects.

The more experimental and developmental work chosen by the

Council itself, or requested for collaborative work with one or more states, would include such matters as participation in international studies, such as the IEA Project, involving testing and related inquiries in schools and other educational institutions, as well as studies coming under the three sections dealing with curriculum, etc., school learning and methodology. Such matters would be dealt with as general cognitive development, language development, attitude development, class size and organization, teaching styles, approaches to reading, evaluation of aids and materials, and the development and trial of aids and materials based on research findings.

It will be recalled that at the 1967 Annual Meeting four important areas for inquiry and research were seen as having high priority. I think they are still just as important as the Council then regarded them:

1. teacher education,
2. the development of skills in oral and written communication,
3. the relevance of courses at upper secondary and tertiary levels,
4. the development of cognitive skills and the role of instruction in cognitive development.

Each of these will fit within one of the areas referred to above.

We are already collecting information about work under way in Australia on these topics. There appears to be little.

In assisting in a series of seminars on evaluation in one of the Victorian teachers' colleges, we took the opportunity of probing more deeply into the source and nature of objectives for teacher education, and believe there is a very important field there for inquiry and evaluation.

We have begun some work in the development of skills in written communication, by associating this with our continuing interest in the products of the Written Expression paper in the Commonwealth Secondary Scholarship Examination, and are planning further work at school levels below the tenth year.

Some of the current study for the IEA science project, and a good deal of the information about courses obtained from the advanced education project in engineering and business studies, will deal with the relevance of such courses.

The role of instruction in the development of cognitive skills has been touched on only lightly as yet. We are studying the ages and stages of development of some of the skills, namely, concepts

of classification and skills in classifying, concepts of conservation and skills in using them. We are still some way from being able to set up experimental studies in schools where this information will be used and the effects of different kinds of instruction can be assessed.

Some aspects of the study of both teacher education and communication lend themselves to surveys. Both they and the other two fields of inquiry are most appropriately considered as part of the Council's own freely chosen programme—although all will require close collaboration with schools, other educational institutions, and teachers, and co-operation with state and other controlling authorities.

Test Development

In test development we are at a turning point. The older type of standardized achievement tests served a useful purpose at the time, but have I think had their day as the *principal* form of test needed. They will continue to serve useful administrative purposes for principals and those responsible for schools and school systems, and ACER must not overlook this need. But testing can and should serve the teachers and the pupils in the schools far more than it has done in the past. Teachers themselves have always used testing for the practical purposes I have in mind—for assessing achievement in a unit of work, for diagnosis of weaknesses, and for assurance of 'mastery' before the next unit is proceeded with.

I envisage ACER being able to help them not only with better *general achievement tests* concerned more than in the past both with their specific courses and with the transferable skills aimed for also in the specific courses, but with 'entry tests' for use before pupils begin a particular study, so that time will be most usefully spent thereafter; with diagnostic tests and appropriate remedial material related to units and topics; with 'mastery' tests in content areas based on a careful analysis of the hierarchy of skills involved in attaining stated objectives; and with mastery tests of a similar kind in those matters where no single content area is the sole means used for attaining an objective—in critical thinking, analysis of assumptions, synthesis of data, and so on.

In doing this, we should develop procedures which will enable us to tap the expertise of teachers and others in all states.

At the same time, it seems vital that we begin a thorough appraisal of the ways in which ACER could help teachers in evaluating growth and development in understanding and respon-

sible participation in society; in attitudes and values; and in self-regard. This must be slow work, and frustrating. Our tentative forays in the field have not been encouraging, but they have suffered considerably from interrupted work. It will be necessary to spend a great deal of money, without hope of immediate recoupment from sales, before much that is useful is produced, but the importance of the work will justify the expenditure. The field of work is so large that any real contribution will require funds of the order of $20,000 a year over several years.

Preparing tests on a contract basis has given ACER an opportunity to explore new types of test, and to draw attention to skills and abilities the staff think important, but whether these have had any valuable effect on teaching or objectives is a matter for further study. We would like to find out. Again this will involve us in direct expenditure as well as loss of future income because those inquiring will not be preparing tests for sale while so engaged.

I referred earlier to the difficulty in financing our test development department if contract test development fills as large a place as it now does. The implication is, I think, that we must include in our costs for this kind of work an element for the 'income foregone' when the contract produces a test for a particular occasion and nothing later saleable.

Earlier, too, I referred to the need to give the staff engaged in test development an opportunity to undertake research studies associated with their work. Apart from research of a technical nature, there are other general studies possible. And I would not want to restrict the staff concerned to any particular kind of study. I would like them so long as funds are available to be able to associate their work in developing tests with an interest in the relevant curricula and other school situations, and so become involved with the development of such curricula, as well as with teaching aids and educational materials for use by pupils and teachers.

Materials Development

ACER'S involvement in this activity arises from these two reasons. The first is to demonstrate the possibility of producing materials useful to both pupils and teachers, and to provide the materials to teachers in a readily workable form to help them in their task of attaining given sets of objectives. The second, closely related reason is that it has seemed to the staff that one of the most effective ways of feeding results from research into schools is to

embody them in materials and to recommend a procedure for their use in schools.

It is this approach that made the SRA reading laboratories so useful. The materials being developed for the Individual Mathematics Programme, the as yet unpublished materials in the Study Skills programme, and the Junior Secondary Science Project materials—they represent not a completely new feature in education but an attempt to carry through, to a commercially viable production, ideas about how children learn best in classrooms and how this learning may be organized in a feasible manner.

It has proved difficult to finance these satisfactorily. Each of them has been carried to the present stage only by the willingness of the staff concerned to dedicate their time and energy to the work required.

I think ACER should continue to undertake development of this kind. It will not be easy to pay for it because the value of what is proposed must first be demonstrated by actual production and use of prototype materials. But it can, I think, be done on a project basis with plans laid down carefully on the basis of our past experience.

A major decision in each of the projects so far undertaken has been made at the point of publication. With neither the IMP nor JSSP have I considered that the considerable capital cost of printing should be incurred by ACER, although we have published the relatively simpler WARDS after a minor revision. There seems little doubt that commercial firms will publish good and usable materials likely to have an extensive use in classrooms. Although the final net return to ACER is less as a result, it seems the only alternative to tying up considerable capital in stock.

Possible projects which have been proposed for some time, but which await funds to begin them are:

(i) the preparation of programmed generalizations in spelling, and the expansion of *A Word List for Australian Schools* by additions to the words and by a more extensive guide to its potential users;

(ii) the preparation of materials in social sciences for secondary schools, a proposal that originated in 1966 in our own consideration of possible tests in the subjects or fields of study concerned, and was reinforced by the Seminar on Social Sciences in the Secondary School held in Melbourne in August 1967;

(iii) the preparation of stimulus material and guided assignments to assist in developing writing ability: there are some illustrations of this in some current SRA materials, which we think can be improved.

Advisory Services

We have found a very large and as yet inadequately satisfied demand from teachers and others for informed advice not only about general features and aspects of Australian education, but about teaching materials, testing, methods, organization, and curriculum. It is not of course ACER's function to provide in-service education for teachers and it is scarcely its function to provide general advice about such things as how to approach the use of structured aids in mathematics. But the blunt facts are that for many teachers there is nowhere else to go to obtain this kind of help.

The position is clearer with tests and materials which we ourselves distribute. We should and do try to give an advisory service about tests of all kinds whether we stock them or not, and to follow this up with supply when this is requested. The materials and aids field is a more difficult one, because there is no professional control over their use, as there is with tests. There are so many more of them, and of such a variety that it would be impossible to give an informed evaluation of most of them without a good deal of inquiry and, often, a good deal of evaluation in practice.

There does, however, seem to be a very real need to provide, without duplicating services given by others, some regular information service to teachers about recent developments in teaching procedures, school organization, assessment procedures, curriculum, and other matters, where the present materials for doing this are insufficient. This is in addition to what we already do in answering the letters of individual teachers, preparing the occasional Advisory Service Bulletins about such matters as IMP, and issuing the occasional bulletin in which we present an evaluation of some particular set or piece of material.

A slightly different service is asked for by many psychologists and others working in clinics, or in guidance or personnel work, or in similar activities, and using psychological tests for which ACER is the agent. We seem at present to be meeting adequately the need for this service.

Both the educational and psychological advisory services are important. The former could be expanded with advantage to

teachers and pupils. It must, however, be paid for, and the source of funds is the income from selling tests, materials and services, and not from grants. Unless this income increases without an equal increase in expenditure, we cannot expand our advisory services in any significant way.

I would prefer to await the return from abroad of Miss O'Donnell before I recommend any precise developments. She has been using her Churchill Fellowship to find out amongst other things how an effective advisory service works, and she hopes to recommend ways in which the ACER service may best develop. Meanwhile it would be my recommendation that ACER should develop the service to the maximum extent that funds will permit, and that in that development we should go beyond merely answering letters. An unsatisfied need exists for bulletins of advice, suggestions and information about innovations, about developments in teaching and learning, about tests and materials and their use, and about similar matters. I am sure ACER could do a great deal of good by making these available to teachers.

Testing Services

The provision of special testing services—in which the expertise acquired through test development or the facilities available through the distribution agencies held by ACER can be put to use to meet the needs of an education department, a Catholic Diocese, a group of schools or a particular school, a scholarship programme, or some other purpose—has been one of the services provided by ACER which has been useful to many institutions and individuals. It is not a rapidly growing activity but nonetheless an important one—one that ACER should continue so long as it pays its way. There are probably a number of other ways in which such services could be provided with benefit to those concerned in better selection or in better guidance. I think that, so long as these are not sought for the sake of financial profit but in the interests of those whom we think can help with such a service, this is to be encouraged. In the process of testing, we can often draw attention to objectives and to ways of assessment which benefit both children and teachers.

Sale of Tests and Materials

For many years ACER has been the main but not the sole provider of tests of all kinds for Australian use; and still acts as the agent in Australia for most of the major overseas test suppliers. This has given us access to a wide range of tests useful to many

Australian testers, and in particular given Australian psychologists ready access to valuable tests, while assuring that professional control could be exercised at least over their distribution. This was an important responsibility accepted early in ACER's history as a test development and distribution centre, becoming very much more important after the late 1940s when the test division was firmly established under S. S. Dunn. It is still a major responsibility, and one that gives us from time to time some moments of difficult decision as to what constitutes adequate qualification to administer and to interpret the results from educational and psychological tests. Nonetheless the centralization of purchasing, the availability of some tests at ACER, and the control over distribution that has been possible under this scheme, have all been valuable, and I think should continue.

Educational materials are still typified for us by the SRA reading and other laboratories, for which we acted as agents and distributors for more than five years, with very considerable advantage to schools and to the ACER. Without the income derived from their sale we could not have done many things that proved possible in the years 1960 to 1966.

There is an increasing number of such materials now on the market overseas. Many will be distributed in Australia by other agents. Some appear to be adequately based on research and well tried in practice. When they are available for use in Australia, appear to meet a need here, and there is no other accredited agent operating to distribute them and bring them to notice, I think ACER should do this provided it can be done at no cost to us, and preferably so that it brings in some funds additional to those required to meet expenses. These can then be used for the essential advisory service that should go with their provision. So long as there are needs unmet by other Australian suppliers, which supply by ACER could meet without a price disadvantage to the buyer, I think we should meet them.

Publishing

I can see no reason to vary the policy that has guided ACER publication in the past. We should publish material considered to be of value to Australian educators, whether written by staff members or others, with the proviso that where it is the work of others the likelihood of its publication elsewhere should be small. There are many more publishers of educational material now in Australia than there were even a decade ago, and many are seeking out

authors for publication. I believe ACER will be able to concentrate more and more of its publication effort on research studies that would otherwise not be published in full because the market is so small. These will in general not be suitable for reduction to articles in journals.

3: ACTIVITIES 1967-68

In previous reports I have tried to give some information about each part of the ACER's many activities. In the process perhaps I have not devoted sufficient attention to the more significant ones.

In what follows, I have tried to report at some length upon the main areas of activity, giving only cursory attention to a number of smaller activities.

For the most part the material that follows has been prepared by or compiled in discussion with the principal staff member or members concerned with the work.

TEACHING AND LEARNING FOR MASTERY: SOME IMPLICATIONS*

One important aim of educational research is to discover sources of variance in school learning. Most such research has paralleled school practice in that the criterion has been degree of learning following more or less fixed treatments (instructional procedures), with more or less fixed objectives applied to a group of learners for a more or less fixed period of time. Thus, for example, there is the typical 'method' study: do children on average learn more of X with one method of instruction substituted for another method of instruction?

Recent theoretical speculation suggests that this parallelism has been inhibiting. For many educational objectives mastery is the aim for all or most children. Research into and development of instructional procedures with mastery in view do not mean that individual differences in learners are removed. Individual differences now reveal themselves in differences in time to achieve mastery (actual time or some other measure, such as amount of practice, which is correlated with time).

A few empirical studies indicate relatively large differences in time to reach mastery. Last year's annual report referred to a study by Dr Turner in which the ratio of time to achieve mastery

* This work has involved Dr M. L. Turner, Mr D. M. Bennett, Mr J. Newby, Mrs J. Smith and Mr M. Searle.

needed by the slowest and the fastest learners (in a non-selected upper primary grade population) was approximately ten to one on a spatial learning task. Atkinson (1967)* reports a ratio of approximately six to one between fastest and slowest learners in the number of 'main-line' concepts mastered in a fixed time (about six months) in a computer-assisted individualized introductory reading programme with a 'culturall ydisadvantaged' group of beginning readers.

With a variety of learning tasks, further studies can be expected to reveal similar differences in time to achieve mastery, just as there are individual differences in degree of learning over a similar variety of learning tasks.

There are and will be implications for school organization and instructional methods. The research is still limited and implications should be derived cautiously. One particularly important question for further study in this connection is into the generality or otherwise of mastery learning rates over a variety of objectives, topics, and instructional procedures.

Psychological studies of learning ability over the last thirty or forty years suggest limited generality. But it must be realized that in most of the empirical studies the learning tasks were relatively artificial compared with school learning tasks, and were studied over relatively small time intervals.

Thus there is ample room for studies employing real school learning tasks. This will necessitate the development of major units of instructional materials.

The development of such materials in turn requires a very careful task analysis, perhaps of the learning set hierarchy kind advocated by Gagné; empirical studies to validate the task analysis; careful development of pupil and teacher materials drawing on relevant educational and psychological knowledge and empirical studies leading to a greater and greater coincidence of pupil performance with the degree of mastery required.

Such final instructional materials as emerge can then be used for basic studies of variation in mastery learning rates in addition to providing materials for actual classroom use.

The development of such materials is relatively time-consuming and expensive, but (as Michael Scriven, quoted earlier, pointed out) so are many other worthwhile developments. The Study Skills

* See Atkinson, Richard C., 'Computer-Based Instruction in Initial Reading' in *Proceedings of the 1967 International Conference on Testing Problems.* Educational Testing Service: Princeton, 1967.

project (see below) has been conceived and is being developed in the fashion described above. It is to be hoped that further resources can be obtained and applied to this and to additional similar projects. We have been indebted to the Western Australian Education Department for seconding first Mr Newby and later Mr Searle to assist us in developing the materials in this project.

PRIMARY STUDY SKILLS PROJECT

The purpose of this project is to construct a set of materials for classroom use which will promote the development of the abilities, knowledge, attitudes and habits required to enable pupils to study and learn independently. It is intended that these materials will make the maximum possible provision for individual diferences.

Following the return to Perth of Mr Newby, whose work during the difficult initial period laid the foundations for the scheme, work on a Graph Skills section has been carried on by Mrs Smith and on a Reference Skills section by Mr Searle. The project is under the general supervision of Mr Bennett, with Dr Turner acting as consultant when required.

The original rather ambitious plan foresaw the inclusion in a single kit of firstly materials relevant to the more familiar 'reference skills'; secondly sections concerned with developing the ability to interpret non-verbal materials—photographs, drawings, diagrams, charts, graphs and tables; and thirdly a note-taking and outlining section. If independent learning is to become a reality, we believe that systematic work in all these areas will be required.

Further investigation and analysis clarified the problems involved. Firstly it appeared that materials already existing in this area were of little value. It also seemed clear that the major needs could not be met either by providing knowledge of the necessary conventions—for example, functions of indexes and catalogues, library arrangement, etc.—or by simply providing graded practice in the relevant tasks. Although some of these skills are often acquired by children 'incidentally', particular basic understandings and techniques must in many cases be *taught*. Unless these skills are mastered by the great majority of pupils, it will be impossible to base the organization of study on independent learning.

The mental processes involved are often complex or sophisticated. For example, the major problem in 'looking up' a reference in an index is often to decide what to look up and not how to find a particular word. Moreover the processes and skills involved

in the different sections of the projected scheme have, we find, little in common. Each requires separate analysis. However, because these skills have had only a minor place in the curriculum, these analyses have not previously been done and little relevant research exists.

If they are to have the most efficient results, the materials to be developed appear to require the establishment of a valid learning sequence of specific tasks. The type of task analysis developed by Gagné has been used as a basis for the work done so far. For example, a very detailed analysis was made of the various tasks involved in 'reading' and interpreting graphs. A hypothetical 'hierarchy' of learning 'principles' was then constructed. The assumption is made that a particular principle cannot be learned until the principles subordinate to it in the hierarchy have been mastered.

The hierarchy was then tested by constructing a set of items to represent each principle. By administering and then modifying this test it has been possible to establish a picture of the way in which these skills are acquired.

It is expected that each section of the scheme will consist of two parts—'Basic Units' and 'Application Units'. The Basic Units teach the sequence of principles and give practice in the relevant tasks in their 'most simple and direct' form. Subsequently important variations are introduced. The entry of each individual into this sequence is determined by an elaborate placement test and the objective is that, within the practical limitations, each pupil will be given sufficient practice to learn to mastery.

The Application Units will provide graded practice in which the basic principles will be applied in more realistic and progressively more complex situations. In addition it is hoped to provide the teacher with guidance in planning appropriate study assignments in social studies, science and other subjects in which pupils will utilize in combination the various skills developed in the different sections of the scheme.

Because there was little previous work—either research or developmental—to call on in this field, the problems both in theory and practice have been considerable. We have all been conscious of the time that development of this kind takes, and of the need to bring into discussions about it many more than those whose sole responsibility it is. Nonetheless we believe we have broken new ground. Valuable materials have already been developed and more will flow from the work now being done.

Of the three areas referred to earlier—reference skills, non-verbal materials, and note-taking and outlining—we have nearly completed a major section in Graphs, and are well advanced on an 'Alphabetical Skills' section.

TERTIARY EDUCATION ENTRANCE PROJECT*

The Tertiary Education Entrance Project (TEEP) had its origins in a meeting convened by the Department of Education and Science (DES) in Canberra in December 1967. The meeting, attended by representatives of the Ministry, the Australian National University, Tasmanian Education Department, the University of Western Australia, and the ACER, discussed the development of a new type of examination to be used as part of the process of selecting students for tertiary education. Prior interest in such tests had been expressed by ANU which was faced with the problem of selecting students from a variety of educational systems; by a number of Victorian residential colleges at the University of Melbourne; and by Sir Hugh Ennor, the Secretary of DES, in the course of several public addresses.

The death of the Prime Minister, Mr Holt, caused some delay in obtaining ministerial approval for the project. This was not finally given until early March 1968.

ACER undertook to prepare two series each of five papers:

Paper 1—Quantitative Thinking
Paper 2—Comprehension and Reasoning in the Physical and Biological Sciences
Paper 3—Written Expression
Paper 4—Comprehension and Reasoning in the Social Sciences
Paper 5—A test of understanding and interpreting verbal and pictorial material in literature, the arts and the humanities.

Papers 1, 2, 4 and 5 in the first series are limited to objective multiple-choice questions. Paper 3 consisted of four diverse essay tasks. One series of the five tests has been completed (August 1968). A second series of five tests is now being prepared for use in 1969.

The tests already prepared have been modelled on the CSSE-

* This project is in charge of Mr B. Rechter. Miss J. Maling and Messrs N. Wilson, R. Wilkes and L. Mackay (on loan from Monash University) have assisted him as chief examiners, and they have been helped by Miss M. George, Mrs J. Little, Miss J. Russell, and a big panel of writers and critics.

type tests in use since 1964. All four objective tests are so constructed that all students in the final year of secondary school are able to sit for all papers, irrespective of the particular courses of study which they are undertaking in their final year of school. Despite some initial doubts held by our own staff about this approach, trial testing in a large number of Victorian matriculation classes indicated the feasibility of using such 'content free' tests at the sixth-form level.

Some idea of the stimulus material (verbal, graphical, pictorial, figural) used in the tests may be gained by reference to the published Commonwealth Secondary Scholarship Examination papers. In general we have used in TEEP more diverse and slightly more demanding stimulus material than is used in CSSE.

The prime interest of the teaching institutions in Canberra, Western Australia and Tasmania involved in the TEEP project has been the improvement of prediction of success in tertiary studies. The first series of the tests is experimental in form and will be used by the teaching institutions in correlation studies from which a pattern of optimum use may emerge. It will *not* be used for actual selection.

At ACER we believe that, while the tests will probably serve the predictive function, the widespread use of such tests could provide the opportunity for freeing matriculation courses from their present constraints. The educational problems posed by 'examination-directed' curricula need not be elaborated here.

Another possibility for a test battery would be the development of general achievement tests in key subjects. Such tests would assume that students had studied the particular subject at matriculation level, but would not be so specific as to assume particular and very specific syllabuses. We think that it is feasible to construct a test, for example, in chemistry which would on the one hand be so specific that it would require a student to have studied matriculation-level chemistry, yet at the same time would not depend on familiarity with, and the ability to recall, a large number of relatively trivial or specific details.

Although for purely predictive purposes other kinds of tests could be prepared with approximately equal criterion-correlations, we feel that the importance of the TEEP-type tests lies not only in their predictive value as selection instruments but also in their educational relevance. The tests, we hope, ask the kind of questions which teachers should be asking of their senior pupils. We intend to develop some of the material we have prepared in developing

the final forms of the tests for use as teaching materials in appropriate situations in the classroom.

COLLEGES OF ADVANCED EDUCATION*

This year, we began a three-year study, financed by the Advisory Committee for Advanced Education (the Wark Committee), of aspects of teaching and learning in the Colleges of Advanced Education. The first year of the study is being devoted to a pilot study in Victoria, centering around questionnaires addressed to students and staff in a small number of colleges, the collection of courses of study from the colleges both in Victoria and other states, and discussions and negotiations with authorities in all states about the extension of the study.

The study is limited in two respects. It is concentrating on students, both full and part-time, in the first true post-secondary year, and on the staff concerned with those students (although all staff are being asked to complete the questionnaires), and it is dealing, within the chosen fields of Business Studies and Engineering, with Accountancy and with Physics and an Applied Mathematics (or subjects similar in content if not in name).

It is clear that there will be considerable differences in the organization of studies, in the attitude to studies, in the conditions of learning and in many other aspects, between the states, and within states between full-time and part-time students.

Mr B. Wise and Mr B. Horne were appointed as the research officers to undertake the study. Mr Wise took up duties in September 1967 to deal with Business Studies, and Mr Horne in January of this year for the Engineering subjects. In each subject area during the pilot year an advisory committee consisting of staff from the colleges and others has helped in drafting questionnaires, drawing attention to unexplored areas thought important to both staff and students.

Visits have been made by the research officers to Tasmania, South Australia, New South Wales and Queensland to discuss the study with appropriate authorities in those states. Analyses of courses in Engineering, made by the Institution of Engineers, and in Accountancy by the Australian Society of Accountants, in connection with their accreditation of courses in universities and technical colleges, have been made available to us. In both in-

* This project is in the hands of Mr B. Wise (Business Studies) and Mr B. Horne (Engineering).

stances our object is to ensure that the views of the professional association in courses and standards are well known to the research officers.

As one of the large employers of those taking the courses in the colleges is the Commonwealth Public Service, the research officers have had useful discussions about courses with staff members of the Commonwealth Public Service Board. These discussions have shown a possible cleavage of views between employers and those devising courses, which will need fuller study.

Other studies financed by the Wark Committee are examining related matters, and information is being exchanged between the several groups of research staffs. Quarterly reports on the study are being made to the Wark Committee.

Some interesting data has been gathered in the pilot use of the questionnaires, but the principal value has been in the testing of questions and the exploration of sources of information. In 1969 it is hoped to collect comparable data from all colleges of advanced education in Australia offering courses in the subjects concerned, to be analysed and reported on in 1970.

JUNIOR SECONDARY SCIENCE PROJECT*

The Junior Secondary Science Project (JSSP) was set up at the beginning of 1966, under the joint auspices of the Science Standing Committee of the Victorian Universities and Schools Examinations Board and the Australian Council for Educational Research, to produce learning materials for the first four years of secondary school science in Victoria.

The establishment of JSSP was seen as necessary if teachers were to be given adequate assistance for the teaching of a new course of study being prepared by the Science Standing Committee.

From the beginning, the project staff envisaged that it could be used in other states and even outside Australia.

The production of materials was planned to have the following features:

1. opportunity for students to proceed at their own rates,

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* The Executive Officer of the project is Mr L. Dale. He and Mr M. Robinson (part-time) have been seconded to the project since the beginning of 1966 from the Victorian Education Department. Assisting as writers in the project at present are Mrs M. B. Wilkinson, Mr A. G. Shannon, Mr K. Moritz, Mrs E. Palmer, Mrs S. Taylor (part-time) and Miss J. Fox (part-time).

2. a basic learning sequence for all students,
3. additional enrichment material both within the basic sequence and in the form of optional extras,
4. remedial activities where understanding has been incomplete,
5. laboratory and field experience as an integral part of the learning sequence,
6. frequent testing of progress and redirection where desirable,
7. flexibility in structure to facilitate revision, supplementation or substitution of relevant material.

The JSSP materials for the first secondary school year were planned in nine units of study, each requiring approximately four weeks of class time. Each unit was to comprise

—a learning sequence in the form of a number of separate cards and booklets,
—some fill-in worksheets, for students' use and insertion in a work book,
—a teacher's guide,
—some equipment and visual aids,
—reference pamphlets and booklets.

Each unit was tried in a number of classrooms, revised, retried and revised a second time prior to publication. Meetings of the teachers using the trial materials, visits to classes by project staff, analysis of test results and the supply of comments and suggestions from both teachers and students were part of the evaluation procedure.

By July 1968 the preparation of materials for the first secondary school year had been completed and seven of the nine units had been published. Nine units had been written for the second year and printing of these had been started. The first-year materials were in use in many Victorian and several Tasmanian schools in 1968 and will be introduced widely into Tasmanian schools next year. Extensive trials are also being conducted in South Australia. Many requests for information have been received from schools and curriculum centres throughout the world.

In Victoria, workshops and seminars on JSSP have been conducted for teachers in December 1967 and February, March and June 1968. One of these, on June 21, used two television films made by the ABC and involved some 600 teachers.

The enthusiasm of the teachers who have been using JSSP materials this year is some indication of their value for the teaching of science in the junior secondary school and is some vindication of the time and money spent in their preparation. Currently avail-

able sources of finance have proved insufficient to enable a start to be made on the preparation of the third-year materials. With only the present financial resources available, the project will terminate with the publication of the second-year materials, and with the preparation of syllabus details for third and fourth year, including some assistance to teachers in the form of listing of source material useful in teaching the syllabus.

Because of the interest shown in both Tasmania and South Australia in the project, it appeared that its continuation and expansion to meet the needs of all three states might be an activity which the Commonwealth government would be prepared to fund, if it were to follow the lead given by the then Minister for Education and Science in public statements during 1967.

A meeting was therefore arranged in Melbourne in November last, to which those responsible for science curricula in Victoria, Tasmania and South Australia sent representatives. In deliberations lasting over four days the meeting decided that a project extending over five years would be needed, if the present project were to be expanded to provide suitable materials for Grades 7 through 10 in the three states.

To undertake the necessary work with the quality required and with the necessary evaluation, the meeting estimated that $1.2M would be required.

A submission was therefore prepared, its contents approved and signed by the Minister, Director-General of Education and others concerned with curriculum in each of the three states, as well as by the President of the Council, and at the wish of those concerned, submitted through ACER to the Commonwealth Department of Education and Science in March of this year. The Commonwealth government has advised that it is prepared to make available $750,000 in five equal instalments, subject to assistance being received also from the states. It has invited the three states and ACER to attend a meeting to discuss details of organization and control.

INFORMATION AND LIBRARY SERVICES*

To a varying extent ACER has acted since its beginning as a centre for information on education and particularly on Australian

* Mr R. Fitzgerald gives overall supervision to the information and library services. He is assisted by Mrs P. Segall in the collection and collation of information about Australian education, by Mrs W. Williams in compiling the *Chronicle,* and Miss M. Jennings assists with the abstracts.

education. The *Review of Education in Australia* first published in 1938 reflected the national, comprehensive and independent character of the Council's outlook and role. These characteristics remain evident. What has changed is the way in which new information on Australian education is being processed and published.

The growing mass of new knowledge on education, as well as in other fields of learning, has posed special problems for both librarian and research worker in education. To classify highly technical material, for instance, may involve a type of classification different from traditional library procedures. The trend towards increasing specialization in the various subject areas has led to a search for new ways of storing and retrieving data.

In response to the need for better systematic collection of information ACER established in 1964 its own data-retrieval system. By means of the Uniterm co-ordinate system, information has been steadily collected on various aspects of Australian education. This work coupled with the Council's interest in historical and comparative research has resulted in the publication of the *Australian Education Index,* the *Quarterly Review of Australian Education,* the *Chronicle of Australian Education* and *ACER Abstracts.*

These publications represent a new approach by ACER to the task of monitoring and reviewing recent and current developments in Australian education. On one hand there is an emphasis on reporting happenings as or soon after they occur. On the other hand we are trying to interpret and evaluate change as it occurs. The accelerating pace of change, the complexity of factors at work and the widening interest within the community in education appear to have made our previous practice of making periodic reviews of the whole Australian educational scene less useful than it was, and certainly less useful than the new approach that we have undertaken. This is not to say that some regular and comprehensive analysis of developments would not prove valuable.

Our work in information storage and retrieval remains still at a simple level of operation. We still rely on a manually sorted card index for processing current developments in Australian education. However, in line with the main recommendations arising from the 1967 ACER research conference on the need for an effective information service, we are considering ways of extending our present procedures to broader areas of education. This will involve the adoption of more sophisticated procedures. The new librarian-in-charge, when she takes up duty in 1969, will be asked

to study this question and to recommend desirable approaches.

The role of the library both within ACER and as a service agency for some aspects of Australian education is now being re-appraised. The growing diversity of our activities suggests that we should make certain that we locate and centralize the various kinds of data produced within ACER itself—from test development, testing services and materials development, as well as from other departments and projects. The library will need to play a major part in this.

*Library**

Until this year the library has operated as a relatively independent small specialized unit of about 6,000 volumes. Its journal holdings —we take about 300 different journals—are considerable. It is being relocated within the building and reorganized, so that it can become an integral part of an information service available to staff and others. In this way the various procedures involved in cataloguing, indexing and data storage and retrieval will be steadily co-ordinated.

The general demands on the library's services increased during the year, but some pressures from outside borrowers were reduced. Loans made totalled about 4,500. More than half of these involved books while just over 1,000 took the form of tests. The latter were largely for outside borrowers while about half of the loans for books and pamphlets were made to members of ACER's staff.

During 1968 several new procedures were introduced to make the work of the library more effective. These included the displaying of journals in the library rather than maintaining the system of circulation—a system becoming more unwieldy as the number of staff members increased. Attempts have also been made to shorten the time that elapses between the arrival of material and its availability to members of staff. Their needs will prove a major determinant of how the library develops.

Review of Secondary Education in Australia

Work on this project continues. Some of the data already collected and prepared has appeared in the first three numbers of the *Quarterly Review of Australian Education*. This medium made

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* The library staff has changed somewhat during the year. Mrs Wells accepted another position in June 1968. Mrs J. Gregory has acted since March as reference librarian. She has been assisted by Mrs J. Holmes on a part-time basis.

it possible to present research done in particular areas while its content was up-to-date. The difficulties in obtaining comprehensive statistics on certain areas of Australian education and the time lapse in preparing the data so that it becomes reasonably comparable and meaningful on a state-to-state basis still remain formidable. Nevertheless the analysis of the latest documents in respect to such matters as finance, enrolments and staffing is currently being undertaken so that the whole work can be completed during 1968.

SOME STUDIES RELATED TO THE COMMONWEALTH SECONDARY SCHOLARSHIP EXAMINATION

*Follow-Up Studies**

If the purpose of the Commonwealth Secondary Scholarships scheme is to encourage able students to complete secondary schooling, then we ought to find out whether scholarship winners are regarded as 'able' using commonly accepted criteria and whether they are completing secondary schooling. Acceptable indices of ability might be success in other public examinations, success at tertiary levels, and school assessments. Such studies ought also to be comparative. We ought to know whether the probability of later success is greater for scholarship winners than for other students, and whether they are staying at school longer. In the latter case, we would like to know whether winning a scholarship has made any difference to their family's plans and perspectives.

To some of these questions it should be possible to get conclusive answers. To others an element of conjecture will apply.

A number of studies have been undertaken using the following samples:

(i) *A systematic sample of 238 Western Australian candidates from all those who sat for one-year scholarships at the 1964 examination*

Two hundred and fourteen of these 238 students sat for the Leaving Certificate examination in 1965. Eighty-six per cent of secondary scholarship holders who sat for this examination passed it, compared with 49 per cent of unsuccessful scholarship candidates. Similarly 7 per cent of scholarship winners did not sit for Leaving Certificate in 1965, as against 11 per cent of unsuccessful scholarship candidates.

* These have been supervised by Mr W. T. Renehan. Since the end of 1967 he has been assisted by Miss J. Zeidler.

Correlation between CSSE total score (Written Expression plus the best two of the other three papers) and Leaving Certificate (best five subjects) was found to be 0.50. Between individual CSSE papers and LC subjects the highest correlations were 0.59 (Humanities paper and LC English) and 0.57 (Quantitative Thinking paper and LC Mathematics A).

No data have been collected for this sample since 1965, when Leaving Certificate results for the top 713 of scholarship candidates were also collected. It should not be difficult to follow the subsequent educational progress of both these groups. This would also provide an opportunity to confirm the results of the follow-up study of Victorian students mentioned below. We hope to include this as part of follow-up studies now being planned.

(ii) *Two samples of Victorian candidates for one-year scholarships at the 1964 examination*

One of these samples consists of the first 4221 students on the order-of-merit list and hence includes all the 2750 scholarship winners. The other is a systematic sample, from all applicants for the scholarship, of 778 students. For both samples, information was obtained about 1965 and 1966 matriculation results (from schools) whether students proceeded to further studies or to full-time employment, and (from the students themselves) information about their part-time studies and information needed to complete that obtained from other sources. University results for 1966 and 1967 were obtained directly from the universities. For the systematic sample, matriculation subject marks and Commonwealth (Tertiary) Scholarship awards were noted. Information on tertiary scholarships is at present being sought about students in the larger (first 4221) sample.

For purposes of comparison, each of these samples was stratified on the basis of CSSE score level. The expected clear positive relationship between CSSE score and subsequent academic success was found. For example, of those with scores of 168 or better in the systematic samples, 83 per cent passed the matriculation examination, 62 per cent entered university, and 31 per cent have already passed university second year. By comparison, of those with scores of 141 and lower, 38 per cent passed matriculation, 14 per cent entered university and 4 per cent have passed second year.

There are 2750 students who were awarded scholarships, were able to accept them because they were proceeding to matriculation

in 1965, and who actually sat for the examination at the end of 1965. Of these 2750 students, 79 per cent passed matriculation at the end of 1965 and a further 8 per cent passed at the end of 1966, making a total of 87 per cent passing matriculation. Of the 2383 scholarship winners who passed matriculation in either of these two years, 73 per cent entered university and a further 16 per cent began other full-time studies at a teachers' college, technical college, etc. Thus at least 89 per cent of these scholarship winners who passed matriculation went on to some form of further study.

Almost 87 per cent of the 1678 scholarship winners who began full-time university courses in 1966 or 1967 passed first year. Of the 1026 who passed first year in 1966 and proceeded to second year in 1967, 86 per cent have passed that year.

A correlation study completed in 1966 showed generally lower correlations than those for the Western Australian sample. The correlation between CSSE score (Written Expression and best two other papers) and Matriculation (best three subjects) was 0.39. Some differences were found in percentages of scholarships awarded to students classified as 'science' students and those classified as 'non-science', the difference being significant and in favour of the former. Correlations between particular CSSE papers and matriculation subject marks were, with one exception, below 0.5; the exception being a correlation of 0.50 between science (CSSE) and matriculation physics.

It should be possible to complete this follow-up study at the end of 1970, in the meantime following the progress of those at university in particular.

(iii) *A sample from 13 Victorian secondary schools presenting candidates for two-year scholarships at the 1964 examinations*

These schools are, in an approximate sense only, representative of schools in Victoria.

Principals of these schools ranked the top one fourth of their candidates and also indicated which students they expected to win scholarships. Matriculation results (1966) and tertiary scholarships awarded on that examination have been noted. More detailed information is now being sought from four of these schools on performance at the 1964 Form 4 examinations, e.g. internal Intermediate Certificate examination. For these same four schools (two high schools and two independent schools) subject scores data for

both 1966 and 1967 matriculation examinations have been collected. It will be necessary to find out what has happened to these students subsequent to their attempting matriculation and to other students who left school without sitting for matriculation.

We intend to examine the Form 4 examination marks, CSSE scores, and school assessments and their relationship to subsequent academic results. Because of the manner in which the sample has been chosen it will not be possible to generalize from the results, nor will it be profitable to follow students' progress beyond entrance to tertiary studies.

(iv) *Candidates for scholarships at the 1966 examination from five 'clusters' of Melbourne schools*

A cluster of schools has been selected from each of the following metropolitan regions:

western and north-western suburbs,
north-eastern suburbs,
south-eastern and southern suburbs,
a central district,
eastern and south-eastern outskirts.

Within regions certain similarities were apparent about school retention rates, including differences in retention rates for boys and girls, and about the number of scholarships awarded, expressed as a percentage of Form 1 enrolment.

The co-operation of schools in the sample was sought to obtain information about

(a) scholarship winners,
(b) students with excellent school performance, who failed to win scholarships, and
(c) those students with unimpressive school performance, who either won or came close to winning scholarships.

During 1967 information was collected about Form 2 examination results, socio-economic status of parents, and the language background of students, the data being collected by interviewing parents and from school records. Results at the 1967 Leaving Certificate examinations and information about destination of those leaving school have since been collected. The progress of students still at school will be followed at least until the end of 1968 and probably until 1969.

We are preparing at present to interview at greater length a sub-sample of 100 students and their parents in an endeavour to

ascertain the effects of the award on levels of aspiration and on their realization.

*Reliability Study**

A study was carried out to determine the test-retest reliability for all tests, and the marker reliability for the essay scripts, of the 1966 CSSE.

Approximately 300 children in Victoria and 200 in Western Australia were selected in a systematic sample to be retested in the Quantitative paper. Similar samples were selected for retesting on the other three papers. Retesting took place six weeks after the original examination.

A questionnaire was sent to all students in the sample to find out how much discussion of the papers occurred between the CSSE and the retest.

Twelve markers marked the essay scripts. The essays were graded to an imposed percentage distribution. The best 2 per cent of essays were graded A+. The next 16 per cent were graded A, the next 16 per cent B, and so on to F. Scripts were randomized after each marking session, during which one essay script only in each paper was marked. This randomization process was continued until each essay was marked twice, each time by a different marker.

The general conclusions from the study are as follows:

(i) There was a slight improvement in mean scores from the CSSE to the retest, but this did not appear to be related to the amount of discussion of the papers that occurred between the two administrations of the test. The mean change in score was greatest for the Science paper, amounting to about 4 points of raw score.

(ii) The test-retest correlation of each of the objective papers was about 0.84.

(iii) The estimated test-retest correlation for the complete test battery (four tests) was 0.95.

(iv) On a single essay script the mean correlation of any one marker with the random group of markers who corrected those scripts on the second marking was 0.57. The range was from 0.33 to 0.82 (with one correlation at 0.19).

(v) The marker reliability for the set of four essays was 0.77.

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* This was conducted by Mr N. Wilson. In this report nothing is said about some interesting work, not yet complete, on changes in the patterns of response on particular questions or groups of questions.

(vi) The test-retest correlation for the sum of four essays was 0.60 for a single marking of each essay, and 0.69 when the two assessments for each essay at the retest were considered.

(vii) The estimated reliability of performance of students on the four essays (when corrected for the unreliability of markers) was 0.90. It is interesting to note that this is higher than the reliability of performance (which is equal to test-retest reliability) on the three multiple-choice papers.

INTERNATIONAL ASSOCIATION FOR EVALUATION OF EDUCATIONAL ACHIEVEMENT* (IEA)

The education systems of different countries have evolved under the influence of many factors: historical, philosophical, political and practical. Within any one country there will be similarities between organizational units (states, counties, local government areas and so on) because each such unit has been subject to common environmental factors. The education system of each country is therefore *relatively* homogeneous when compared to other countries influenced by different combinations of environmental factors.

The present era in education has been marked by a willingness on the part of those responsible for the administration and organization of education systems to introduce variations into historically conditioned patterns of educational practice, in order to bring about changes in educational achievement. However, because of the homogeneity of educational systems, it is often not possible to predict beforehand in what ways changes will influence achievement within a given country.

For example, a country may wish to see if it would be possible to increase the level of student achievement in secondary school by lowering the age at which students started primary school, or by altering the age at which primary students enter secondary school. These changes could be introduced experimentally into its own homogeneous system but this could be time-consuming and fraught with difficulty. Some indication of the effects, however, could be obtained by looking at educational systems in other countries that incorporated as part of their regular pattern of organization the proposed changes.

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* Mr M. Rosier has the responsibility for this project.

This type of comparison has been used often, but until relatively recently it has not been possible to incorporate quantitative results into the process of comparison. The International Association for the Evaluation of Educational Achievement (IEA) was established to help in building up appropriate quantitative data for the comparison of educational systems. Its results will provide some empirical evidence, to be included with philosophical, political and practical considerations, as the raw materials on hand when policy decisions are made about educational systems.

There is another aspect to IEA projects. Often, it is desirable to know if an experimental result investigated in one country can be generalized to all countries. The IEA projects provide an opportunity to see the results of similar experiments in many countries, and for the generalizability of the result to be examined.

For example, boys may perform better than girls in a particular cognitive area in one country. Is this due to environmental factors peculiar to the country, or is it universally true when examined over many countries in which there appear a wide range of environmental factors?

The IEA study is concerned with educational achievement in different countries having different systems of education, different environments for learning, and different values.

In order to make meaningful cross-national comparisons it is necessary therefore to have measuring instruments (tests, attitude scales and questionnaires), designed to cover a wide range of content and objectives, within which each country can find its own emphases. The process of instrument construction used in the IEA study is a collaborative one, with test construction and content experts in all participating countries sharing at all stages in the development of the instruments.

A full report on the study of achievement in mathematics, using the nations as units of analysis, was published early in 1967 by John Wiley. The Australian report referred to in the 1967 Annual Report of the ACER is being duplicated now for distribution to the five state education departments concerned in the study. It makes a number of detailed comparisons thought likely to be of special interest to curriculum officers. A briefer report, thought to be of more potential interest to a wider circle of educators, is in the final stages of preparation.

As foreshadowed in the 1967 Annual Report, ACER, as the Australian National Centre for IEA, has decided to limit its participation in the current project (Phase 2 of the Study) to science,

with a smaller emphasis on reading comprehension. The main activity in 1967/68 has been in the area of instrument construction as outlined above. This has involved the preparation of frameworks for content and teaching objectives, the submission to the international committees of suitable items for tests, and the administration, analysis and criticism of pre-tests and questionnaires.

Participation in the study even at this stage has required over considerable periods both the full-time attention of Mr Rosier and assistance from our 'technical' staff.

The following instruments were pre-tested, most of them in all states, and most of them at both Population II (14-year-old students) and Population IV (matriculation students) levels:

(a) main science tests (four sub-tests for Population II, four sub-tests for Population IV, six sub-tests for Population IV, specialists),
(b) supplementary science tests (understanding science and practical abilities),
(c) questionnaires (students—general and science; teachers—general and science, schools),
(d) attitude scales (general and science).

Full co-operation has been given by all state departments of education in this preliminary work. Both in selecting schools for pre-testing and in providing informed comment on tests and questionnaires, their help has been appreciated.

Early in 1968 we were visited by Dr N. Postlethwaite, the study's co-ordinator, from Hamburg. We were able to put a number of questions to him, express a number of doubts, and clear up a number of uncertainties and difficulties.

In September, Mr Rosier as National Technical Officer of the project attended, at IEA expense, a meeting in Hamburg to discuss questions of sampling, testing, date processing and analysis.

At present we have not made any firm commitment to proceed with the IEA science project beyond 1968. If it does, the main activity in 1969 would be a feasibility study involving about ten schools in each population as a 'judgment sample' representative of Australia. This would enable all final instruments, all administrative procedures, and all computer programmes to be checked. The main testing programme to be checked would take place in 1970, involving about 200 Australian schools in each population. The analysis of these results would then be carried out in 1971.

Now that the instruments proposed for use in the study have all been seen and appraised by the six states, we think the time

has come to ask whether the states think they can commit themselves to the more extensive and more exacting demands of the feasibility study in 1969 and the full study in 1970.

The end product of the IEA science project will be a large volume of data, Australian and international, on test performance, on descriptive survey material about schools, teachers and students, on student attitudes, and on relationships between various sets of these factors. This data will be available to educational policy makers as they plan educational practices for the next few years, especially as they apply to the increasing numbers of students with wider ranges of ability who will remain at school beyond the compulsory minimum leaving age. We think it will be useful, although we have not yet seen positive evidence of change arising out of the mathematics study.

ACER AND THE SOCIAL SCIENCES IN THE SECONDARY SCHOOLS*

In 1966 we began an initial review of that area of the junior secondary curriculum which is concerned with the study of society —including the subjects of history, geography, social studies, and commerce. The original intention was to investigate the possibilities of test development in this area. However, the review was later expanded into a major project, first to provide information requested for the Civic Education section of the IEA project, and later in order to obtain the data for a background paper to be presented to the UNESCO National Seminar on 'The Teaching of the Social Sciences in Australian Secondary Schools'.

The final study, which was carried out by Mr Bennett with the assistance of Mr Piper, involved the distribution of questionnaires to some 1800 secondary schools and the collation of the 1300 returns received together with a detailed analysis of official syllabuses in all the relevant subjects and a survey of examination papers and textbooks. The full report was presented to the seminar in August 1967.

The seminar was notable as the first attempt to consider the problems of this area at a national level. The report attempted to provide a factual background to this discussion. Participants appeared to share a dissatisfaction with the current position, and considerable interest was evident in proposals to develop an

* Mr D. M. Bennett was assisted by Mr K. Piper in the work reported here, until Mr Piper left for England early in 1968.

integrated social science course for the first three or four secondary years. There was agreement that efforts should be made to carry through a major programme of curriculum development in the area. I was among those invited at the time of the seminar to attend a meeting to plan future action, and together with Mr Bennett attended a subsequent national meeting on 26 April 1968.

Since the seminar, committees have been established in five states to investigate the possibilities of further work. All the committees include members of university staffs from various social science disciplines, in addition to others more directly concerned with the secondary school systems. An outline for a long-term national plan of development is currently being evolved, as a result of the April meeting referred to above.

The September issue of the *Quarterly Review of Australian Education*, written by Mr Bennett, was entitled 'The Study of Society in Secondary Schools'. Its purpose is to make some of the findings of the ACER survey available to a wider audience, and at the same time to make a contribution to the current discussion of the future possibilties for curriculum change.

All concerned in these developments have been conscious of certain initial needs. Firstly, those who wish to contribute need to acquaint themselves with the important overseas projects in curriculum development which have been undertaken in recent years and the growing body of related research. Indeed these materials would appear to provide the most, if not the only, satisfactory basis for an initial attack on the relevant problems.

Secondly there is an obvious need for the fullest interchange of information, both between official and unofficial groups in the various states, and between those groups and individual practising teachers who are experimenting with new ideas.

At the national meeting in April there was unanimous support for a proposal that ACER should establish and at least initially conduct a curriculum information service to fulfil these functions. In addition to acting as a general clearing house for information the service would maintain a library of materials from Australia and overseas, organize evaluations of the more interesting items, and distribute the results of these evaluations, together with summaries of research and development. However, while ACER offered to house the service and to make a contribution in terms of both staff and facilities, the offer was conditional on obtaining financial support from other sources. The national meeting decided to request

such support from the Commonwealth government. We are waiting for a reply to this request.

There appear to be real opportunities for useful work which could bring significant improvement in the study of society at secondary level. The difficulties are also considerable.

Attempts to apply the 'method of inquiry' approach to the social field—for example, those by Fenton and Bruner—appear promising, but have not yet been evaluated. Similarly, new techniques for presenting detailed material as a basis for critical thinking about social problems open up interesting possibilities. However, apart from work by Taba and others on teaching strategies at primary level, the problems involved in applying recent knowledge concerning concept development to the social subjects have not yet been faced. All these and other approaches make clear the need for the thorough analysis and careful specification of objectives, which has not yet been applied to this area.

Two points are clear. First, significant progress of any kind will depend on the development of fairly elaborate materials for use in the classroom. Secondly, the temptation to expend resources on novel ideas, either in content or method, without adequate trial and proper evaluation should be resisted.

The prospects of co-operation at the national level should be welcomed. As in so many other fields both financial and professional resources are likely to be so limited as to make such co-operation essential. At the same time, the dangers both of uniformity and of narrowing the possibilities of development by premature decisions should be recognized. A plan which involves the maximum possible number of limited experimental projects of different kinds seems to be the most desirable.

As we see it at present, development must be built on the existing system, and the fullest co-operation from all those who teach and control the established subjects will be necessary. Careful planning will be needed to overcome the traditional divisions which operate, even within one state, between the different subjects.

ACER has now had considerable experience in materials development, in addition to test construction in the humanities area, and could provide one national centre for work of the kind now contemplated. We hope that eventually we can make a contribution in this way, while at the same time fully supporting any proposal for the establishment of several such centres provided that sufficient finance becomes available. For similar reasons, if a project in which several authorities participated were based at ACER we

should wish it to be supervised by a body representative of those involved, rather than by the Council only. One possibility which has been suggested is that those states which do not feel that they have sufficient resources to mount independent projects might co-operate in such a venture.

RESEARCH ON CONCEPTUAL DEVELOPMENT*

In recent years educationists have become increasingly aware of the relevance to education of research studies of conceptual development. The most important work in this field is that of Piaget. Much of the recent research in this field has been based on or inspired by Piaget's theories of concept development.

There are two main areas in education where Piaget's theories can be or have been applied. The first is in the area of curriculum development and teaching methods, and the second is in the area of assessment.

The research on conceptual development that is presently being undertaken is concerned with the use of Piaget's techniques for purposes of assessment. Piaget's theory postulates an invariant for the development of various concepts, the understanding of any particular concept depending on the stage of intellectual development achieved. For this reason it has been suggested that Piaget's techniques could provide the basis for the construction of a natural ordinal scale of development. Such a scale would be of particular value to educationists, since it would assess the actual level of mental functioning achieved, giving some indication of the concepts the child is able to understand and those he is not able to deal with, and some insight into the characteristics of his mode of thinking. This would have considerable advantages over traditional intelligence scales, which are based only on the comparison of an individual score with a group average, and yield no further information as to the type or level of thinking, or the presence or absence of particular types of thought process.

Two programmes of research have been undertaken. The first is a study of the effects of experience and materials in a series of Piaget conservation tests. This study is concerned with certain basic theoretical problems which are relevant to the use of Piaget's tests for purposes of assessment. Previous research suggested that experience on the tests or the particular materials used may affect the invariance of the order of development postulated by Piaget.

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* This work has been undertaken by Dr M. de Lemos.

If these tests are to be used to construct a natural ordinal scale of intellectual development, a systematic study of such effects is essential.

Initial results in this study indicate that experience on the tests does lead to an improvement in performance, but differences in the materials used do not appear to have any marked effect. Discrepancies between our results and those reported by Piaget and others suggest that the method of questioning may also affect performance. An investigation of the effects of different methods of questioning will therefore also be undertaken. Work on this project is continuing.

The second programme of research undertaken involved the use of some of Piaget's tests to assess the development of certain basic concepts in length, area and volume in children taught mathematics by the Dienes' method as compared with children taught by traditional methods. Piaget's tests were chosen for this study since the concepts they investigate are assumed to underlie the child's understanding of basic mathematical notions of space and measurement. While not directly taught by either method, the development of these concepts would be important to any teaching programme.

This study is essentially exploratory. It utilizes one approach to the problem of assessing the effectiveness of different methods of teaching. If it proves successful, this approach could be extended to wider areas. The value of the approach is that it goes beyond the assessment of achievements specific to a particular teaching programme, and studies the development of concepts which are assumed to be necessary to all programmes. For this reason it is felt that this approach could make a significant contribution to studies of the effectiveness of different teaching methods in the development of basic concepts.

Testing for this project, which was carried out in Adelaide, has been completed, and a report on the results is being prepared. A preliminary examination of the findings has shown no clear-cut differences in the development of the concepts studied under different teaching methods. However, there do appear to be some tendencies and patterns of development that are more marked in one group than in the other, suggesting that the particular teaching method may have some influence on the pattern of development. Some discrepancies from the orders of development postulated by Piaget were also found.

The research being undertaken on conceptual development has

proceeded slowly. This has been due to the time-consuming nature of the individual testing and the analysis of test protocols that is required in the use of Piaget's techniques. The present rate of progress could be considerably increased if research assistance could be obtained for the routine testing and for the analysis of results.

INDIVIDUAL MATHEMATICS PROGRAMME*

The objective of the IMP in December 1964 was to develop text and assignment materials which permitted individual progress through a modern mathematics programme, based upon the outline of content which resulted from the curriculum officers' conference held at ACER in March 1964. Kit B, comprising materials for Grades 3 and 4 approximately, was published early in 1966. Preparation of Kit C to cover Grades 5 and 6 approximately is well advanced, but the material will not be available for use in schools until 1969. Work on materials for the lower grades has not started.

This has been a major undertaking, still without precedent in Australian educational publication. There was no precedent for it anywhere, so far as we know. It is therefore important now to review the reception of the initial material, the current status of the project and its future prospects. Difficulties have been encountered, both in producing Kit C and in using Kit B. However, it is of considerable significance that well over 3000 sets of Kit B have been sold to schools, at a price of $60 each, within the first two years of publication. Obviously many schools have felt or been convinced that they have need for this type of material. The reasons for this are not hard to find, for they are the same reasons which provided the motivating forces leading to the development of the programme. At the same time they may perhaps provide some of the sorts of difficulties encountered.

On the one hand there has been an increasing awareness of the need for proper handling of the individual differences between children, stemming substantially from the ACER 1962 conference on individual differences and the widespread use of SRA reading laboratories. This led a number of teachers to develop materials

* Mr Clark has given general supervision to this project. Mr J. Izard continued as full-time executive officer until the end of 1967, and he and his co-workers have continued to prepare materials since, although in full-time teaching. Miss R. Hamilton has been acting as a full-time liaison officer for the project.

in an attempt to cater for individual variations in their own classes in mathematics. On the other hand primary school mathematics curricula have undergone dramatic changes as a direct consequence of the 1964 conference of curriculum officers. These latter developments required the publication of a guide-book (*Background in Mathematics*) to assist teachers to re-orient themselves to the newer concepts, terms and processes introduced.

Thus the IMP approach was born in a climate of two 'winds of change'. As a direct result it has been introduced to schools in which many teachers are uncertain about techniques for handling individual differences, and are unfamiliar with the mathematical concepts involved.

Not wishing to restrict the individual teacher's freedom, the authors have been adamant that . . . Kit B is *not* a complete course in primary mathematics at the Grade 3 and 4 level and is *not* intended as the sole medium of instruction. However, it does provide, in conjunction with the teacher, a systematic presentation of mathematical ideas. Basic assumptions have been

(a) that competence in mathematics at this level will be achieved if understanding of key mathematical ideas is gained through appropriate experiences;
(b) that learning of the facts and relationships concerning number ideas and operations will lead to effective use of such ideas; and
(c) that the effectiveness of use will be enhanced if pupils are permitted to proceed to more complex activities after they have discovered how to handle simpler ones.

At the same time it has been made clear that

(a) these ideas will not be achieved without the creative contribution of the teacher, and
(b) responsibility for organizing the classroom to achieve the stated aims of a mathematics course rests with the teacher.

There is little doubt that Kit B has helped teachers to appreciate what the new curricula mean in terms of desirable pupil behaviour. The ideas and tasks presented have resulted from intensive consultation between authors and with state department curriculum officers. They have been tried out in classrooms before final inclusion in the programme. However, the integrated nature of the exercises has restricted the flexibility of the teacher to modify the sequence of presentation. In Kit C, the kit now being prepared, an attempt has been made to overcome this problem by orientation within topic areas. Nevertheless a key feature in the successful use of

this material will still be the teacher's 'awareness of the general dynamics of the learning process, as well as of the particular stage each child has reached. He must be aware of individual differences in ways of learning . . . (and the need for) experiences of a very diverse character, some drawn from real situations, others artificially induced by the use of varied material'.* As Dienes further points out in his foreword to *Modern Mathematics for Young Children* (Educational Supply Association Ltd, 1965), there must be emphasis on 'dynamic search-activity' to discover mathematical structures rather than the static end point of the 'answer'. This places heavy demand on the teacher who in order to use the IMP material will already be extensively involved in supervision, evaluating progress and arranging individual guidance where necessary.

Unfortunately it is known that the IMP material is being used as *the* course instead of as an aid, and that children have been introduced to the scheme in Grade 3 without sufficient mathematical background or adequate vocabulary and reading comprehension. Unquestionably it has been a weakness of the scheme that material at the lower levels has not been available. Likewise, some teachers have felt the lack of later material when children have wanted to reach beyond the scope of Kit B.

It may be that it is a mistake to publish only one phase of a programme too far ahead of other stages. Although Kit B met an urgent need at a critical stage in the development of the new mathematics programmes, it might be regarded as a mistake to put major curriculum changes into effect before there are plentiful resource materials, and before intensive teacher preparation has been undertaken. The implication is that more resources need to be devoted to preparation of teaching materials and diagnostic aids and to in-service training, if educational changes are to be implemented with minimum hardship and maximum speed.

There are important lessons to be learned from the outcomes of the model employed for the development of the IMP. In the first place Kit B started with a commendable quantity of material already available from the various authors for adaptation. The project operated with a full-time executive officer, extensive consultation with and research assistance from ACER staff and officers of the state education departments, and the part-time item writing of three

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* Dienes, Z. P., *Building of Mathematics*. Hutchinson Educational Ltd, 1960, p. 29.

authors who were otherwise fully employed during the day as classroom teachers. Under these conditions it still took about eighteen months to prepare Kit B at a cost of $9,500 apart from the printing costs. This figure included the salaries of the full-time workers and miscellanoeus expenses such as duplication. It did not include any provision for ACER overheads or consultations. All the direct expenses were met by royalty advances from the publishers.

Starting from scratch in 1966 with the same executive officer (Mr Izard) and later with a full-time research assistant in addition, five authors have been contributing to Kit C in their spare time. In February 1968, the executive officer returned to full-time teaching service but attempted to maintain overall administrative control of the project. During the two years or so in which the developmental work has proceeded, it is estimated that these people have spent some 16,000 hours at panel meetings and in producing material. Direct costs so far have been about $18,000 (excluding ACER overheads). None of the authors has received any financial remuneration.

The physical and psychological demands of operating a project of such dimensions in this way are too great. It is a tribute to the authors that they have not long ago given up. If any further development of this kind of material is to be undertaken, it must be properly funded with full-time staff available to develop teaching ideas in a more favourable climate. Teachers employed full-time in teaching could contribute ideas, *but the detailed development of sequences and of the general format for the programme requires full-time attention.*

Unless adequate funds are made available for preliminary analyses, developmental operations, and classroom evaluation of desirable materials for lower levels, it is not likely that Kit A will be produced.

SOME ASPECTS OF TEST DEVELOPMENT AT PRIMARY AND SECONDARY LEVELS*

Apart from the Tertiary Education Entrance Project already reported, recent work at ACER in the development of scholastic

* Mr B. Rechter has been acting since September 1967 as head of the Test Development Department. In addition to the staff referred to in reporting in TEEP, he has been assisted by Miss E. Watson, Mr R. Warry (reading tests) and Mr McLeod (seconded by Victorian Education Department for social studies).

tests for primary and secondary schools has been in the area of diagnostic, readiness and achievement tests in senior physics and chemistry, in reading for the primary school, and to a lesser extent in junior secondary mathematics and English. We have also prepared, since 1964, the Commonwealth Secondary Scholarship Examination (CSSE).

The response to the above tests has been gratifying. A number of public examinations in science, particularly in Victoria, have been influenced by the procedures and techniques developed in the preparation of these tests. The limited public availability of the CSSE papers has prevented the full exploitation of the potential in such tests.

Several changes in the CSSE examination have been recommended to the state authorities, including the re-division of the available eight hours of testing into five papers, a structure similar to that of the papers in the Tertiary Education Entrance Project.

The diagnostic and achievement tests in school subjects prepared so far are a small fraction of those needed. As new curricula are developed for the secondary school, we need to explore the possibility of developing tests in new subject areas. Preliminary work for example has already been undertaken for a test programme to accompany the new biology course based on the *Web of Life* textbook currently in use in Victoria, South Australia, Tasmania and Queensland. We have discussed with interested teachers and scholars in the humanities and modern languages the need for a clear expression of classroom objectives and for tests based on these.

A new course in chemistry for the pre-matriculation year is at present, we understand, under consideration by the Department of Education and Science following submissions from South Australia and Victoria. An integral part of this course will be a series of diagnostic tests in whose preparation it has been proposed that ACER should be involved.

In the primary-school area, our tests have not kept in step with the developments in curriculum, particularly in mathematics, which have taken place in recent years. In addition to the reading tests referred to above, work has begun, however, on tests in social studies and mathematics. There is a need not simply to revise and update current tests, but to undertake radical reformulation to meet new conditions. Again, as the trend throughout Australia towards more formal primary science courses grows, with clearer and more demanding objectives, we should be offering tests suitable

for classroom use as well as for more general assessment.

Because of the pressures of demand and of the need for our test development work to pay its way, we have concerned ourselves in the immediate past almost solely with the preparation of tests for sale or under contract. In the long run this is self-defeating. We need to carry out, along with test development, research on test construction problems independently of test preparation, and to make any value to education we derive from our work more widely available.

This approach to our work has led us to undertake one or two small-scale studies in written expression.

(1) In co-operation with the ABC we broadcast on 1 August last several aural stimuli for essay writing to a sample of CSSE applicants. We are now examining results from the essays received.

(2) We are also receiving essays written by a selected sample of CSSE candidates at different times during 1968. These essays will be compared with the essays written by the same students for the Written Expression paper of the CSSE examination itself.

As an experiment in assisting teachers in their problems of evaluation, Mr N. Wilson is writing a book *Objective Tests and Mathematical Learning*. If this is successful we hope it will be the forerunner of similar ventures in science and the humanites.

Much research still needs to be done on responses to the type of questions used in the CSSE papers. It would be useful to have information on the performance of students from Form 1 through to Form 6 on these questions and on how the skills and abilities tested by them develop in students as they progress through secondary school.

The form of item-analysis programme to be used for CSSE, with its blocks of questions, has been the subject of much discussion. We need more definite information on how different forms of analysis function, in particular with the kind of material used in the humanities paper and, to a lesser extent, in the science paper.

There is still another area of work where we should have a good deal of activity under way, even if it is not profitable or productive. ACER should have, and should be seen to have, expertise in a number of fields of testing and examining such as oral expression, modern languages, or history, quite apart from any definite test construction projects in these areas. We need to be aware of new overseas and local developments in educational measurement and test construction.

We need the time to write up for publication what we have

learned in the course of test construction, not only about that construction but about pupil performance and teacher reaction.

The point to be stressed is that constant pressure to construct tests can lead to real loss of expertise. Time to evaluate and appraise the activity must be given to those developing tests if the tests are to maintain the high levels of technical expertise and educational usefulness ACER should aim at.

*Primary Reading Tests**

With the secondment of Mr R. Warry from the Queensland Education Department for a period of twelve months, it has been possible to hasten the revision of the current range of ACER reading tests. We have begun the production of an integrated series of reading tests of a survey nature to cover the full range of the primary grades. Special consideration is being given to the preparation of manuals aimed at strengthening the co-ordination and continuation of a testing programme in reading, and at increasing the effective use of test results by teachers.

The present ACER Silent Reading Test Forms A, B, C and D are to be replaced by three tests, each of which is to have a parallel form. It is intended that the tests will overlap. The exact extent of this overlap will be determined from the results of trial testing, but it is probable that a lower grades test will cover later Grade 1 to early Grade 3, a middle primary test for Grades 3 and 4, and an upper primary test for Grades 4 to 6.

The Lower Grades Test will contain four sections: Form Comparison, Word Recognition, Sentence Completion and Story Comprehension. We hope to produce a scale of performance levels which will provide a useful guide in assessing the pupil's absolute rather than relative level of development of early reading skills. A descriptive labelling of these levels is intended to help teachers identify the general needs of pupils at the various stages of development. Suggestions will be given in the manual for remedial and further reading skill developmental activities. Both the Middle Primary and the Upper Primary Tests will have separate vocabulary and comprehension sub-tests. The latter will be concerned with comprehension of literal meaning and interpretation. Thus these tests will provide at primary level tests comparable with the

* The rationale for these was worked out by Mr Clark in consultation with other staff members, and the detailed work has been carried out by Mr R. Warry

Co-operative Reading Test, Forms L and M, in use with students in the lower forms of secondary schools.

*NSW Basic Skills Tests and Future Developments**

When the NSW Basic Skills Testing Programme was launched in 1962, 605 departmental schools participated and tested 120,579 pupils. In 1967, 198,299 pupils took the tests in 1642 schools and in 1968, 1676 schools will take part in the programme. Independently, 128 non-departmental schools in NSW will use the tests this year. Slightly modified forms of various tests from the project have been used also in testing programmes in New Guinea, Victoria and Tasmania, although the major usage has been in NSW.

The general objective of the project was stated in the preface to the 1962 Teachers' Handbook by the Director of Primary Education at the time, Mr O. R. Jones: 'For the first time, using a battery of tests based entirely on an approved curriculum, an attempt is being made, by a State Department of Education in close collaboration with a national education research organization to evaluate the work of schools in terms of the explicit objectives of the curriculum.' Major purposes of the project were detailed in the handbook and publicised widely among NSW teachers in an article in the *Departmental Education Gazette*.

For the classroom teacher it was to provide information about the strengths and weaknesses of each pupil so that his educative activities might be directed towards his needs. The programme was also intended to clarify the definition of curriculum objectives. For the principal the project was to provide an objective basis for cumulative records of pupil attainment and pupil growth. It was hoped that this information would complement that from other sources and that it might improve pupil guidance and communication with parents. Similarly, it was expected to provide the school counsellor with valuable information, particularly at the point of transfer to secondary school. For the administration it was intended to provide information on standards of attainment which might affect decisions on curriculum change.

To meet these objectives, two forms of overlapping tests were prepared for each of the primary Grades 3 to 6 inclusive. Each year since the inception of the programme, reading vocabulary and comprehension tests and spelling tests have been used. For the first

* Mr M. L. Clark and Mr W. T. Renehan have been concerned with the test development in this programme, and Mrs McBean with aspects of the processing of data.

three years, tests of mechanical arithmetic, problem solving and knowledge of concepts were employed. They were discontinued because of major curriculum changes. Since 1963, study skills tests embracing map reading, tables and graphs and reference materials have been in use. In 1964, listening comprehension tests were also introduced. But draft versions of several English tests were held over pending curriculum revision. Work on other knowledge tests envisaged was postponed because of rising costs of the project. An exploratory study of attitudes and habits was made in 1965.

Apart from the publication of tests restricted to use in September each year, normative data was produced immediately after the first testing with each new test as it was added to the battery. There has been a certain amount of reporting also to the department in the form of test and test-item statistics. Much of this can be regarded as the data of curriculum evaluation.

An interim report on the attitudes and habits measurement phase of the project was prepared in 1966. There has been no direct reporting on the project to teachers generally, however. It is proposed to remedy this shortcoming during 1969. Perhaps the most revealing data on the project has come from a questionnaire completed by a limited number of principals and teachers early in 1968. Although only tentative observations were possible, they were sufficient to suggest a major re-orientation of the project would be required in future years if it was to meet the general objectives indicated above.

In general, teachers seem to be favourably inclined towards the battery as an objective guide to their standards of work. They find it makes a considerable contribution towards the appraisal of individual pupils and is useful for discussions with parents. However, they seem also to have found it of little value in assessing the effectiveness of particular procedures and programmes, in fitting instruction to individual needs and in interpreting curriculum standards. Complaints have been made about the demands involved in administering and marking the tests, and about the late testing date. Both factors militate against effective use of the data obtained by the use of the tests.

Principals were most favourably inclined towards the battery as a means of obtaining objective standards with the school and for assessing pupil growth through the school. They also made some use of the data in talking to parents. But they considered that the battery had a limited value for the clarification of objec-

tives, the planning of programmes for general and remedial work, and the guidance of pupils.

At the same time there is apparently a good deal of confusion as to why schools are participating in the project. There appears to be a lack of within-school involvement where it is considered the major purpose of the programme is external. On the other hand, those schools participating with clear internal objectives have found the additional work very demanding and have not been able to realize the anticipated potential. A general claim by teachers is that there are too many tests to handle at one time and that this does not permit an intensive study of results which would permit adequate follow-up work. Furthermore, the form of the tests does not facilitate their use as a ready diagnostic test.

R. E. Stake writes, 'Discriminability among students is important for instruction and guidance, but for development and selection of curricula, tests are needed that discriminate among curricula . . . and different criteria of test development are appropriate . . .' *

This fact has become apparent to those officers concerned with using data from the project for curriculum evaluation. While the Basic Skills Project has provided data comparing achievement in 1962/63 and 1966, thus providing a potential for examining changes in standards within a given syllabus, it is thought that it cannot attempt to show change between syllabuses unless the tests have a general application to relevant syllabuses, rather than a specific orientation. If syllabus revision necessitates test revision, then test revision militates against assessing the effectiveness of the revised syllabus. In this context, it is necessary to ask how useful are syllabus-based tests for this purpose. Further, whether the widespread testing currently employed is necessary, if a relatively small sample could be used instead.

In spite of these misgivings, the preparation of the Basic Skills tests involved a close analysis of syllabus requirements by the officers concerned, and the data obtained from item analysis has highlighted some curriculum shortcomings. This has produced an awareness of the need for greater specificity in stating syllabus objectives. Nevertheless it has been difficult to determine how information gained from the project can be used with any degree of precision. It has tended to suggest direction of change rather than degree of change.

* 'Toward a Technology for the Evaluation of Educational Programs' in *Perspectives of Curriculum Evaluation,* AERA Monograph Series in Curriculum Evaluation, No. 1, 1967.

An advisory committee including both ACER and education department officers attempted early in 1968 to outline possible future development. It was generally agreed that, although various purposes might be served by the project, the greatest need was for tests to assist the classroom teacher in gauging the child's stage of development in terms of a syllabus. Priority has been given to the development of tests in mathematics for this purpose by February 1970 or earlier. At the same time, it is proposed to give careful consideration to the administrator's need for curriculum evaluation. Further, it is proposed that, within the scope of the available format, work should proceed on tests or other objective means for measuring level of skills in using the English language. Likewise, the research into measurement of attitudes and habits will be carried a stage further. In addition, a feasibility study of machine scoring has been launched.

The future of this project will depend on what comes out of these latter activities within the next twelve months or so.

*Developments and Innovations in Psychological Testing**

The year has seen considerable development in the field of psychological test activities. These can be divided into separate areas but a general set of underlying principles has been followed.

Firstly, it has been seen as important to limit contract test writing to lower-level and middle-level general ability tests. We have concluded that our policy should be that we should retain more of our test writing for our own use in testing service batteries, with less 'sold out' with limited total return and with no continuity or follow-up.

Secondly, the aim of widening the range of original psychological test material available to Australian users has led us to undertake the publication of a series of Australian tests. This has involved the development of some associated research projects in collaboration with the authors. The topics range from the measurement of general ability in handicapped children to diagnostic observation schedules in kindergartens.

Thirdly, the need to make clearer to users the availability and use of selection materials in business and industry has led to the production of a separate catalogue of tests and to the provision

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* Mr D. M. Bruce is in charge of this work, and has been assisted by Mrs J. Williams and Mrs A. Lamb (part-time). Miss Rosh has recently been appointed to assist with the preparation of general ability and attitude tests.

of a service in this area. Although many of the inquiries made to us have been straightforward requests for suitable materials coming from private firms and government departments, some applied research projects have developed in which we are assuming a co-ordinating and consultative role. The most promising of these this year has involved development of vocational training and aptitude measurement for patients who attend rehabilitation centres. Development in these areas will not only benefit the handicapped but will also fit us to anticipate community needs as increasing automation makes it necessary for more people to seek new vocational training as adults who have already had one job.

Fourthly, the urgent need for Australian norms for all major tests has led to the institution of a continuous norming project in which we collect data from all over the country, process it and distribute the result. A major norming of WISC is well in hand. Actual testing by ACER will be undertaken to complete gaps in samples derived elsewhere.

An increasing programme of personal contacts with centres of psychological activity throughout the country has produced new material and many ideas about needed activity. Some of the new materials which we are publishing are:

Stamp Behaviour Study Technique—an observational schedule for use in kindergartens, now being introduced throughout the country (see page 90).

Anderson-Western Attitude Inventory—the first Australian attitude measure, used with tertiary students (see page 92).

Pacific Test Series—a group of tests developed by Ord in TPNG which are widely used for educational selection.

Naylor-Harwood Intelligence Scale—an individual intelligence test of the same pattern as WAIS but totally original.

Queensland Test—an individual intelligence test, totally 'performance' and suitable for deaf as well as hearing subjects.

Apart from the above, a series of general ability tests have been produced for the Commonwealth Public Service Board, Commonwealth Bank and scholarship testing service programmes.

The basic aim is to serve as an information and co-ordinating development and publication centre for research, development and publication in the field of psychological assessment in Australia and territories. Our renewed activity in this field this year appears to have been welcomed. ACER seems to be accepted as a most suitable body to effect such a service.

There is still much to be done in the development and use of

psychological test materials for use by school counsellors and school psychologists, as well as by suitably trained teachers. More Australian psychologists appear to be turning their attention to instruments for assessing important personal attributes other than 'intelligence', while at the same time the need for a wider range of assessing instruments is being felt by practitioners. There is prospect here of extensive future development in which it will be important not to lose sight of the needs that teachers have for assessing interests and attitudes.

TESTING SERVICES: CURRENT OPERATIONS*

NSW Basic Skills Testing Project

This year an experiment is being conducted, in conjunction with the Department of Education in NSW, in the use of an IBM 1232 Optical Page Reader to machine-score answer sheets from a sample of 100 schools. Catholic schools in the Wagga diocese are participating in a similar experiment.

Victorian Primary Schools Testing Programme

Testing is being held over until 1969, pending the development of tests in social studies.

Commonwealth Secondary Scholarships Examination

To reduce further the effect of a particular marker on the score of any one candidate, all essays will be marked twice this year. Hence eight different markers will mark part of each candidate's script. Essays will be allotted to 150 markers in random samples, which will permit the daily application of a test to determine whether a marker's set of marks differs significantly from a specified distribution.

The answer sheets for the other three tests are being transferred to punched card by an IBM 1232 Optical Page Reader installed at the NSW Department of Education's ADP Branch.

Co-operative Scholarship Testing Programme

Ninety schools propose using this programme in 1968. The setting up of established centres has reduced the need in some states to make special arrangements for country candidates.

Tertiary Education Entrance Project

Printing for this project was carried out at the Commonwealth

* Mr W. T. Renehan is responsible for these, and is assisted by Mrs N. McBean and Miss J. Simpson.

Government Printing Office, Canberra. Arrangements have yet to be made to process results.

Victorian Secondary School Science Programmes

The Victorian Leaving Physics programme was introduced on a full scale in 1966 and the Matriculation Physics programme in 1967. In 1968 the Matriculation Chemistry programme of diagnostic and achievement tests, similar in principle to the physics programmes, has been made available and has been well received.

TESTING SERVICES: SOME PROSPECTIVE AND PROJECTED DEVELOPMENTS

Educational Testing Services

(a) *Entrance to tertiary education*

The Tertiary Education Entrance Project (TEEP), if its approach were generally adopted, would provide a source of tertiary education entrance data which might also be used by educational institutions other than universities. There is limited but regular inquiry for this sort of programme from other tertiary institutions and particularly from technical colleges.

It might therefore become desirable before long to set up standardized data-processing and reporting procedures. The use of tests of this kind raises the question of the control of the procedures. If it were intended to avoid developing new tests each year, then the question of test security, as it affects storage, distribution and collection, would need careful thought. If such developments in the use of the tests took place, ACER could be expected to exercise all these functions.

(b) *Primary school testing programmes*

Reference has already been made to proposed developments in primary schools testing. There is a need to provide teachers with a wide range of tests for use in classrooms for appraisal purposes. Some of these will not need normative data, since they will be used to establish whether or not pupils have a minimum competence in a particular skill, topic or item in a sequence of tasks. What is wanted is diagnostic rather than normative data. However, there will probably be a need for normative data at particular points in a child's school life. We should be giving more attention to what teachers need and how we might best satisfy these needs. One of the possible functions of an expanded advisory service could be to undertake such a detailed inquiry. There is probably

much more that could and should be done to provide a systematic service to teachers to help them evaluate their work both within their classroom and relative to the performance of other children in like and unlike environments.

Apart from providing more and better tests, we may find it highly desirable to provide a machine-scored testing service, using a comprehensive range of tests and supplying both diagnostic and normative data to teachers, schools and systems. With materials already available in the Basic Skills Tests, with additions now being prepared or about to be prepared, and with suitable overseas tests, we could well begin such a service withing twelve months, using outside computer facilities.

Psychological Testing Services

As noted earlier, it has been thought best to curtail contract development of higher-level general ability tests. However, there is an increasing demand for selection material at this level. It has therefore been projected that an extensive battery of general ability tests be prepared and that they be retained by ACER to form the basis of a testing service. This will be administered and kept up to date by us, and a register of users and of those tested will be maintained. At present, the range of potential users includes tertiary colleges whose students do not come straight from school, government departments and private firms. General ability tests are being prepared to meet present needs, but it is hoped to extend the service to include other psychological tests.

ADVISORY SERVICES*

Advisory services staff have received an increasing number of inquiries on a wide variety of topics during the year. Apart from those received from teachers in all kinds of schools, the number of inquiries from parents on the adjustment and progress of their children, the majority referred by head teachers, reflects the extent to which ACER is regarded as a major source of advice and information.

During the absence of Miss O'Donnell, at present overseas on a Churchill Fellowship, some of the advertising activities of Advisory Services, such as the preparation of Advisory Service Bulletins, have been necessarily curtailed in order to keep abreast of correspondence and visitors. However, all requests for displays

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* In Miss O'Donnell's absence, Mrs D. M. Bradshaw is acting as Senior Advisory Officer. Mrs M. Locke assists her.

have so far been met. There has been a change in emphasis, in general, in these displays. Requests have tended to be more specific, with a bias towards diagnostic materials and materials relevant to measurement and evaluation.

Staff have attended teachers' college post-college courses in Wagga and Sydney. Addresses have been given at meetings of Institutes for Educational Research in Tasmania and Victoria (Glenelg branch). Talks on services provided by ACER and materials available have been given at teachers' colleges in Perth and Tasmania, while groups of teachers' college students in Melbourne have visited ACER for similar purposes.

Displays have also been arranged for the annual conference of the Australian Psychological Society, for a seminar on testing at Ballarat and one at Geelong, for a conference of the Association of Remedial Teachers, a conference on mathematics at University High School, a conference of teachers in the Broadmeadows Inspectorate, a conference of Catholic schools and an in-service training course in remedial teaching in South Australia. Staff have attended the majority of these either to speak on ACER services or to answer questions. A permanent display centre in Perth has been added to those already existing, and material has been provided for a permanent demonstration centre for use in in-service courses in remedial teaching in Victoria.

Visitors to ACER, for whom a programme was arranged, have included school inspectors and senior teachers from various parts of Africa, Fiji and the Philippines. Groups of psychologists from the Victorian Psychology and Guidance Branch, and Cadet Vocational Guidance Officers from the Department of Labour and National Service, have also visited ACER.

In addition to these activities, advisory service staff have produced various test leaflets and two issues of the ACER Bulletin for Psychologists. There has been considerable feedback in the form of substantial demand for materials described in the bulletin and in contributions from Australian psychologists.

A major problem for the advisory service staff is the increasing commitment to the handling of individual inquiries, which has so far prevented the production of advisory bulletins which might be used not only to answer many of the individual problems raised, but more generally to reach a wider audience. It is very apparent from the wide variety of queries received that a major contribution could be made by the publication of practical guidelines on such topics as 'appraising readiness for formal work'), 'diagnosis of

reading difficulties', or 'organizing to cater for individual differences in mathematics'. Evaluations of new materials could be published, and information provided concerning recent developments of potential concern to the classroom teacher.

To achieve these objectives the unit would need to be conceived of rather as an evaluation and advisory service bureau. This does not necessarily imply that the advisory staff would be responsible for evaluation, but that it should act in a co-ordinating capacity and take responsibility for producing information bulletins at frequent intervals. A substantial addition to resources would be required to employ additional staff and to publish a wider range of bulletins. This is likely to be reimbursed by an increasing demand for suitable materials which as a consequence of favourable evaluation we might choose to add to stock by way of trade purchase or adaptation.

TRADING OPERATIONS*

Income from tests, books and materials sold in the financial year 1967-68 amounted to $322,000. This was almost 20 per cent higher than the July 1967 estimates in which a 10 per cent increase over the previous year's trading was forecast. A substantial portion of this additional income was derived from the WA Reading Development Scheme. However, it must be noted that book sales have also increased about 50 per cent. This may be attributed in part to more effective publicity and consequential increases in trade sales. The appointment of Lawrence Verry Inc. of Connecticut as our USA distributor for ACER books has also contributed to the increased sales.

Some salient features about the items sold during the year require serious consideration. WARDS, IMP and the Stott Programmed Reading Kit contributed approximately 20 per cent of the total gross profit from trading, with the lion's share coming from the former. This points to the desirability of ACER publishing materials rather than accepting royalty arrangements with other publishers. Increased margins would contribute to meeting developmental costs. (This does not necessarily mean that proceeds from ACER publication would meet all of these costs.) Alternatively, if development of materials were funded by special grants, ACER publication

* Mr M. Clark gives general supervision to these operations. The day-to-day work of sales and distribution is in charge of Mr E. McIlroy.

could enable lower selling prices to be charged and thus bring a real saving to schools.

These three publications and nine other items provided over 50 per cent of our gross trading profit. A large proportion of this revenue derived from the Wechsler Intelligence Scale for Children, the Wechsler Adult Intelligence Scale and the Revised Stanford-Binet Intelligence Scale (L and M). The remaining items in this list were ACER Intermediate Test D, ACER Junior B, ACER Reading Tests A and C, and ACER Arithmetic Test C. A large number of these tests were purchased by the NSW Department of Education Guidance and Adjustment Branch. It is clearly important that these tests should adequately meet the needs of this department and other users.

A further twenty-five tests provide another 25 per cent of our gross trading profit. Most of these are ACER General Ability (Group) Tests. The remaining 25 per cent of gross profits come from the balance of the 181 tests and materials (which amount to some 700 individual components) appearing in our catalogues. A substantial number of these tests are available only to qualified psychologists. This emphasizes that to maintain a service to test users it is necessary to provide a wide range of tests which contribute relatively little to our total income. It is also apparent that there is relatively little demand for achievement and diagnostic test materials other than those mentioned above. Either those held in stock are not seen as adequate, or there are gaps in our inventory. Perhaps both factors operate. The figures suggest that time should be given to a careful exploration of these questions, and, where necessary, research and developmental work undertaken. Otherwise it cannot be said that we are providing sufficient useful measurement materials.

As in 1966-67, a proportion of accounting and publishing staff costs and all of the advisory service costs have been met out of the trading operation. A good deal of the advisory service provided does not directly produce sales income. If this situation continues it may be desirable to separate the sales and the advisory service functions. The latter would then become at least in part a charge against the 'non-trading' section of our total commitment. There may be advantages in a sharper separation than at present of our trading operations from our other operations. This could enable us to separate more easily our various financial and functional responsibilities.

PUBLICATIONS*

Summary

The volume of publication rose again in 1967-68, though not quite so dramatically as in the previous year. It is in the area of new tests for stock that the rise has been most marked. Last year eighty-one new items were published in the test field compared with seventeen in 1966-67.

The number of reprints remained close to the previous year's level. The only notable difference was in books, with ten titles reprinted to last year's four. There has been a gratifying improvement in ACER book sales over the past two years.

We are continuing to make our publications known in a variety of ways. The chief avenues are the 'press' and journals of various kinds (though predominantly educational), and publicity leaflets and brochures mailed to educationists on our mailing lists or to specially selected individuals. This trend must continue as the range of ACER publications expands. It is one thing to have worthwhile tests and books on our lists: it is another to see that they are widely and well used.

ACER books were displayed at the following exhibitions: the 1967 International Book Production Exhibition, organized by the National Book League, London; the Frankfurt Book Fair; Australian Book Week; the 16th International Council of Social Welfare, Helsinki. Some of our recent psychological tests were sent to the 16th International Congress of Applied Psychology, Amsterdam, which was attended by some 2000 participants.

We are now co-operating with the National Library, Canberra, and the Library of Congress, Washington, in pre-publication cataloguing of our books. On the verso of the book's title page appear registry numbers assigned by both libraries; then the book is catalogued as early as possible. In Australia at least, pre-publication cataloguing can be achieved from the printed but unbound copy of the book sent to Canberra before publication date. There are certain advantages for the publisher and the national libraries in such a scheme. Among them is prompt advertising to scholars, researchers, librarians and booksellers through *Australian National Bibliography* and *National Union Catalog.*

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* Mr I. Fraser is responsible for the ACER's publishing. He is assisted by Mrs S. McComb and Mrs L. Botham.

Books

New Methods and Materials in Spelling by D. M. Bennett

ACER Research Series No. 82. The author subjects the traditional and the new in spelling to a critical examination, and appraises a range of spelling lists, materials, programmes and techniques. His analysis provides a firm foundation for teachers and administrators in their evaluation of spelling aids and methods, and for those who are adapting or developing their own systems. Although published first only in December 1967, the book has already been reprinted.

Music in Australian Schools by Graham Bartle

ACER Research Series No. 83. This book is a sequel to Horner's *Music Education: The Background of Research and Opinion,* published by ACER in 1965. Graham Bartle has taken Horner's part of the survey some steps further. He has looked into actual teaching practices in our schools, primary and secondary, government and private; and has rounded off his work with two valuable sections—one on the training of music teachers, and the other on what should be done to improve the status and quality of school music.

Measurement and Evaluation in the Secondary School by S. S. Dunn

Monographs on Secondary Education No. 3. The purpose of the monograph is to introduce measurement and evaluation to the classroom teacher—not as a formal text in a training course but as a means of enabling teachers to see testing problems in clearer perspective. There are four major topics: the importance of measurement and evaluation in secondary education; the development and use of formal examinations; other forms of measuring; the use of information from tests.

Each One Is Different (revised edition) by G. W. Bassett

For its second printing since it first came out in 1964, *Each One* underwent some revisions. Two of the important appendices were brought up-to-date: Appendix 3, by R. W. McCulloch, in which he discusses systems of pupil grouping and research on pupil grouping; and Appendix 5, which contains descriptions of classroom materials helpful to individual instruction. The materials included are grouped under six headings: Reading, Spelling, Composition, Social Studies, Mathematics, Science.

Directory of Philanthropic Trust in Australia compiled by E. K. Hart

This is the first Australian index of those trusts and foundations offering financial support for educational, social, charitable and religious purposes. It includes a single-page entry on each trust describing its functions, grants, address, publications, procedure for application. Entries are given for 226 trusts.

Teaching of Foreign Languages in Australia by Olive Wykes and M. G. King

ACER Research Series No. 84. The authors report on the incidence of foreign-language teaching in Australian schools, and on the factors causing secondary students to begin, continue or discontinue language study. First controlled study of its kind in Australia, involving the analysis of a complete school generation in all states.

Research into Education: Improving Its Value to the Practice of Education by various contributors

This was a limited-distribution publication, which contained a selection of the papers presented at the ACER Research Conference held in May 1967.

Tests

Physics Readiness Diagnostic Tests by the Faculty of Education, Monash University, and ACER staff

These are intended for use in the year before matriculation. There are five physics tests and one mathematics test in the series —each with its matching answer sheet, score key and diagnostic aid. The tests and aids are intended to appraise a student's readiness for a physics topic.

Stamp Behaviour Study Technique (BST) by Isla M. Stamp

The BST consists of three items: questionnaire, teacher's guide, and psychologist's monograph (the latter not yet in print). The questionnaire is based on a carefully evolved description of the characteristics of mental health in normal children, and can be used with pre-school and infant-school children. Teachers appear to find the BST a useful record of children's behavioural status and progress, and a guide to their teaching practice. The psychologist may then apply scoring criteria to the teacher's observations to attain an evaluative result.

Wechsler Intelligence Scale for Children, Australian revision by J. A. Radcliffe and F. E. Trainer

The Australian revision of WISC has involved considerable alteration to the verbal sub-tests but little to the performance sub-tests. A new manual and eight-page record form have been published. However, the six-page edition of the form has been kept in print; this will allow users of the old WISC to continue with it until the current standardization, using the new WISC, is complete.

ACER Diagnostic Chemistry Tests by ACER staff and a panel of authors.

This series of nine tests at matriculation level consists of eight diagnostic tests—to be administered during the year when the relevant sections of the course have been studied—and an achievement test, which covers the course as a whole. The diagnostic tests are made more valuable by the inclusion of diagnostic aids in the series.

Queensland Physics Tests, Year 1, by ACER staff and a panel of authors

These are special adaptations of the Victorian Leaving and Matriculation Physics Tests, to be used in conjunction with PSSC physics in Queensland schools. The test topics are relevant to particular chapters in the PSSC text. There are eight diagnostic tests, with relevant diagnostic aids, and one achievement test.

Project SENG, Tests 1 and 2, by the Faculty of Education, Monash University

The two SENG tests were specially published for the Faculty, and were used in a research project in physics in New Guinea. The questions in the tests became the basis of the Physics Readiness Diagnostic Tests already referred to.

Co-operative Scholarship Testing Programme 1967: English Tests, Levels 1 and 2; Composition Test, Levels 1 and 2, by ACER staff

New English and Composition Tests were published for use in the programme.

WA Leaving English Test by ACER staff

Another comprehension test was printed for use in the Leaving Certificate examination conducted by the WA Public Examinations Board. The test is divided into two parts: vocabulary, and general comprehension.

Victorian Primary Schools Testing Programme 1967: Tests E3 and E4 by ACER staff

Test E3 (Grammar and Sentence Structure) and Test E4 (Vocabulary) were published. Test E3 is a measure of the pupil's ability to select correct usage, including correct forms of verbs, conjunctions and contraction. It also requires pupils to arrange phrases and clauses of sentences in correct order. Test E4 covers not only word meanings but also the appropriateness of words used in context.

ACER Advanced Test N: Manual by ACER staff

The April reprint of the manual took in up-dated norms for use with this higher-level general ability test, whose range is students (over 15 years) attending secondary or tertiary institutions.

DAT Abstract Reasoning Test: Form A, New Guinea adaptation

By arrangement with the Psychological Corporation, New York, we printed a special version of this test for use in New Guinea. The test assesses the student's power to understand and apply ideas expressed in non-verbal, non-pictorial diagrams.

Pacific Test Series by, or adapted by, I. G. Ord

All eight tests in the series are now in print: Reading Comprehension, Forms A, B and L; Reasoning, Forms A, B and C; Word Formation; and Word Knowledge. We expect these to be useful in newly developing communities. The tests were originally prepared for use in New Guinea.

Pacific Design Construction Test by I. G. Ord

This test, due for release later this year, is essentially a combination of Koh's and Wechsler's Blocks using tiles and trays. It is part of the New Guinea Performance Scale and appears, slightly varied, as a sub-test of the Queensland Test. It shows a high validity as a quick individual performance test for screening in situations where language may present some problem.

Study of Professional Education: Attitude Inventory by D. S. Anderson and J. S. Western

The inventory is designed to measure the attitudes of students on a series of dimensions. It provides a means of studying basic patterns of student attitudes and of following the changes which occur during training. SOPE is particularly suited to longitudinal studies of students during courses at teachers' colleges, universities, etc.

Motivation Analysis Test: Answer Sheet and Dynamic Structure Profile by R. B. Cattell and others

Australian printings of these two IPAT items were introduced because of local demand. MAT provides measures of 10 of the clinically most useful among the 20 or so dynamic factors so far found to be representative in a comprehensive coverage of adult motivation.

Periodicals

Quarterly Review of Australian Education, editor R. T. Fitzgerald

All four numbers in Volume 1 were published. They were:

No. 1 Sept. 1967 Investment in Education: A Survey of Recent Trends in Expenditure

No. 2 Dec. 1967 The New Secondary School Population in Australia: Trends in Student Retention

No. 3 March 1968 Secondary Schools in the Sixties: Framework and Organization

No. 4 June 1968 Pre-School Education in Australia

Chronicle of Australian Education, editor R. T. Fitzgerald

The *Chronicle* was launched in June, and will be published monthly except in January and February each year. It is a selective listing of recent developments (covering the events of the previous month) in Australian education, using statements and reports from daily newspapers, parliamentary debates and other sources.

Bulletin for Psychologists, editor D. Bradshaw

Numbers 7 and 8 were published—in August 1967 and February 1968, respectively. Both conveyed useful information about new psychological tests and materials, and included special project reports concerning the use of particular tests.

Australian Education Index, editor F. McPherson

Volume 10 was an experimental year for the *Index*. Three numbers were printed instead of four, the third being a cumulative number for the whole volume. Two changes in format were made —to conform with international standards, the dimensions were altered to 250 x 176 mm. (the B5 paper size), and a full-across entry style was introduced instead of the previous two-column layout. Indexing became more selective, to compensate for the great increase in writing about education; and more notes were used to distinguish articles of significance.

Australian Journal of Education

The current printing order for *AJE* is just short of 4,500. The steady increase in the number of subscribers has enabled us to absorb some of the increased costs of printing and distribution, but it was necessary to increase the subscription to $3.20 per volume of three numbers. Each number has, however, been increased to 112 pages.

Of the subscribers, about two thirds are members of either both the Australian College of Education and an Institute for Educational Research; or students, receiving the journal at a special rate.

The first number of Volume 12 (March 1968) was devoted to New Guinea, and earned a number of favourable comments.

The Council owes a great deal to Professor Connell as editor of the journal, and to his associates of the editorial group. Selection of a balanced set of papers from the considerable numbers now being offered is not an easy task.

Information Bulletins and Memoranda

One title in each of the two series was brought out.

Factors Affecting the Educability of Children by H. Philp

Information Bulletin No. 1 1968: Series No. 49. This was a paper originally prepared by Professor Philp for the 1967 ACER Research Conference. He discusses many different variables which affect or determine educability—some common to all children in all societies, some peculiar to certain regions or cultures.

Report on 1966 Victorian Primary Schools Testing Programme by W. T. Renehan and E. Watson

Memorandum No. 2 1967: Series No. 8. This was a limited-edition printing for restricted distribution, reporting results obtained from the 1966 Victorian Primary Schools Testing Programme.

Reprints

The following books were reprinted during the 1967-68 year:

1. *Study Type of Reading Exercises* by R. Strang
2. *Books for the Retarded Reader* by J. A. Richardson and J. A. Hart
3. *Reading Aids through the Grades* (twice) by D. H. Russell and E. E. Karp
4. *An Australian School at Work* by K. S. Cunningham and D. J. Ross
5. *Emergent Needs in Australian Education* by R. W. B. Jackson

6. *Music Education: The Background of Research and Opinion* by V. Horner
7. *Listening Aids through the Grades* by D. H. and E. F. Russell
8. *Foundations of Secondary Education* (revised edition) by W. F. Connell
9. *New Methods and Materials in Spelling* by D. M. Bennett

To maintain stocks of items other than books, a total of 192 items were reprinted. These were separate from the reprint requirements of our testing programmes.

STAFF

Dr M. L. Turner received his D.Ed. in February 1968 from the University of California at Berkeley. His thesis title was 'The Learning of Symmetry Principles and Their Transfer to Tests of Spatial Ability'.

Dr M. M. de Lemos was awarded a postgraduate fellowship by the Australian National University, and proposes to spend 1969 at Geneva, in UK, and in USA, pursuing her interest and studies in concept development.

Mr T. Whitford and Mr G. Gosling are taking their study leave and have been given extended leave, to take up higher degree studies respectively at Stanford and Manchester Universities. Mr Whitford is pursuing interests in the definition and evaluation of objectives in curriculum building, and Mr Gosling in examining in English.

During the year Mr J. Newby completed his term of secondment to work on the Study Skills project and returned to Western Australia, and Mr J. Izard, after three years secondment to work on the Individual Mathematics Project, returned to the Victorian Education Department.

Mr K. Piper resigned in December 1967 to go to England. His place was filled by the appointment of Mr R. Wilkes as a research officer.

Miss J. Maling, who had been seconded from the Victorian Education Department, resigned from that department in May, but accepted an appointment as research officer with us, concerned with test development.

Mr R. Warry was seconded from the Queensland Education Department for twelve months and began duties in January 1968. We are providing him, during this time, with experience in test

development and materials development, as well as in the broader field of information on Australian education.

Mrs J. Williams, an Australian who had two years of experience in England in test development at NFER, joined the staff in March 1968 for a temporary assignment in psychological test development and materials development. Mrs A. Lamb has assisted on a part-time basis in testing children for the WISC standardization.

In October 1967 Miss J. Zeidler accepted a temporary appointment to assist in follow-up studies of the CSSE and in similar studies. She took up some of the work begun by Mrs McCallin in May of 1967, after Mrs McCallin took up another appointment in September 1967.

Mr T. E. Noble joined the staff in August 1968 to assist with research into the CSSE, both with follow-up studies and with more technical studies on the examination.

Mrs D. Wells resigned as librarian in June. Mrs Gregory carried on duties as reference librarian until her resignation in August. Mrs Brown was appointed as librarian in August, and will take responsibility for the reorganized library in January 1969.

To assist in the reorganization Mrs J. Holmes was appointed in March 1968, Mrs M. Jennings in August 1968, and Mrs M. Heggen in July 1968—all on a part-time basis. Mrs W. Williams was appointed in July 1967, on a part-time basis, to prepare material for the *Chronicle of Australian Education,* and the abstracting service.

Miss P. Staurenghi was on long-service leave from April to October. Mrs H. Nixon was appointed in April to carry on her duties as accountant.

Miss M. O'Donnell was awarded a Winston Churchill Fellowship in 1967, and used it in association with her study leave between March and October 1968 in order to study, in USA and UK, procedures used to introduce teachers to innovations and changes, and to inform them of the availablity and use of new tests and materials. Mrs G. D. Bradshaw took up full-time duties in February as an advisory services officer, instead of part-time.

The JSSP staff saw a number of changes. Mrs Beaumont and Mrs Tulloh ended their temporary appointments at the end of 1967 and Mrs Palmer and Mr Moritz accepted similar appointments.

Mr B. Wise and Mr B. Horne joined the staff, on leave from Swinburne and Geelong Institute of Technology respectively, to undertake our study of teaching and learning in colleges of advanced education.

Mrs Wright left and Miss R. Hamilton joined the team engaged in producing Kit C of the Individual Mathematics Project.

Miss M. George, Mrs J. Little and Mrs J. Lublin joined the staff in March and April 1968 to assist with TEEP.

In March 1968 Mr E. Hart completed his twelve-month assignment to prepare a directory of philanthropic trusts, and returned to legal duties.

There were a number of changes in office, technical, sales and distribution staff. Mrs J. Turnbull took charge of the office during the year, and Mrs J. Russell now fills the senior position in sales.

STAFF TRAVEL AND PROFESSIONAL COMMITMENT

Members of the staff have as usual played a part in a number of professional associations, been called on to speak at a number of meetings, and acted as consultants to particular groups. Dr Turner, for example, was invited to join the Council of the Victorian Occupational Therapy School, and to join a special committee of the University of Melbourne Residential Colleges which is devising a new scholarship selection scheme.

I have encouraged more travel by staff this year, believing that this kind of direct liaison is very fruitful. All states have been visited at one time or another.

DIRECTOR'S OUTSIDE COMMITMENTS

My outside commitments during this year have been principally concerned with work in association with the committee planning the seminar on educational planning held in Canberra from 7-22 September, and with part-time membership of the Australian Broadcasting Control Board. Membership of the Council and the Executive of the Australian College of Education has also called for a considerable expenditure of time. Other commitments such as the regular meeting of the UNESCO Advisory Committee on Education, and the Winston Churchill Memorial Trust Committee in Victoria, have been relatively small ones. One particular non-recurring task of considerable interest was the prior preparation of a background paper for the Duke of Edinburgh's Study Conference, and later involvement with the initial and final meetings of the education and training group of that conference.

RESEARCH IN AUSTRALIA - A SURVEY

As a result of discussions following the 1967 Fink Memorial Lecture given by Sir Hugh Ennor in Melbourne, a meeting was

convened at ACER at the time of the 1968 May conference of the Australian College of Education. It was attended by Professors Dunn and Pratt, and Messrs Verco, Berkeley, McCulloch and me, and apologies received from Professor Sanders and Messrs Russell and Hughes. The meeting resolved that before a submission could be submitted to the Commonwealth about the future development of research in education, a number of things should be done:

1. The current position should be ascertained, and in particular such matters as
   (a) the numbers doing higher degree work in universities;
   (b) the topics under study;
   (c) the amount of money being spent and its origin;
   (d) factors preventing progress and expansion;
   (e) procedures for disseminating information;
   (f) the numbers of staff members engaged in research, in education departments and university departments of education, and elsewhere.
2. If possible, this should be done by personal visit and discussion preferably by a person experienced in research and its administration.
3. When the information was collected and examined, and a report prepared on it, those involved in the meeting referred to above should consider the report and decide whether, after modification if necessary:
   (a) it could be sent directly to the Commonwealth;
   (b) it should be discussed and amended if necessary by a bigger group, perhaps representing all parties concerned with research.

Because of proposals before it for the establishment of an education foundation, part of the functions of which could be to support research, the Australian College of Education has expressed an interest in discussing with the above-named group the results of its initial deliberations on the report to be prepared, before such a report is forwarded to the Commonwealth. It appears that this is what will be done.

Meanwhile because it has not been possible to find a suitable person to undertake the survey who could be freed for the purpose, I have circulated and had returned from all the education departments and nearly all the university departments of education a pro forma seeking information along the lines set out in 1 above. More information will need to be collected before a full report can be prepared.

PROFESSOR R. FREEMAN BUTTS

Negotiations had been almost completed for a second visit to Australia by Professor R. Freeman Butts. The plan was for him to combine in 1969 a report for ACER along the lines of his 1955 book, with a role as visiting professorial fellow for Monash University. His name had been approved to go forward to USA from the Australian-American Foundation, when circumstances related to the African programme of Teachers' College, Columbia, and other plans with that college made it impossible for Professor Butts to leave his post in 1969. We do not know whether he will be able to arrange for the proposed visit in 1970 or later.

APPLICATIONS FOR POSITIONS FROM AUSTRALIA AND OTHER COUNTRIES

There have been a small number of inquiries and applications made to us during the year for professional positions by graduates of Australian and overseas universities. Many are teachers in schools and in tertiary institutions, and some have had good recent training in psychological and educational research. Some have had basic professional training in these and other disciplines, without specific training in research.

Although few in number still, such inquiries appear to be increasing. They could, if facilities were available, be a useful supplement to the Australians now being recruited for research.

ACCOMMODATION

We moved into our Frederick Street offices in July 1963. Our expectation then was that they would provide room for growth for another decade. The offices are already nearly full, and staff are accommodated in three other locations. It is clear that even the conjunction of Wakefield Street and Frederick Street sites will not provide expansion room for more than a limited time.

At the end of the financial year we owed only $6,000 on the Frederick Street building, having cleared $54,000 of the $60,000 term-loan in the previous five years. On the two houses in Wakefield Street we owed $14,000. This debt with interest must be paid off by 1970. One of the two has been in use as office quarters since the beginning of 1967, and has proved a satisfactory centre for the JSSP team.

During the year we made minor improvements and renovations to our premises, and an increasing amount of maintenance is now necessary.

In order to accommodate the staff of the Test Development Department, expanded in particular because of the work to be done for the Tertiary Education Entrance Project, we have taken a three-year lease of about 2,500 square feet of office space in a nearby building and moved all the department there, together with our clerical and technical staff. We have taken the opportunity created by this move to reorganize library accommodation in Frederick Street and to remove into an archives section a considerable amount of relatively unused but potentially useful historical material, as well as back numbers of many important journals.

FINANCE

Grants

Following the discussion on Council finance at the last Annual Meeting, the question of grants to the Council was raised at the meeting in September 1967 of the Directors-General of Education. As a result, the President and I were invited to present the case for an increase in grants to the Directors-General in Hobart in February 1968 on the occasion of the meeting of the Australian Education Council. As a result of that meeting letters were addressed by the President to all Ministers for Education, setting out the case for an increase in the annual grant by two thirds to meet

(i) increasing costs of services at the present level;
(ii) increasing demands arising from growth in numbers and complexity of Australian education;
(iii) a 'growth' factor to enable ACER to undertake more work.

At the time of writing the position is that subject to agreement by other contributing governments to do likewise, all states have agreed to make the increase. The Commonwealth has requested additional information on three matters:

(i) what is charged to the government grants;
(ii) what the future programme of the Council is;
(iii) what the relation is between the general research work and the Council's other activities.

If approved by all governments, the increase would give the Council an annual income from grants of $100,000. At present the amount received is $60,000.*

* During the publication of this report, the Council was advised that the Commonwealth contribution to the Council's funds would be increased by one third only.

Operations in 1967-68

Our operations during the year resulted in a deficit of $22,000. This was less than anticipated, but obviously indicates a need for close control over expenditure in the current year. Because of it, we were forced to realize shortly before the end of the year the $50,000 on short-term loan.

Trading operations exclusive of the sale of books published under the Publications Fund brought in a gross income of $295,000, a reduction of $64,000 over the previous year in which we held the SRA agency for six months. Our estimate of comparable sales income for the year was $270,000, and this was exceeded. Sales of the books referred to have brought in $27,000. The trading surplus was $109,315, after charging $54,702 for the salaries and overheads of the publishing and distributing staff. (The combined figure, $164,017, compares with a figure of $177,038 in 1966-67.) In addition there was a trading surplus of $2,700 in the Publications Fund, of which $2,600 was represented by an increase in stocks. In a total expenditure of $420,000, the bill for salaries, superannuation, payroll tax and workers' compensation, amounted to $347,000.

Other sources of income increased, although most of these increases were for items carrying a corresponding expenditure—testing services, test development contracts, grants for materials development, etc.

Gifts from Students

It is pleasing to record that during the year we received a gift of $670 from the students of the University of Newcastle to be spent on research activities.

Grants other than from Governments

It is pleasing also to record that, in addition to the notable assistance given to this project by the Victorian Education Department through seconded staff, grants of money have been received for the Junior Secondary Science Project from the Myer Foundation, the Percy Baxter Charitable Trust, and the Ian Potter Foundation. In addition, a gift was received for its operation from Imperial Chemical Industries. We expect gifts of a similar kind to be made by a number of other firms.

The Myer Foundation also met the cost of preparing the Directory of Philanthropic Trusts, and has provided an amount of $500 to begin a revision fund.

We are also grateful for a continuing annual gift of $200 from the Tasmanian Teachers' Federation.

Advances from Publishers

Activity in producing both the JSSP and the IMP has been greater than would otherwise have been possible because in both cases the publishers (Cheshire's and Rigby's respectively) have been able to advance money against future sales to enable us to meet salary and other costs. We are grateful to them for this action.

Organization of Accounts

In an organization like ACER with a number of different activities under the one roof but drawing income from various sources and spending money on different 'products' and for different purposes, it is not easy to apportion many items of expenditure in an exact and unarguable way. Some arbitrary allocations are inevitable—e.g., in the allocation of the costs of the clerical and technical pool, or of the library, or of the main office expenses. Because it is important, however, to know what particular activities are costing, or would cost if operating alone, we have tried this year to apportion between a number of activities the very considerable 'overheads' a body like ACER must have—building payments, provision for leave, depreciation, and so on, and to draw up a statement of expenditure on what could be called 'general administration'. There are a number of details still to be worked out, but we hope that we will be able to make the audited accounts more informative.

CONCLUSION

The record of activity shows that the year has been a full one. There is no dearth of interesting and valuable work to be done, both in continuing the most helpful of our current activities, and in undertaking new ones as the reason for them emerges out of the changes now taking place in Australian education with increasing speed.

4

ACER Staff

At 25 October 1968

DIRECTOR

W. C. Radford, M.B.E., M.A., M.Ed., Ph.D., M.A.Ps.S., F.A.C.E.

ASSISTANTS TO DIRECTOR

Administration and Services

M. L. Clark, B.A., B.Ed.(Hons), M.A.Ps.S., M.A.C.E.

Research and Development

M. L. Turner, B.Sc., B.Ed., M.A., Ed.D., M.A.C.E.

GENERAL RESEARCH

R. T. Fitzgerald, M.A., Dip.Ed., M.A.C.E.
(Mrs) M. M. de Lemos, M.Sc., Ph.D.
G. W. H. Gosling, M.A., B.Ed., M.I.L.(Fr.) (on leave)
B. C. Horne, B.Sc., B.Ed., M.A.C.E. (from 22.1.68; on leave from Gordon Institute of Technology, Geelong)
M. J. Rosier, B.Sc., B.Ed.
(Mrs) P. F. Segall, B.A.
R. Warry, B.Ed. (from 30.1.68; seconded by Q'ld Ed. Dept)
B. Wise, B.Com., B.Ed., A.A.S.A.(Snr) (from 11.9.67; on leave from Swinburne College of Technology, Melbourne)

TEST DEVELOPMENT

T. M. Whitford, B.A., B.Ed.(Hons), M.A.Ps.S. (on leave)
B. Rechter, M.Sc., B.Ed.
D. W. Bruce, M.A., M.A.Ps.S.
(Miss) M. George, B.A.(Hons) (from 1.4.68)
(Miss) J. M. Maling, B.A., Dip.Ed.
(Mrs) A. E. Lamb, B.A., M.A.Ps.S. (from 8.7.68; part-time)
(Mrs) J. M. Little, B.A., Dip.Ed. (from 25.3.68)
(Mrs) J. Lublin (from 25.3.68; part-time)
(Miss) N. E. Rosh, B.A. (from 6.8.68)
(Miss) J. L. Russell
F. J. D. Syer, M.B.E., B.A., Dip.Ed., Ph.D., D.I.C., O.S.L. (from 5.8.68)
(Miss) E. Watson, B.A.
R. E. Wilkes, B.Com., B.Ed. (from 16.1.68)
(Mrs) J. Williams, A.B.Ps.S (from 5.2.68)
N. L. Wilson, B.Sc., B.Ed.

MATERIALS DEVELOPMENT

D. M. Bennett, B.A.(Hons), T.Dip.
(Miss) R. Hamilton, T.P.T.C.
M. G. Searle (seconded by WA Ed. Dept)
(Mrs) J. D. Smith, B.A.
L. G. Dale, B.Sc., B.Ed. (seconded by Vic. Ed. Dept)
(Miss) J. Fox (part-time)
K. W. Moritz, B.A., B.Sc., B.Ed. (from 30.1.68)
(Mrs) E. Palmer, B.Sc., Dip.Ed. (from 6.2.68)
M. E. Robinson, B.Sc., B.Ed. (seconded part-time by Vic. Ed. Dept)
A. G. Shannon, B.Sc., Dip.Ed., A.C.P., F.C.P.
(Mrs) M. B. Wilkinson, M.A.C.E.

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W. T. Renehan, B.A., B.Ed.

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(Miss) M. E. O'Donnell, T.P.T.C., M.A.C.E. (on leave)
(Mrs) D. M. Bradshaw, B.A., Dip.Ed., M.A.Ps.S.
(Mrs) M. P. Locke

Testing

(Mrs) N. E. McBean, B.A., Dip.Ed.
(Miss) A. J. Simpson, F.S.T.C.
(Miss) J. E. Prior

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T. E. Noble, B.A. (from 12.8.68; part-time)
(Miss) J. Zeidler, B.A. (from 9.10.67)

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(Mrs.) M. E. Clarke
(Miss) T. J. Crilley
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(Mrs) W. H. Williams, B.A. (part-time)
(Miss) J. A. Gorman (from 12.2.68)

Australian Education Index

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(Mrs) B. E. Hay, B.A.(Hons) (part-time)

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(Mrs) S. McComb, B.A.
(Mrs) L. Botham

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(Miss) P. Staurenghi, B.A., B.Com., Accountant
(Mrs) P. Arnold (part-time)
(Mrs) H. Nixon (from 1.4.68)
(Mrs) T. Wilson

Administrative Officer

S. G. Powell, B.A.. Dip.Ed.(Admin.) (from 1.9.68; part-time)

Secretary to Director

Miss K. A. Saunders

Office

(Mrs) J. D. Turnbull (from 30.10.67)
(Mrs) N. Allen
(Miss) L. Baines (from 22.7.68)
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(Mrs) J. N. Wiseman (part-time)

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(Mrs) N. Anchen (from 21.8.68)
(Miss) J. Baldwin (from 6.2.68)
(Mrs) R. Campbell (from 21.8.68)
(Mrs) M. Corfe

Forwarded with compliments . . .

Australian Council for Educational Research
FREDERICK STREET, HAWTHORN, VIC. 3122

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Contributors to Council Funds

The Council acknowledges, with thanks, the following contributions received during the financial year ended 30 June 1968:

AUSTRALIAN GOVERNMENTS		
Commonwealth	$30,000	
New South Wales	11,440	
Victoria	8,280	
Queensland	4,400	
South Australia	2,680	
Western Australia	2,160	
Tasmania	1,040	
		$60,000.00
TEACHERS' ASSOCIATIONS		
Tasmanian State School Teachers' Federation		200.00
Newcastle Teachers' College Students		671.00
TRUSTS, FOUNDATIONS, ETC.		
For Junior Secondary Science Projects		
Ian Potter Foundation		4,500.00
Percy Baxter Charitable Trust		8,000.00
Myer Foundation		8,000.00
ICI		1,000.00
For Directory of Philanthropic Trusts		
Myer Foundation		4,000.00
For General Research		
Miscellaneous		1,830.26

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State Institutes for Educational Research

NATURE AND FUNCTION

The state Institutes are autonomous bodies, each nominating one representative to the governing body of the Australian Council for Educational Research, and co-operating closely with it when occasion requires. In 1956, at a meeting held in Melbourne, these representatives formulated the following statement of the nature and functions of an Institute. In general, as the reports printed later will show, they carry out the functions in different ways and with different emphases.

'The object of the Institute is to act as a learned body devoted to the promotion of study and research in education, emphasizing the scientific study of educational problems, by means of the following activities:

(a) Disseminating
  (i) research, either
    (a) the results of specific pieces of research done by members; or
    (b) reports on the collection of research information;
  (ii) opinion and accounts of practice in education.
(b) Participating in
  (i) the discussion, planning and criticism of research projects,
  (ii) the active carrying out of research projects.
(c) Establishing areas of contact with other educational groups.'

MEMBERSHIP ON COUNCIL OF ACER

The term of office of an Institute representative on the Council of the ACER is four years and the dates of appointment are arranged to provide a continuity of membership of the Council.

ANNUAL REPORTS OF THE INSTITUTES

NEW SOUTH WALES

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Bulletin Editor

Mr G. Cooke

Representative on ACER

Professor D. Spearritt

Meetings

The following meetings were arranged:

July 1967: Mr G. W. Ford, *Education for Technical Change. Adult Education and Training.*

September 1967: Dr R. J. Burns, *Policy and Practice in State Secondary Education before 1912.*

April 1968: Professor D. C. Maddison, *Abnormal Responses to Crisis.*

Special Meeting

November 1967: Dr I. S. Turner, *Forty Years in Teacher Training.*

Membership

Membership now stands at 178, of which 53 are in the Newcastle Branch, This is a considerable increase in membership over the last year.

Bulletin

A third issue of the Institute's bulletin was printed during the year. It contained summaries of three Institute meeting addresses, objectives and criteria of membership, etc.

Correspondence with Mr Gorton

The Institute received a detailed reply to a letter addressed to the Federal Minister for Education, asking about Commonwealth participation in education in Australia. The reply indicated how the Commonwealth could not be involved in various areas of education which were the prerogative of the states.

VICTORIA

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Mr G. D. Bradshaw

Executive Members

Mrs B. Falk, Messrs V. J. Joyce, L. L. Foster, G. J. Allen, Drs R. Rowlands, D. Cohen, and Professor S. S. Dunn.

Assistant Editor, Australian Journal of Education

Dr L. W. Shears

Membership

At the end of 1967 there were 548 members, an increase of thirty-eight over the previous year. In September 1968 the membership had declined to 498.

General Meetings

October 1967: Sir Hugh Ennor, Secretary of the Department of Education and Science: *Some Problems of Educational Research in Australia.* In association with the Extension Committee and the Faculty of Education, University of Melbourne, the Eleventh Fink Memorial Seminar.

November 1967: Dr R. J. Selleck, *The Transmission of Educational Ideas.*

March 1968: Annual Meeting and Mr D. Le. R. Matters and Mr M. Spivakovsky, *Some Current Concepts in Educational Environments.*

May 1968: Professor Patrick Suppes, *Research in Computer Assisted Instruction.* The John Smyth Memorial Lecture.

June 1968: Dr T. L. Robertson, *Educational Research in Australia.* Fifteenth Frank Tate Memorial Lecture.

August 1968: Professor H. Lionel Elvin, *The Relation between Education and Political Theory.* The Twelfth Fink Memorial Lecture.

G. S. Browne Prizes

The value of these prizes was increased in 1968 to $100. The prize for educational practice was awarded to Mr M. Poulton for an entry entitled *Communications. An Experimental Subject.* The prize for educational research was awarded to Messrs N. Fary and E. Rowlands for their joint entry, *A Survey of Academic and Socio-Economic Backgrounds of First-year Studentship Holders at Monash Teachers College.*

VIER Bulletin

Bulletin No. 17 was published in November 1967, Bulletin No. 18 in May 1968, and No. 19 is to appear in November 1968. They contain reports of addresses given by speakers at VIER meetings, and of Institute activities.

Groups of the Institute

The Primary Education Today Group and the Regional Groups have all had active programmes. There are now four of the regional groups in operation.

Other Activities

Following the interest which developed from the visit of Dr Mildred Dawson, the VIER decided to sponsor the establishment of a Victorian Chapter of the International Reading Association. An inaugural meeting of the Chapter was held in March 1968, and it is now operating as an organization independent of the Victorian Institute.

QUEENSLAND

Office Bearers

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Dr S. A. Rayner

Associate Editor for Queensland, Australian Journal of Education

Dr S. A. Rayner

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Membership

The following shows the number of financial members of QIER over the last four years: 31.5.65, 140; 31.5.66, 188; 31.5.67, 235; 31.5.68, 243.

Meetings

During the year, in addition to the series of four lectures, six general, including the annual general meeting, and five executive meetings were held. Proceedings at the general meetings are summarized below, the figures in parentheses indicating the attendance of members and visitors respectively.

June 1967 (Annual Meeting): Discussion: *Needed Educational Research in Australia* centred on *Teacher Education*; chairmen, Mr G. Berkeley and Dr S. A. Rayner (32:10).

August 1967: Panel: four visiting teachers undertaking the 'Certificate in Education for Overseas Teachers' discussed *Educa-*

tional Problems in Developing Countries; Chairman, Mr R. Thomas (11:9).

October 1967: Discussion: submission to the Committee to Review Teacher Education in Queensland; chairman, Mr W. J. Brown (17:1).

March 1968: Professor G. W. Bassett, *Research and Innovation* (28:0).

April 1968: Mr N. Hart, *Research in Queensland Schools into the Diagnosis and Treatment of Children with Language Difficulties* (35:90).

May 1968: Dr Z. Matejcek, *Remedial Care for Children with Reading Difficulties in Czechoslovakia.* (31:94).

Public Lecture Series, 1967

The 1967 Lecture Series, *Science for the Modern Child* held on September 19, 26, and 28, and on October 3, was possibly the biggest and most successful attempted by QIER. As the respective attendances at the lectures of 340, 300, 260 and 300 indicate, outstanding authorities in their fields attracted and held large audiences over a period of three weeks. Teachers and public welcomed the practical help both in the content and in the suggestions for experimental approaches. Press advertisement before some of the meetings coupled with favourable press reports after the lectures showed that others in the community felt that a real need was tackled and satisfied.

Lecture Series, 1968

Much of the current overseas and local interest is centred at present on the social sciences. In August and September last year the Australian UNESCO Seminar on the Teaching of Social Sciences at the Secondary Level was held at the Burwood Teachers' College, Victoria. The executive was of the opinion that 1968 could prove to be an opportune year in which to arrange a lecture series on the present conditions and possible future developments in the social sciences. The lecture series will be held in September or October. Details of speakers, topics, dates and meeting places will be announced later.

Library

The library is at present situated at the Teachers' College, Victoria Park Road, Kelvin Grove. Members are invited to make inquiries of the secretary regarding its holdings.

Membership

The year 1967-1968 has been a period of consolidation that has followed a period of rapid growth. What has been particularly encouraging for the executive and members of QIER has been the response from other teachers at the lecture series and at the April and May general meetings.

Country Branch of Q I E R

Initial moves were started early in 1968 to ascertain the possibility of forming a branch of QIER at Townsville. At present, interested members in this region are considering the relevant information which has been forwarded.

Q I E R Prize

The QIER prize for educational research and practice was not awarded in 1968.

Submission to Committee to Review Teacher Education

The October meeting discussed the suggestions that had been put forward by a sub-committee of the executive. Late in 1967 a copy of the final draft of the submission, which was submitted to the committee, was posted to each member.

Special Invitation to Visitors

Visitors are always welcome at Institute meetings. As the topics of the last two meetings were of particular interest to head teachers and teachers in primary schools, the executive decided to send special invitations to them. Invitations to local primary schools were sent on both occasions. The resultant increased attendances are indicative of the desire shown by some Queensland teachers to maintain their professional competence.

Result of Q I E R Proposal

On page vi of the foreword to *Music in Australian Schools,* by Graham Bartle, published by ACER in April 1968, is found the following statement: 'The proposal for such a study had been made to the Council by the Queensland Institute for Educational Research some years ago.' The Institute hopes that official cognizance will now be taken of Mr Bartle's suggestions and that further advances in the teaching of music in this and other states will result.

SOUTH AUSTRALIA

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Mr K. L. Berndt

Assistant Editor, Australian Journal of Education

Dr N. A. Nilsson

Honorary Auditor

Mr N. W. Edwards

Membership

The membership at 30 June 1968 was 113, the majority of whom came from departmental schools, teachers' colleges and education administration.

Meetings

During the year the following meetings were held: six general meetings including the annual general meeting and four executive committee meetings. Speakers and topics at the general meetings were as follows, with approximate attendances in parentheses.

July 1967: This meeting was held at St Aloysius College. Sister Mary Campion, headmistress of the college, gave a summary of some of the interesting sections of her M.Ed. thesis entitled *An Investigation into the Success and Failure of First-year Full-time Students at the University of Adelaide, with Special Reference to the Type of School They Attended* (40).

September 1967: There were two speakers at this meeting. Mrs J. Lokan discussed her research into the effectiveness of the 'New

Mathematics Course' in primary schools. Mr Glastonbury of the the Curriculum Branch, Education Department, reported on some research done by himself at an earlier stage (40).

October 1967: The guest speaker on this occasion was Dr Marion de Lemos. Her subject was *Conceptual Development in Aboriginal Children: Implications for Education* (20).

March 1968: This was the annual general meeting and election of officers for the year. Mr E. D. Lasscock, the retiring president, spoke on *Individual Differences and the Curriculum* (30).

April 1968: Mr L. Dodd, Director of Primary Education, who had recently returned from overseas, addressed the meeting on the subject *Some Unusual Schools Overseas* (80 including guests).

June 1968: Mr E. T. Price addressed the meeting, his subject being *A Plan for the Rehabilitation of Adult Offenders*. Mr Price was, until retirement, chief psychologist at Adelaide gaol.

Research Grant

During the year $100 was made available from the SAIER Research Fund to enable Mrs J. Lokan to continue the programme for the evaluation of the new mathematics course in primary schools. Most of the grant was used to pay for computer time.

WESTERN AUSTRALIA

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Mr N. G. Traylen, Mons. J. Bourke, Mr R. Peter

Representative on ACER

Dr R Adam

Assistant Editor, Australian Journal of Education

Professor C. Sanders

Membership

Current membership is 62, with three members on leave.

R. G. Cameron Prize for Educational Research

This prize, sponsored by the WAIER, was awarded for 1967 to Mr L. Pavy.

Affiliation with ANZAAS

An invitation to affiliate with the WA Division of ANZAAS was accepted by the Institute.

Meetings

August 1967: Mr R. Biggins and Mrs J. Keeley, *English at the Leaving and Matriculation Level.*

September 1967: Mr L. W. Louden, *Prevocational and Non-Academic Education in the USA.*

October 1967: Miss R. Jones, *Remedial Teaching.*

March 1968: Annual General Meeting. Dr R. Adam, *The Work of the Western Australian Institute.*

April 1968: Mr N. R. Collins, *Research and Public Examinations.*

June 1968: Dr D. K. Wheeler, *Economic Status and Education.*

July 1968: Mr B. Bennett and Mr J. Hay, *Problems in Examining Leaving English.*

Committee Meetings

Regular meetings of the committee were held to plan the work of the Institute and to discuss reports and correspondence from the ACER.

TASMANIA

Office Bearers

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Committee

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Representative on ACER

Mr H. L. Dodson

Assistant Editor, Australian Journal of Education

Mr N. H. Campbell

Membership

The financial membership is 56.

General Meetings

Meetings have been held at Hobart, Launceston and Burnie centres. Mr H. S. Payne has been the Institute's representative at Launceston and has convened the meetings at that centre. The following speakers and topics have been presented:

1. Miss M. O'Donnell, Advisory Services Officer of ACER, addressed meetings at Burnie, Launceston and Hobart on the advisory services of ACER.
2. A lecture-discussion by Miss N. Miller and Mr W. Brewer on *Developments in the Social Sciences* was held in conjunction with the World Education Fellowship.
3. Mr L. D. Blazely gave an address on *Research into Public Perception of the Role of the School.*
4. Mr and Mrs T. Broomhall, *Teaching in New Guinea.*
5. Mr D. Levis, *Education and Racial Problems in the USA.*
6. A forum, *Is Home Arts an Art or a Science?*

Executive Meetings

There have been three meetings of the executive to consider the year's programme and the activities for 1967-68.

Prizes

1. H. T. Parker Prize: Because it is policy at Hobart Teachers College not to make awards to individual students, no individual award was made in 1967. Instead, the H. T. Parker Prize took the form of a suitably inscribed book for the college library.

2. G. V. Brookes Prize: This was awarded to Miss Helen Atkinson, Launceston Teachers College.

Annual Institute Address

Mr P. W. Hughes, Deputy Director-General of Education, delivered the 1967 annual Institute address in Hobart. The title of the address was *Quality and Innovation in Education.* The report has been published in the *Tasmanian Journal of Education,* Volume 2, Number 2, April 1968.