Australian Council for Educational Research

fifty-third annual report

82-83



fifty-third ANNUAL REPORT 1982–83



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N. Bowman, BA, MEd(Melb.), PhD(Ill.), MACE Director of Research, Education Department, Darwin, Northern Territory

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Professor J.A. Keats, BSc(Adel.), BA(Melb.), AM, PhD(Princeton),
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OFFICIAL REPRESENTATIVES

Directors-General of Education

S.P. Saville, OBE

Secretary, Department of Education, Darwin, Northern Territory

Commonwealth Department of Education

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STAFF REPRESENTATIVE

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*J.P. Keeves, BSc(Adel.), DipEd(Oxon.), MEd(Melb.), PhD(ANU), fil dr(Stockholm), FACE, FASSA

Annual Report of the Director

Presented at the Annual Meeting of the Council on Friday 18 November 1983

This report covers the period 1 July 1982 to 30 June 1983.

INTRODUCTION

This year, 1983, may be considered to mark the 100th anniversary of the establishment of the field of educational research. In 1883 three events occurred which were to open up the three strands of investigation and inquiry that have characterized studies and programs of research and development in education. In that year, Stanley Hall in the United States of America published the influential book, The Study of Children, which followed the work by Prever, a German psychologist, The Mind of the Child, which was published during the previous year in Europe. These two works marked the beginning of the Child Study Movement. Again in 1883, Sir Francis Galton published Inquiries into Human Faculty and its Development, drawing public attention to his studies in the development of tests of mental abilities. This work marked the beginning of the field of mental testing, which has laid the foundations for the Scientific Research Movement with a positivistic approach that was pursued so vigorously by E.L. Thorndike in the following decades. Also in 1883, John Dewey published the first of his major philosophical essays on 'Knowledge and the Relativity of Feeling', that was to start him on a career of philosophical study. His work has had a profound influence on educational thought in the United States and led to the establishment of the New Education or Progressive Education Movement, in which philosophical discourse replaced the scientific approach and life experience took over from experimentation and empirical research. It is evident that these three major strands of educational research, the Child Study Movement, the Scientific Research Movement, and the Progressive Education Movement had their beginnings in or around 1883. Consequently it is appropriate that we, in 1983, should recognize the origins of our field of inquiry 100 years ago and pay tribute to those who inaugurated this work as well as those who have pursued their investigations so successfully in the intervening years to establish and consolidate the field of educational research.

The Australian Council for Educational Research, like several other national educational research institutes, was set up about 50 years ago. In its program of research and development, it has been influenced significantly by two of the three educational research movements. On the one hand, it is of interest to note that the ACER has, with the possible exception of one minor investigation, neither undertaken nor supported studies in the area of child development. Indeed, there are few publications that it has issued over the 50-year period that relate to the Child Study Movement. Work in this area is seriously under-represented in Australia in the fields of psychology, edu-

cation, and early childhood development. On the other hand, it is noteworthy that the first Director of the ACER, Dr K.S. Cunningham, studied at Teachers College, Columbia University under E.L. Thorndike and returned to Australia to establish work associated with the development of tests of mental abilities and educational achievement at the ACER. From this program of work over a period of 50 years, the ACER has become firmly set within the field of empirical research based on a positivistic approach. The ACER has developed strengths in measurement, the analysis of quantitative data, and the interpretation of results derived from such analyses. In a research climate where alternative paradigms for research are being constantly debated, it is perhaps not surprising that the ACER should be strongly criticized by some for its adherence to the canons of empirical research. As a consequence it is appropriate that consideration should be given, at the time when the Review of the ACER's program of research, development, and service is being conducted, as to whether this emphasis in the ACER's work should be maintained.

The ACER's program of work has also been influenced quite significantly from the mid-1930s by the New Education or Progressive Education Movement, The ACER, through its publications and through the New Education Fellowship conferences that it supported, was over a period of probably 20 years the spearhead of the Progressive Education Movement in Australia. and there is little doubt that the work carried out had an important influence on educational practice. Shortly after his appointment to the position of Director of the ACER, Dr W.C. Radford pursued this strand in a modified form with an emphasis on catering for the individual differences between children in the type of learning experiences provided. He sought to advance the teaching and learning processes in schools through the provision of curriculum materials that catered for individual differences. The reading kits. the primary school mathematics materials, and the junior secondary science programs, including the Australian Science Education Project materials which were developed, bear testimony to his work. Subsequently, however, progressive education turned to support school-based curriculum development, and the ACER's involvement in curriculum planning and the development of materials terminated in the early 1970s. This has allowed the ACER to follow more actively alternative strands which were gaining strength in the field of educational research, namely contemporary historical studies and studies concerned with the sociology and economics of education.

While in the field of educational research around the world the three strands which were present from the outset remained dominant, many important changes were occurring. From the 1960s, the advent of the computer had a significant influence on educational research. Data processing and data analyses were no longer limited by calculation time. Complex experimental designs and sophisticated approaches to causal modelling became possible. The 1960s were also marked by the beginnings of an epistemological debate both in educational research and the social sciences. This debate was generated by opposition to the emphasis on scientific empiricism that was endorsed by many research workers.

As a consequence there has developed something of a conflict between the

two major paradigms which are employed in the investigation of educational problems. One paradigm is based upon the approach of the natural sciences that emphasizes empirical and quantifiable observations which can be analysed by rigorous mathematical procedures. The task of research is to establish causal relationships and to explain. The alternative paradigm is concerned with humanistic studies and is derived in the main from anthropology. This paradigm emphasizes qualitative information and the building of a personal interpretation of events. With the expansion of educational research that has taken place in Australia as elsewhere in the world since the mid-1960s, both paradigms have gained strength. The scientific paradigm has continued to flourish as the processing and the analysis of data are made easier. The paradigm associated with humanistic studies has also advanced as research workers trained in anthropology, sociology, and politics have entered the field of educational research. The latter paradigm has also gained strength with the growing emphasis on the evaluation of educational institutions and programs. In many evaluative assignments, resources and time are not available for extensive quantitative studies to be carried out, and alternative qualitative approaches must be employed. This use of the humanistic paradigm for evaluation and research by employing participant observation and personal case studies follows the American stream in this area, rather than the European stream which is more closely allied to phenomenology, ethnomethodology, anthropology and hermeneutic analysis. Clearly the answer for educational researchers in the years ahead is not to advocate the use of one paradigm or the other but rather to seek to employ both as is appropriate. Thus the ACER in the recently completed study of staffing and resources in the government schools of Australia and New Zealand sought to carry out the inquiry using empirical procedures in a survey of 600 schools, and in the examination of certain aspects of the eight systems. However, use was also made of case study procedures, supported by a valuable exposition of the case study method in one of the reports which was concerned with the more detailed examination of how schools utilize the resources available to them. The research community at the ACER has come to recognize that sound inquiry in educational research advances in a upward spiral way by combining methods and procedures that some had previously regarded as incompatible. The scientific or strongly empirical approach is seen as complementary to the anthropological, ethnographic, and case study approaches.

There are further approaches to educational research which must be seriously challenged on the grounds that they are not contributing to the building up of a substantial body of knowledge and understanding of how the world of education works. One approach is concerned with the legitimation of existing educational policies and practices. A second approach, which is of greater concern, seeks to use what is imputed to be research in education to promote change, and the ascription 'participatory research' is employed. It would appear to have had its origins in South America and to have been accepted at certain centres in England. This approach to research should not be confused with 'action research', advanced in the United States in the mid-1950s, that sought to encourage teachers to examine critically and

systematically with hard data the effects of their teaching practices. The major goals of participatory research are the stimulation and production of innovation and change in educational practice and in the organization of educational institutions. This approach is strongly supported by the members of a neo-progressive movement, who have questioned schools as they exist and who seek to rebuild educational institutions in a new mould. Their aim is to sponsor change. Moreover they claim that, in the main, educational knowledge has validity only within a particular context or setting, and may have little generalizability. Such an approach has some appeal because it is perceived to involve working closely with teachers and schools and undertaking work that is closely allied to the immediate needs of teachers.

Clearly there is always the danger that educational research could become esoteric and too far removed from the problems of schools and teachers. It must be argued that research of quality, undertaken in accordance with the canons of inquiry associated with both the scientific and the humanistic paradigms, need not be and should not be divorced from the applications of research to educational policy and practice. Nevertheless, it must be argued that the future program of research, development, and service of the Australian Council for Educational Research should continue to lie within the strong empirical traditions that have been laid down over the past 50 years, and be supported and extended by approaches derived from humanistic studies involving both the anthropological and evaluative approaches. Thus it is necessary for us to recognize that alternative strategies can contribute to research in particular settings and to the investigation of particular problems that have practical significance. However, the approaches of legitimatory and participatory research, which are advanced by some colleagues in the field of educational research in Australia and which would seem to be supported in other ways, must be seriously questioned.

The future of educational research in Australia, as in all parts of the developed and developing world, lies in the assembling of a sound body of knowledge and understanding of the educative processes. The ACER since the 1970s has profited greatly from the provision of increased resources and the strong support received from educational practitioners. As a consequence, it has been with conviction and enthusiasm that a significant proportion of the staff of the ACER have contributed to the *International Encyclopedia of Education: Research and Studies*. This ten-volume encyclopedia is a major and highly significant attempt to assemble what is known about education in a coherent and readily accessible form. A task that remains is to report to the educational public in Australia on the trends and developments that have occurred through research and studies in education in this country during the past decade. This would be a fitting way to mark 100 years of educational research.

PROGRAM IN SOCIAL CONTEXT OF EDUCATION

Advisory Committee

Professor P.H. Karmel (Chairman), Professor D. Beswick, Dr G. Elsworth, Mr B. Milligan, Associate Professor Millicent Poole, Professor R. Selleck, Dr J.G. Ainley, Mrs M. Batten, and Dr T.H. Williams (The Committee met twice during the year.)

Overview

The Division's longitudinal study, Youth in Transition, entered its fifth year with continuing support from a consortium of government agencies. The project 'Secondary Schooling in the 1980s' was brought to final report stage, a report on 'Patterns of Participation in Post Secondary Education in Victoria' was submitted to The Victorian Post-Secondary Education Commission—the funding agency for this project, finishing touches were applied to the Staffing and Resources study final reports, and a new project focusing on retention in Victorian secondary schools was initiated at the request of the Victorian Education Department. Further development of the planning for 'Patterns of School Organization' and 'School Structures and Affective Responses' was undertaken. During the year one member of staff went on special studies leave. These circumstances led to some loss of cohesion in the research program, though this was offset by divisional seminars that considered proposals, drafts or reports, questionnaires, and related material in the interest of providing for mutual assistance in these respects.

In the coming year, it seems that the Division may be able to pursue its mandate to undertake externally funded policy research in the form of more cohesive multi-strand projects of the kind advocated in previous years. A study of students' decisions about mathematics courses and technological careers is to be undertaken with sponsorship from the Institution of Engineers, Australia and private industry. A nationwide study of influences on retention in school is a possibility, as is the incorporation of a third cohort into the Youth in Transition study. If all three projects eventuate, they will absorb the time of all staff and can be developed as an integrated program centred on surveys of several national samples of persons both within school and in the workforce. We plan to integrate both quantitative survey analysis approaches and qualitative indepth observational studies to the end that each complements the other in addressing the policy questions at issue.

EVALUATION STUDIES OF PARTICULAR POLICIES AND PROGRAMS

Staffing and Resources in Australian and New Zealand Schools

John G. Ainley, Phillip A. McKenzie

(This project was included during 1982-83 in the ACER Core Program.)

This study examined issues relating to resource allocation in the government schools of Australia and New Zealand. It involved studies of both schools and education systems. Reports concerned with the eight education systems, a survey of some 650 schools, and a series of case studies have now been published and generally released.

The examination of the eight education systems involved the context in which resource allocation policies were determined, structural features of the systems, and procedures for allocating resources to schools. It included a discussion of alternative approaches which could be more widely adopted in government education systems.

The survey report examines patterns of availability and utilization of personnel resources in government schools. It describes in detail the types and level of personnel resources available to schools, the structures established in schools which shape the way in which resources are allocated to different functions and different groups of students, and the resultant patterns of resource allocation. The report underlines the importance of considering the rich complexity of school objectives, circumstances, and structures in the design of appropriate staff and resource allocation policies.

The case study report describes and discusses the detailed patterns of structural organization and resource allocation in a set of schools selected to provide a cross-section of school types and sizes. The report explores the ways in which school organization and resource allocation reflect the means by which a school attempts to achieve its aims and priorities within the constraints which it faces.

The summary report is cross-referenced to each of the three main reports.

Publications and Papers

- Ainley, J.G., Keeves, J.P., McKenzie, P.A., and Sturman, A. Resource Allocation in the Government Schools of Australia and New Zealand. (A Summary of the Reports of the Staffing and Resources Study). (ACER Research Monograph No.15). Hawthorn, Victoria: ACER, 1982.
- McKenzie, P.A., and Keeves, J.P. Eight Education Systems: Resource Allocation Policies in the Government School Systems of Australia and New Zealand. (Staffing and Resources Study Report No. 1). (ACER Research Monograph No. 16). Hawthorn, Victoria: ACER, 1982.
- Ainley, J.G. Six Hundred Schools: A Study of Resource Allocation in Australian and New Zealand Government Schools. (Staffing and Resources

Study Report No. 2). (ACER Research Monograph No. 17). Hawthorn, Victoria: ACER, 1982.

Sturman, A. Patterns of School Organization: Resources and Responses in Sixteen Schools. (Staffing and Resources Study Report No. 3). (ACER Research Monograph No. 18). Hawthorn, Victoria: ACER, 1982.

Ainley, J.G., and McKenzie, P.A. Resource allocation and government schools.

Unicorn (in press).

Ainley, J.G. Equipment and materials and their effects on teaching. In T. Husen and T.N. Postlethwaite (Eds), *International Encyclopedia of Education:* Research and Studies. Oxford: Pergamon Press (in press).

Ainley, J.G. Policy formulation and co-ordination in Australian schools. Unicorn

(in press).

Patterns of School Organization

Phillip A. McKenzie

(This project was included in the ACER Core Program.)

The Australian government school systems differ on a number of structural and policy dimensions which are likely to influence the types of programs offered by the schools, retention rates to senior secondary year levels, and school operating costs. Such dimensions include the normal commencing age of secondary students, minimum school-leaving-age regulations, the provision of senior secondary colleges and other particular institutional forms, the size distribution of schools, and the breadth of curriculum programs. This study seeks to elaborate the interactions between these structural and policy variables and differences between the systems in retention rates and operating costs. To this stage, the primary task has been the development of a model to account for variations in school-system operating costs. Subsequent stages will involve the testing and refinement of this model through the use of system and school-level data.

Publications and Papers

McKenzie, P.A. The Distribution of School Size: Some Cost Implications. Paper presented at the American Educational Research Association Annual Conference, Montreal, April 1983.

Patterns of Participation in Post-Secondary Education in Victoria

Warren B. Jones

(This project was funded by the Victorian Post-Secondary Education Commission, and was subsequently included in the ACER Core Program.)

The main objective of the study was to establish the extent to which home location in Victoria influences participation in post-secondary studies. The

study arose because of a general concern regarding potential inequalities in access to educational facilities across some geographical areas. Within this context the project was undertaken to (1) examine the enrolment patterns at universities and CAEs of students from different geographical areas and hence estimate the overall effect of home location on participation, and (2) examine the catchment areas of both universities and CAEs. Both aspects of the data were examined through measures of the regionality of an institution. The analyses of data from the Victorian Universities Admissions Committee for new full-time enrolments in 1980 and 1981 demonstrated that, for Deakin University, Caulfield Institute of Technology, Footscray Institute of Technology, Preston Institute of Technology, State College of Victoria— Coburg, Frankston, and Rusden, and the country CAEs, students from the immediately surrounding geographical areas were much more likely to enrol than those from other geographical areas. Where students lived had little effect on participation at the University of Melbourne, Royal Melbourne Institute of Technology, Melbourne State College, Lincoln Institute and the Victorian College of Pharmacy.

The study also investigated the effects of other factors such as sex, age, the type of school attended, and HSC achievement on the decision to apply or not for a place in a university or CAE and on the decision to enrol or not once an offer had been made by VUAC. In general, students from distant metropolitan home locations and the non-metropolitan regions were far less likely to apply and enrol when the influence of these other factors had been taken into account.

A final report has been submitted to the funding agency, the Victorian Post-Secondary Education Commission. Following the completion of the report, further analyses were carried out to examine the effects of the use of logistic regression procedures and the effects of the log linear analysis of contingency table data on the results already reported. It is planned that after the further analyses have been completed the findings will be presented in a published report of the study.

Publications and Papers

Jones, Warren. Patterns of Participation in Post-Secondary Education in Victoria. Hawthorn, Victoria: ACER, 1983. (mimeo.)

NATIONAL STUDIES OF EDUCATIONAL OUTCOMES

Youth in Transition

Trevor H. Williams, Jeffery J. Clancy, Jennifer Slater

(This project was funded in part by grants from the Commonwealth Department of Education and Youth Affairs, the Commonwealth Schools Commission, the Commonwealth Tertiary Education Commission, and the Bureau of Labour Market Research, and in part from the ACER Core Grant.)

'Youth in Transition' entered its fifth year during the period in question. The older of the two samples received their fifth yearly questionnaire, and the younger sample their second, through the mail in December 1982. At the time members of the samples were about 21 years of age and 17 years of age respectively. Followup mailings continued through the first quarter of 1983. The older group returned 88 per cent of the questionnaires sent, and the younger group responded by returning 83 per cent.

Attempts were made to track members of each sample with whom contact had been lost over the years and a 'make-up' questionnaire was mailed to these

persons. Follow-up mailings are in progress.

Over the year we dispatched some 30 000 pieces of mail, most of which were accompanied by a personally addressed letter. This clerical work, questionnaire design, a series of analyses aimed at exploring the effects of weighting the data to adjust for non-response, the preparation of reports for respondents, and the preparation of a report on movements in and out of the labour force comprised the bulk of staff activities.

Publications and Papers

Williams, T.H., Clancy, J.J., and Slater, J. Letters from Youth in Transition. Hawthorn, Victoria: ACER, 1981. (A report to respondents subsequently published in set No.1 1983)

Williams, T.H., Clancy, J.J., and Slater, J. Transitions. Hawthorn, Victoria:

ACER, 1983. (mimeo.)

Ainley, J.G. and Clancy, J.J. Entry to the skilled trades in Australia: The role of family background and school achievement. Research in Science and Technological Education (in press).

Secondary School Retention Project

John G. Ainley and Margaret Batten

(This project was funded in part by a grant from the Victorian Education Department and in part from the ACER Core Grant.)

This project, which began in May 1983, involves an examination of school factors which may affect the decision of students to remain to complete secondary school. It involves some analysis of factors related to differences between schools in retention rates but mainly uses multi-site qualitative research in a series of secondary schools in Victoria. Questionnaires have been developed so that information can be obtained from students, teachers, parents and ex-students about their responses to schooling beyond the compulsory school years. The results obtained from these questionnaires will be used as stimulus material in a series of subsequent interviews.

STUDIES OF SCHOOL AND HOME PRACTICES

School Structures and Affective Responses

John G. Ainley and Margaret Batten

(This project was included in the ACER Core Program.)

This project encompasses the complementary interests of several staff members in the characterization of organizational structures within schools, the conceptualization and measurement of affective outcomes, and patterns of social behaviour in schools. Over the year the Quality of School Life Questionnaire has been revised and refined as a result of further trials. Scales for examining the extent of structural coupling in schools have been developed and revised as a result of trials conducted in primary schools. In addition a review paper concerned with the relation of school structures to asocial behaviour was prepared, and a literature search was undertaken preparatory to a meta-analysis of the relationship between school size and the affective responses of students.

Publications and Papers

- Ainley, J.G. The Social Roles of Schools. Paper presented at the seminar held by the Australian Institute of Criminology on 'Delinquency Prevention through Affective Education', October 1982.
- Ainley, J.G. The research implications of meta-analysis. Victorian Institute of Educational Research Bulletin, 1983, No.50, 3-22.
- Ainley, J.G. Policy structures in secondary schools. Secondary Administrator, 1983, 1(1), 33-6.

Secondary Schooling in the 1980s

Margaret Batten

(This project was included in the ACER Core Program.)

The project was divided into two parts: a study of educational issues, and a study of school practices. The first part of the project involved the development of a classification of educational issues under the headings of Organization and Curriculum, based on a literature search and ratified by school and community groups. The classification was sent to 400 principals, from primary and secondary government and non-government schools, who were asked to indicate the 10 issues that were most important to their schools. Some significant differences between the groups emerged in the data analysis: Pastoral Care and Moral Education were issues of particular importance to non-government school principals from both levels; Co-operative Learning was particularly important to primary government school principals;

Preparation for the World of Work was much more important to secondary than primary school principals; and the issues of Technology in Education and Special Social Competencies were of particular importance to secondary

government school principals.

The second part of the project comprised visits to 17 of the secondary schools in the survey to study in detail some of the school practices exemplifying priority issues described by principals in the questionnaires. In the report the practices were discussed under nine issue headings. It was possible to identify a number of factors, recurring in a variety of educational situations, that were associated with successful practice. These common elements of successful practice were related to program, process, and personnel.

Publications and Papers

Batten, Margaret. Issues of the Eighties: Principals' Perspectives and School Practices. (ACER Research Monograph No. 22). Hawthorn, Victoria: ACER, 1983.

PROGRAM IN MEASUREMENT AND EVALUATION

Advisory Committee

Professor D. Spearritt (Chairman), Mr L.D. Blazely, Mr A. Farmer, Dr L. Higgins, Professor J. Keats, Dr L. Mackay, Dr E. Sandercock, Dr J.F. Izard, Mr G. Morgan, Dr H.A.H. Rowe (The Committee has met twice during the year.)

Overview

Meetings of the Advisory Committee provide opportunities for members to review progress on existing projects concerned with educational and psychological test development, the provision of testing services, and the maintenance of tests and associated materials. The Advisory Committee examines proposals for future projects and provides constructive comments on the proposals. Advice is given on the technical aspects that need to be covered and on the likely viability of the proposed project. Input from Advisory Committee members is particularly helpful in assigning priorities to projects where a choice must be made between useful projects within the constraints imposed by the resources available.

The research and development program has resulted in a substantial number of test instruments and associated materials being prepared for publication. While it is not possible to comment on each item published, some have been given special attention because of their contribution to the wise use of testing in schools or because they highlight significant aspects of the research and development program of the Measurement and Evaluation Division.

The ACER Review and Progress Tests (RAPT) in Addition, Subtraction, Multiplication and Division provide a range of criterion-referenced tests for assessing achievement of computational skill. The RAPT in Addition and the RAPT in Subtraction each have eight Progress Tests and two Review Tests. The RAPT in Division has two sections, Division 1 and Division 2. Each section has seven Progress Tests and two Review Tests.

Each test is provided as two parallel forms. Each Progress Test is concerned with a single objective; each Review Test covers several successive objectives. All of the items have been scaled for difficulty using a Rasch calibration procedure which enables raw scores on each test to be transformed into measures of achievement on a continuum for that process. To assist teachers with the interpretation of the results, each test includes a graph which allows for direct transformation of the raw score including allowance for the standard error associated with each score.

Teachers wishing to use each collection of test items as an item bank are able to assemble their own Review Tests. With the help of graphs provided in the Manual, and a pocket calculator, scores on their own Review Tests can be related to the same achievement continuum as the published tests. This simplified procedure has considerable power. Teachers are now able to select

tests from a pool of items of varying difficulty, but from the same continuum, and interpret the scores on a common scale.

The RAPT materials have aroused considerable interest because of the ease of interpretation and the flexibility of use. This initial interest suggests that an active program of workshops will be useful in the dissemination of this product of the ACER's research and development program. Accordingly a series of 'hands-on' workshops is being planned to follow the publication of the materials.

Another area in which instrument development has taken place during 1982–83 is that of career guidance. For the international Work Importance Study, currently taking place in about 10 countries, ACER staff have been involved in all aspects of constructing, field testing and revising two instruments designed to assess aspects of the importance to individuals of work and other life roles. The instruments are the *Values Scale* which seeks to ascertain what aspects of a role an individual values, or holds as being important, and the *Salience Inventory*, which assesses the relative importance of work in comparison with other areas of activity such as studying, leisure, home and family, and community service.

The revision of psychological and educational tests has continued as a substantial part of the ACER program. A number of overseas instruments have been adapted for use in Australia. In the case of the Differential Aptitude Tests (Forms V and W) changes suggested by staff of the NZCER were incorporated so that the one version will be suitable for use in both Australia and New Zealand. As part of this regular schedule of test revision and maintenance, an Australian norming program is under way.

Other instruments to be normed at the same time as the Differential Aptitude Tests include Holland's Self-Directed Search and Vocational Preference Inventory, both of which are highly regarded and extensively used overseas in the career guidance field. Adaptation of both these instruments for Australian conditions was carried out at the ACER.

In June 1982, it was decided to purchase optical mark reading equipment to provide test scoring services. The equipment purchased was interfaced with the ACER's computer, and the software for interpretation of the student responses and conversion to computer files was commissioned. The range of computer programs which analyse test data and report scores and summary statistics was extended. A range of precision-printed answer sheets was prepared under strict quality control and used in some ACER test development trials. The initial results suggest that the use of this optical scanning equipment can reduce the costs of processing test responses. Where the use of a separate answer sheet does not alter the task significantly, the use of optical mark reading will help the ACER to contain the costs of test processing. It is planned to increase the range of tests which can be scored by optical mark reading, so that more users of ACER testing services will have the option of scoring tests in this way.

In the past year there has been an active review of new instruments being published overseas to identify those instruments which may be useful in Australia in their present form and those which may make a contribution if adapted for use in Australia. Dr J.F. Izard travelled to Great Britain, the

United States of America and Canada in July 1982 for discussions with some 15 test research and development and test publishing organizations. At each he met with staff responsible for test research, development or production and was able to see and discuss instruments in their final stages of development.

As noted in the last Annual Report there have been a number of important developments in the microcomputer area. A range of software for instructional and testing purposes is available and a number of test publishers have projects involving such electronic product development. Staff of the Division have evaluated a number of publications produced for use in schools with microcomputers and have explored some of the possibilities using data collected during the development of the *Review and Progress Tests in Mathematics*.

DEVELOPMENT OF TESTS AND INSTRUMENTS FOR USE BY TEACHERS AND GUIDANCE OFFICERS

Career Planning and Guidance

Janice Lokan

(This project was included in the ACER Core Program.)

A considerable amount of developmental work was accomplished in this project during 1982–83. In the Work Importance Study (WIS), a project designed to assess several aspects of the meaning of work, final forms of the *Values Scale* and the *Salience Inventory* were prepared following analyses of the trial data collected late in the 1981–82 year. The collection of Australia-wide data with these instruments commenced in June 1983. Papers on aspects of WIS were prepared and presented at four conferences during 1982–83, as listed below.

Australian versions of Holland's Self-Directed Search, including a preliminary Occupations Finder, and Vocational Preference Inventory (VPI) were also prepared for norming at the same time and in the same sample as the WIS instruments described above. With the author's permission only the interest scales have been included in the Australian VPI, which has been set up on an optical-mark-reader sheet to facilitate analysis. As at June 1983 about half the papers presented at the ACER seminar on Australian work involving Holland's theories and instruments have been edited for publication.

The Career Development Inventory booklet and machine-scorable answer sheet are ready for printing, while only the appendixes to the Manual remain to be completed. All materials for the Work Aspect Preference Scale (WAPS) are in the final stages of publication. While the WAPS was developed by a psychologist who is not an ACER staff member, a considerable amount of time from within the Career Planning and Guidance project has been given to the review and production of the materials.

Publications and Papers

Lokan, J.J. Background, Ability and Personality Factors in Adolescent Career Development. Paper presented (in absentia) at XXth International Association of Applied Psychology Congress, Edinburgh, July 1982.

Shears, M.J. and Lokan, J.J. The Work Importance Study in Australia. Paper presented at the Australian Psychological Society Annual Conference, Melbourne, August 1982.

Lokan, J.J. and Shears, M.J. Aspects of the Importance of Work in the Lives of Australians. Paper presented at Annual Meeting of the Victorian Institute of Educational Research, Melbourne, March 1983. VIER Bulletin, 1983, No. 50, 23-47.

Lokan, J.J. The Factor Structure of Life and Work Values Held by Students in Diverse Cultures. Paper presented at American Educational Research Association Annual Conference, Montreal, April 1983.

Shears, M.J. The Construct Validity of WIS Measures in Australia. Paper presented (in absentia) at XXth International Association of Applied Psychology Congress, Edinburgh, July 1982.

Victorian School Achievement Tests

Jackie Sykes, Lee Waddell, Lesley Howard Murdoch, Meredith Doig

(This project was funded by the Victorian Education Department, and staff working on the project were seconded from that Department.)

As a contribution to the Australian Co-operative Assessment Program, this project, established in July 1980, is a joint venture between the Victorian Education Department and the ACER. The aims of the project are to provide materials which can assist teachers to evaluate the progress and development of their students in oral and written language and social learning. Currently materials are being designed for use mainly at the upper primary and lower secondary levels although it is envisaged that, in the long term, Years 3 to 9 will be included.

Three Advisory Committees were formed for oral language, written language, and social learning in 1980. Acting on the advice of these Advisory Committees, draft materials have been prepared for all three areas and have been submitted to the respective Advisory Committees for critical review. In addition, national conferences to discuss priorities and directions for project development have been held. Preparations for these have followed the recommendations of the ACAP Management Committee. Participants have included state departmental representatives, representatives of parent-teacher and professional organizations, ACER personnel, school teachers, and other educationalists. Recommendations regarding the development of materials are currently being implemented.

Based on the outcomes of the National Conference on Social Studies/ Social Learning held in Melbourne in 1981, four topic guides on evaluation were prepared for circulation and comment during 1982. A follow-up meeting of States and Territories held in Melbourne in August 1982 reviewed project developments and established priorities for other guides in the series. Altogether, eight topic guides on different aspects of evaluation, in draft, have now been distributed throughout Australia for in-service and developmental activities.

Following negotiations that were detailed in the Report of the National Conference on the Assessment and Evaluation of Oral Language held in April 1982, materials have been developed for use in the assessment of the oral language needs and development of students in three areas: learning, social, and communication. These materials cover age levels from infancy to late adolescence. They include a television program and two booklets. All of these are designed to assist teachers and school communities to develop assessment objectives, evaluation strategies, and educational programs. These and other materials are being field tested and developed within interstate co-operative arrangements and Victorian in-service education activities.

In writing education, work continues on the refinement of the Attitudes to Writing Scale and accompanying technical and teachers manuals. The pilot work undertaken in 1982, which dealt with values, crafting and communication techniques, has been used as a basis from which to develop school-based evaluation for writing education in the classroom. Currently two aspects are being pursued: one is on the development and application of criteria for the evaluation of students' stories, and the other on the values that students and teachers hold about story writing.

Publications and Papers

- Doig, M. The Development of an Instrument to Measure Attitudes to Writing. Hawthorn, Victoria: ACER, 1983. (mimeo.)
- Doig, M. Attitudes and writing. Curriculum and Research Bulletin (in press).
- Murdoch, L.H. The Potential Use of Information Retrieval Systems in Social Studies. Paper presented to the Australian Computers in Education Conference, La Trobe University, May 1983. In A.D. Salvas (Ed.), Could You Use a Computer? Niddrie, Victoria: Computer Education Group of Victoria, 1983.
- Sykes, J. Report of the National Conference on Assessment in Writing Education (Australian Co-operative Assessment Program). Hawthorn, Victoria: ACER, 1983. (mimeo.)
- Waddell, L. Report of the National Conference on Assessment and Evaluation in Oral Language (Australian Co-operative Assessment Program). Hawthorn, Victoria: ACER, 1982. (mimeo.)
- Waddell, L., Doig, M., and Horan, V. To Talk of Many Things. Melbourne: Education Department of Victoria, Curriculum Research and Development Section, 1983. (18 minute television program)

Biology Item Banking Project

Jeffrey Sewell (to December 1982), David Brown (from February 1983)

(This project was funded by ACER's income from sales. Dr Sewell and Mr Brown were seconded from the Victorian Education Department.)

The commencement of the Biology Item Bank project in March 1982 was prompted by the need for new assessment material for Australian Year 11 and 12 biology courses. An Advisory Committee of experienced educators and researchers developed a vision of an item bank that would encompass more than multiple-choice items. Ideally, it should include several other question types, including some much needed practical skills assessment material. Unfortunately the demands of producing well-researched and constructed, statistically sound multiple-choice items has prevented the development of the other material. However the resultant item bank will consist of nearly 1000 multiple-choice items.

In 1982 the major part of the Year 12 material was written and trial tested. In 1983 the Year 12 work will be completed, the development of the Year 11 material will be undertaken, and the document completed for publication. Items are being produced by teams of writers in New South Wales, Victoria, South Australia, Western Australia, and the Australian Capital Territory, thus ensuring that the final document will have national application. The items are written, edited, and reviewed by practising secondary and tertiary educators; they are then trial tested in both government and non-government schools and colleges in several States. Items are selected on the basis of both statistical analysis and teacher and student comments. The completed volumes will represent the efforts of a great number of teachers, students, researchers and ancillary staff.

Publication of the Biology Item Bank is envisaged for mid-1984.

Publications and Papers

Brown, D.W. Developing Biology Test Items. Workshop paper presented at the Australian Science Teachers Association Conference, CONASTA XXII, Adelaide, May 1983.

Item Banking

John F. Izard, Raymond Adams (from February 1983)

(This project was funded by ACER's income from sales and by the residue of a grant from the Victorian Education Department. Mr Adams was seconded from the Victorian Education Department.)

When a teacher selects test items from a pool of suitable questions and constructs a classroom test, it is difficult to interpret the scores obtained on that test. If many complex questions have been selected, the scores will be

low. Alternatively, selection of very simple questions will result in a pattern of high scores. The problem was to devise a way to give the student more credit for successfully answering difficult questions, while preserving the flexibility of choice for the teacher. Where a teacher has access to computer facilities and experience in using Rasch or other latent trait test models, it is possible to derive scale scores for raw scores on particular subsets of questions. However, teachers with access to such computer facilities and experienced in using such test models are rare.

After considerable exploration and development, a graphical method has been devised to convert Rasch calibration information supplied with each item to scale scores from raw scores on that particular set of questions. The graphical approach has been included in the *RAPT in Mathematics* materials. It will be possible to provide similar graphs for other Rasch-calibrated tests, if considered appropriate, when further editions are prepared.

At a meeting of teachers and researchers in May 1980, ACER staff demonstrated how an item bank might be stored on a microcomputer and used as the base for computerized adaptive testing where the next item is chosen on the basis of the estimated ability from previously administered items. Since that time, the model has been refined and an experimental disk-based version for the Apple II microcomputer is now operating.

The ACER has maintained contact with the IEA Item Bank co-ordinating centre in Liege, Belgium and has contributed material to the initial collection of mathematics items.

Publications and Papers

Izard, J. The British Ability Scales: An Application of Latent Trait Theory. Paper presented to Annual Conference of School Counsellors, New South Wales Department of Education, Division of Guidance and Special Education, Shoal Bay, August 1982.

Review and Progress Tests in Mathematics

John F. Izard, Graham Ward, Stephen Farish, Arnold Vander Werf (to December 1982)

(This project was funded from ACER's income from sales. Mr Farish and Mr Vander Werf were seconded from the Victorian Education Department.)

The ACER Review and Progress Tests in Mathematics (RAPT in Addition, RAPT in Subtraction, RAPT in Multiplication, RAPT in Division) were completed for publication during the year.

The objectives to be covered by the tests in the series were developed in consultation over several years with teachers and researchers from the education departments of New South Wales and Victoria and the Schools Authority of the ACT. Items were written by groups of teachers to cover the objectives selected. After the objectives were matched to appropriate age levels, the tests were arranged into booklets for trial testing. The testing was

conducted in schools in New South Wales, Victoria and the ACT. Rasch calibrations of the item pools using the computer program BICAL 3 were conducted for each topic independently. These analyses were at two levels—within the objectives and across groups of objectives—to determine the Difficulty measures of the items and the Fit of the items to the Rasch Measurement model. The scales established in each analysis were linked using common items to form a single scale for each topic. (Two scales were formed for Division.)

The final tests were formed after the list of objectives had been reexamined using the data obtained from the trial testing. Some of the original objectives were combined and some were subdivided. Additional items were written where required, trial tested, calibrated and linked to the scales. The items for the final tests were selected to form two sets of parallel six-item Progress Tests each covering one of the final objectives and two sets of parallel ten-item Review tests each covering a number of objectives. The items were chosen so that there was, as far as possible, an even spread of item difficulties in the tests and a coverage of the full range of item difficulties of the objectives.

Wright and Stone's UFORM procedure was applied to produce score equivalence tables covering the possible raw scores on the tests to a Rasch scale calibrated in RAPT units. Charts were produced enabling the scores to be read graphically with allowance for the standard error of measurement of each score for single and combined tests.

A graphical procedure to produce score equivalence tables for teacherselected tests of different lengths was devised and included in the manuals. Workshops and lectures on the use of Rasch-calibrated tests have been given in New South Wales, Victoria, Queensland and Western Australia.

Tests, Publications and Papers

ACER Review and Progress Tests in Mathematics (RAPT)

RAPT in Addition: Progress Tests 1A to 8B (16 tests), Review Tests 1A to 1B (4 tests), Manual for Administration and Interpretation.

RAPT in Subtraction: Progress Tests 1A to 8B (16 tests), Review Tests 1A to 1B (4 tests), Manual for Administration and Interpretation.

RAPT in Multiplication: Progress Tests 1A to 12B (24 tests), Review Tests 1A to 3B (6 tests), Manual for Administration and Interpretation.

RAPT in Division: Division 1 Progress Tests 1A to 7B (14 tests), Division 2 Progress Tests 1A to 7B (14 tests), Division 2 Review Tests 1A to 2B (4 tests), Division 2 Review Tests 1A to 2B (4 tests), Manual for Administration and Interpretation. Hawthorn, Victoria: ACER, 1983.

Maintenance of Educational Tests

John F. Izard, Arnold Vander Werf (to December 1982), Stephen Farish, Graham Ward

(This project was funded by ACER's income from sales. Mr Farish and Mr Vander Werf were seconded from the Victorian Education Department.)

Year 3/4 Mathematics

The current ACER Mathematics Tests—AM Series is being extended to the Year 3 and Year 4 levels. Item pools for the topics were written and trial tested in schools in South Australia and Victoria in 1982. Item analyses of the trial test data were carried out and final forms of the tests were developed and panelled. There are 11 topic tests in the Series. Both open-ended and multiple-choice items have been included. The draft tests have been distributed to state education departments for comment and a Series Manual is being prepared. The tests are to be used in a norming study. A CATIM test has been formed from the item pools and the CATIM Manual and Class Analysis Chart adapted. These items are being prepared for publication.

PAT Mathematics Tests

Work continued on the Progressive Achievement Tests in Mathematics. Test items were placed on a logistic scale common to all six tests. The teachers manual containing ability estimates and item difficulty data was prepared. Layout of items within the tests was finalized and an answer sheet able to be scored manually and by the optical mark reader was designed.

Mathematics Profile Series

The four tests in the ACER Mathematics Profile Series (Operations, Space, Measurement and Number) made use of the Rasch model in the measurement of student performance and have been in wide circulation. However, some users indicated their preference for a shorter review test for the series which could be used in a similar way to the ACER Class Achievement Tests in Mathematics (Years 4/5 and 6/7).

Items were selected from the range available in the other tests and assembled as a short *Review Test* covering all four areas. The Rasch item difficulty calibrations obtained for the original tests were used to produce a profile graph with scales which allowed teachers to plot directly the raw score on each of the four subtests.

Short Clerical Test

Two new forms of the Short Clerical Test (Forms D and E) were prepared in the same format as the current test (Form C). A study equating the new test forms with Form C was completed and a revised Manual for the test was prepared.

Tests, Publications and Papers

ACER Mathematics Profile Series: Review Test, Handbook, sensitized self-scoring Answer Sheet and Profile. Hawthorn, Victoria: ACER, 1983.

DEVELOPMENT OF TESTS AND INSTRUMENTS FOR USE BY PSYCHOLOGISTS

Non-Verbal Ability Tests

Helga A.H. Rowe

(This project was included in the ACER Core Program.)

This project is a response to the increasing public concern with the welfare of minority groups and others whose disadvantage in Australian society is being recognized. In relation to ethnic minority groups, this concern is reflected in the recognition of the value of multicultural education, the encouragement to retain the mother tongue and ethnic customs, and the provision of special support services. In the United States, concern for the rights of minority groups dates back to the 1950s, and has resulted in civil rights legislation at both state and federal levels. Important amongst the mechanisms aiming to improve the educational, vocational and social opportunities of members of disadvantaged groups have been psychological tests, in particular tests of general and specific abilities. Yet, valid psychological and educational assessment of intellectual functioning is frequently made impossible by the testee's language problems, as performance on most intelligence tests is inextricably linked with linguistic ability and fluency.

Since its inception two years ago, this project has resulted in the development of a set of tests that are neither language nor culture bound. Each subtest aims to measure a defined dimension of general ability. The battery of Non-Verbal Ability Tests (NAT) consists of 18 paper and pencil tests which allow for the assessment of many aspects of cognitive performance by means of non-verbal tasks. The battery requires minimal if any verbal directions, no reading, and no verbal response. It thus provides an effective means for the assessment of cognitive development of individuals and groups with temporary or lasting, severe communication problems.

The individual's performance on the NAT subtests is perceived within the framework of a functional system, and is represented by a profile of scores which can reflect both type and level of performance. The subtests of the NAT combine important component skills of cognitive ability in various ways, and are sufficiently differentiated to permit the establishment of patterns. Performance can thus be quantified with reference to the shape as well as the level of the profile. The information obtained from the NAT battery is expected to increase the validity of the assessment of intellectual functioning, and to provide useful information for the development of educational and training procedures which might meet the individual's needs.

The latter consideration links this test battery with up-to-date theoretical concerns and developments in intelligence research. In recent years, the psychological and educational literature and professional and public debate

have been reflecting the increasing demand that theories and tests of intelligence should provide a practical basis for the improvement of intellectual efficiency and performance. In the conceptualization of the present project an attempt was made, therefore, to design a device for the assessment of intelligence which can place individuals into different score positions in relation to well-defined and psychologically relevant dimensions of general or specific abilities. It is expected that this approach will provide descriptions of individual differences which may be more useful, in practical terms, than traditional IQ scores, if educational or clinical intervention is planned.

The utility of the NAT is increased because the design of the battery combines a system of quantitative scoring with qualitative data which reflect

major component abilities in the performance of different tasks.

Efforts during the past year have resulted in the production of final forms for all but the memory subtests. The latter will be completed before the end of 1983. Data on all subtests of the battery were gathered in schools, and amongst a number of important minority groups. These included Aboriginals resident in the Northern Territory, major ethnic groups, hearing-impaired children and adolescents, and a sample of mentally retarded adults.

A number of independent studies are being conducted to examine the psychometric characteristics of the NAT battery for various groups. Each of these studies contains analyses and comparisons of item difficulties, discrimination, internal consistency reliabilities, and the standard errors of measurement. Level and variability of performance within and between groups, concurrent validity, age and sex differences were investigated for all tests in the battery.

Concurrent validity of the NAT was investigated with respect to such tests as WAIS, WISC-R, TOLA, Jenkins Non-Verbal Test, Standard Progressive Matrices, and a number of measures of school achievement. Longitudinal data on achievement in mathematics and science are being collected on a representative sample of students who were initially tested at Year 7 level late in 1981.

Publication of the NAT battery will take place during 1984. The tests and manuals will be accompanied by a substantial monograph, which contains the presentation of theoretical aspects of the project, a discussion of the rationale and procedures, and technical details.

Tests, Publications and Papers

Rowe, H.A.H. To bridge the gap. Parent Australia, 1982, 7(2), 1-8.

Rowe, H.A.H. A promising step: From psychometric to process measures of intelligence, competency, and achievement. ACER Newsletter, No. 46, November 1982.

Rowe, H.A.H. What parents should know about tests. *Parent Australia*, 1983, **8**(3) in press.

Rowe, H.A.H. Non-verbal Tests of General and Specific Abilities. Display and discussion paper presented at the 17th Annual Conference of the Australian Psychological Society, Melbourne, August 1982. Rowe, H.A.H. Intelligence-functional Sequences of Problem-solving Strategies. Paper presented at the 17th Annual Conference of the Australian Psychological Society, Melbourne, August 1982.

Maintenance of Psychological Tests

Marion M. de Lemos

(This project was funded by ACER's income from sales.)

The Differential Aptitude Test battery has been adapted for use in Australia, and is currently being normed in four Australian States (Victoria, South Australia, Western Australia, and Tasmania). Advanced Form R of the Otis-Lennon School Ability Test has also been adapted for use in Australia, and has been included in this norming program, together with the ACER Higher Tests ML-MQ and PL-PQ. Queensland schools will be involved in the norming of the Otis-Lennon School Ability Test and the ACER Higher Tests while New South Wales schools will be involved in the norming of the ACER Higher Tests. In addition to the testing, some of the schools in the norming samples will also be administering questionnaires associated with the Work Importance Study.

An analysis of responses to the open-ended questions on the ACER Intermediate Test G has been undertaken, and on this basis a multiple-choice format for the ACER Intermediate Test G has been prepared.

Item analyses of the supplementary tests administered to the trial test sample for the intermediate level tests—the Standard Progressive Matrices, the Mill-Hill Vocabulary Scale (Junior Form 2, Set A) and the Multiplication and Subtraction test—have been completed. These data have been combined with the data on the intermediate trial tests, and further analyses of the relationships between performance on the intermediate trial tests and the supplementary tests have been undertaken.

A report on the trial testing undertaken for the modification of the WAIS-R for use in Australia has been prepared. A summary version of this report was published in the ACER Bulletin for Psychologists.

A report on the trial testing of items for a revised version of the *Word Knowledge Test* has been prepared. Results from this trial testing indicated the need for further trial testing on more representative adult samples prior to the construction of final forms for this test.

Tests, Publications and Papers

WAIS-R: Australian Supplement. Hawthorn, Victoria: ACER, 1982.

de Lemos, M.M. Australian adaptation of the WAIS-R: Report on the selection of items for the Australian version of the Information test. ACER Bulletin for Psychologists, No. 32/33, September 1982/March 1983.

de Lemos, M.M. Progression of General Ability Scores by Age and by Grade: Implications for the Norming of Psychological Tests. Paper presented at the 17th National Conference of the Australian Psychological Society, Melbourne, August 1982.

TESTING SERVICES AND PROGRAMS

Australian Scholastic Aptitude Test

Graeme Withers, George Morgan, Allyson Holbrook

(This program was funded from income from users.)

The ASAT Series L has been prepared for administration to the Year 12 populations in the Australian Capital Territory, Western Australia, and Queensland. No changes were made to format or structure and the test conformed to the specifications as agreed in 1976.

A meeting of users and their representatives was held over two days in April to discuss a possible research program into various aspects of the test—its nature and some apparent biases in score distribution which have emerged, particularly based on sex differences in the candidature. A further meeting in Canberra in June took the research proposal planning a stage further. A final report on Series K was tabled and discussed.

Item preparation and trial testing also took place: the latter was again conducted in New Zealand in March 1983.

Tests, Publications and Papers

Australian Scholastic Aptitude Test: Series L. Hawthorn, Victoria: ACER, 1983.

Morgan, G. and Holbrook, A. Report on the 1982 Australian Scholastic Aptitude Test (ASAT Series K). Hawthorn, Victoria: ACER, 1983. (mimeo.)

Withers, G.P. Australian examination systems: A review of recent change and development. *Educational Analysis*, 1982, 4(3), 21–32.

ASAT Special Testing Program

Noel McBean, Graeme Withers

(This program was funded from income from users.)

Tertiary institutions offering courses for mature-age students have continued to make use of the two-hour versions of the Australian Scholastic Aptitude Test. During the year two new versions of the test have been constructed. Trial testing and validation studies will take place in the coming year. Between July 1982 and June 1983, 22 institutions tested 2952 candidates. Of these, 2202 were candidates who took tests with 100 per cent humanities content. The remainder took tests with a mathematics and science component as well as humanities content.

South Australian Co-operative Entry Program

Evelvn Watson

(This program was funded from income from users.)

This program was conducted for the first time in 1983 for independent schools in South Australia. The program involves the provision of a battery of tests at one level only: entrance into secondary school. The tests provide two types of measure: a measure of level of achievement, and a measure of scholastic aptitude. The areas examined in the achievement tests are reading, mathematics (problems and computations), and language usage. The areas examined in the scholastic aptitude tests are humanities, mathematics comprehension, and written expression. The overall regulation of the program resides in a policy committee representing South Australian independent schools and the ACER. The administration of the program, including development of tests, test marking, and score reporting is carried out by the ACER. Standardized test scores are reported to the schools.

The use made of these scores varies, but it provides an important element in assessing achievement prior to the point of entry to secondary schools, and in assessing scholarship candidates.

In 1983, nearly 2300 candidates registered for scholarships and/or places offered by 14 South Australian schools and one Victorian school. The candidates sat either at participating schools or in one of the 10 country and overseas centres set up by the ACER. Development and trial testing of items for use in succeeding years is an ongoing part of the program.

Co-operative Scholarship Testing Program

Evelyn Watson

(This program was funded from income from users.)

This program has been conducted since 1962 for a number of independent schools in all Australian States. It provides a battery of tests at two levels: Level 1 for entrance to secondary school; Level 2 for continuation beyond either Year 8 or Year 9 (depending on the State). The areas examined at Level 1 are Written Expression, Humanities, and Mathematics. At Level 2, a Science component is included with the Mathematics. The overall regulation of the program resides in a policy committee representing independent schools and the ACER. The administration of the program, including development of tests, test marking, and score reporting is carried out by the ACER. Test scores, standardized by level and by State, are returned to schools. The use made of these scores varies, but it provides an important element in assessing scholarship candidates.

In 1983 nearly 10 600 candidates registered for scholarships offered by 98

schools. The candidates sat either at participating schools or at one of the 52 country centres or 41 overseas centres set up by the ACER.

Development and trial testing of items for future use is an ongoing part of the program.

Miscellaneous Testing Services

Noel McBean, John F. Izard, Evelyn Watson

(These services were funded from income from users, and income from sales.)

Vic-Rail

Marking of test papers, conversion of scores, and reporting of results for applicants for Vic-Rail apprenticeships was carried out.

COPO

Marking of various test papers for the Committee on Overseas Professional Qualifications and the reporting of scores was carried out in September 1982.

ETS Testing Program

Supervision and accommodation for candidates required to take various tests offered by Educational Testing Service in the United States were provided. These 21 separate test sessions always generate a whole range of tasks beyond the actual supervision, and the work has largely become an information and advisory service for which there is no income or reimbursement of expenditure.

Psychological Corporation Testing Program

Arrangements for testing candidates throughout Australia who are required to take the Miller Analogies Test continues to be ACER's responsibility. The Corporation charges US\$15 for every test administration arranged. As far as possible these expenses are recovered by charges to the candidates who are all applicants for postgraduate study in the United States or Canada.

Queensland Nursing

By arrangement with the Queensland Board of Nursing Studies public hospitals throughout Queensland are supplied with tests for administration to applicants for nursing courses. Tests are marked by the ACER and scores are reported.

Year Eleven Entry Tests

These tests are provided for independent schools throughout Australia. This project is run in conjunction with the Co-operative Scholarship Testing Program. Papers are marked at the ACER and results are reported to schools.

Nauru Scholarship Testing Program

Test papers for the award of scholarships at two levels are supplied to the Nauru Department of Education. The marking of Written Expression papers is carried out by the ACER.

Optical Mark Reading and Test Scoring Services

Janice J. Lokan

(The initial developmental work to establish these services has been funded from the ACER Core Grant. It is expected that the program will become selfsupporting during 1984.)

The ACER took delivery of a Longines LD-7540 Optical Mark Reader (OMR) at the end of August 1982. The machine arrived with little in the way of support materials, hence the remainder of the year has been devoted to setting up programs and operating procedures to enable the OMR facility to be used in ACER research and development projects. This has involved drawing up specifications for, commissioning, and testing some highly complex software to run the reader, detect errors, and translate the data into a form suitable for input to other programs.

As the basis for a service to be offered during the coming year to outside clients as well as to internal users, a comprehensive test-scoring, analysis and reporting program was also commissioned, written, and tested. Evidence from trial studies in which the data were read via the OMR and run through the scoring and reporting program indicates that the new system should result in considerable savings in processing costs for typical ACER projects.

The precision with which answer sheets for processing through the reader have to be produced caused problems for more than one printer during the year. However the initial teething problems have been overcome, and specially designed answer sheets for several tests and attitude scales are now available.

PROGRAM IN LEARNING AND TEACHING

Advisory Committee

Dr G.A. Ramsey (Chairman), Dr N. Bowman, Dr M.L. Clark, Dr A. Trethewey, Dr B.J. Webber, Professor R.T. White, Mr S.F. Bourke, Dr M.J. Rosier, The Director (The Committee met twice during the year.)

Overview

A program of research within the area of learning and teaching must necessarily be closely related to the curriculum of the schools. Thus while the research carried out in the Learning and Teaching Division may not appear to be research into curricular issues, in practice a very substantial part, although not all, of the work of the Division is concerned with curricular matters. In so far as the research involves investigations into the curricula of the schools, it should be of immediate relevance and concern to teachers within schools, and it is the aim of the research program of the Learning and Teaching Division to focus on issues that are seen to be of importance, and to have implications of significance to schools.

During the past 12 months four reports of studies carried out within the Division have been published. Each has practical significance for teachers and administrators. John Mills's review, *Bilingual Education and Australian Schools*¹, is a useful book, written with clarity, that reviews the nature and success of bilingual programs overseas and gives an account of bilingual programs in Australia. The problems which are common across the Australian States are those of parental anxiety that proficiency in English will be jeopardized and the instability of the programs which arises from the movement of both teachers and students. This review provides information that is basic to the debate on bilingual education programs in Australia.

The report by Ken Ross, Social Area Indicators of Educational Need², fills a gap in the field of educational research in Australia that first became evident 10 years ago in 1973 when the Interim Committee for the Australian Schools Commission considered the use of such indicators in the planning of programs for the funding to disadvantaged schools. At that time the use of social area indicators had some appeal, but their relationship to the achievement of the students within a school was uncertain, and the accuracy with which they fulfilled the task to which they were assigned was unknown. This report has contributed to an understanding of the problems and its findings have already been employed by the Commonwealth Schools Commission in its funding programs.

Kevin Piper's report, Curriculum Style and Language Learning³, has been published too recently for its impact to be felt. While it is concerned with case studies of English language programs in 25 schools, with more detailed studies being conducted in eight, there is convincing evidence presented that at least in those schools the teaching of English faces many problems. The fact that, for over half the students questioned, one of their first thoughts about English lessons at school involved the term 'boring' must be of great

concern to all teachers of English. This finding is a very small part of a significant report that seeks to describe the styles and strategies used in the teaching of English in Australian schools. This report should prove very useful not only to curriculum developers and administrators in schools, but also to all teachers who are seeking to improve the effectiveness of their English language programs.

The report by Adrian Fordham on *The Context of Teaching and Learning* 4 is the first publication from a major investigation. The initial phase of the study involved providing a detailed account of the setting in which mathematics is taught in primary and lower secondary schools and in which science is taught in lower secondary schools in Victoria. This information was collected as background data for the major study. However, the information collected was of sufficient interest, and was not available from other sources, for the publication of a report to be undertaken. Again this report has been published too recently for its impact to be known, although it might be expected that the clear and simple style of reporting will have considerable appeal, and the account that it provides of classroom practices will be of interest to all teachers of mathematics in Australian schools.

It is important to note that each of these studies employs a different research strategy, and the program of the Division, through these reports, is seen quite clearly to use the research methods that are most effective and efficient for the issues being investigated. Mills undertook an extensive review of the published literature and sought through visits to all parts of Australia to obtain information on the incidence of bilingual programs in Australian primary schools. Ross undertook extensive and complex secondary analyses of data that were gathered in the 1971 Census and for the Australian Studies in School Performance in 1975. Piper carried out detailed case studies in eight schools and used less detailed information obtained from case studies of a larger sample which involved 17 additional schools. Fordham undertook a survey of Victorian schools and used straightforward descriptive statistics to provide a picture of the practices of the teachers in those schools. There is no one research method that should be used in all studies undertaken within the Division; each research worker must examine the issues being investigated and employ the strategies and tactics that are considered to be most appropriate and most economical of time and effort.

A major problem confronting research workers is that of disseminating the findings of their investigations. It is clearly important that, as far as is possible, reports should be prepared and made publicly available which not only provide access to the results of the study, but which also provide an account of how the basic data were collected and analysed. Without this information, the quality of the research cannot be assessed by the reader. Nevertheless this requirement commonly leads to the preparation of a report that is too lengthy and sometimes too complex for those who would be interested in the findings to have easy access to them. The ACER currently

¹ See page 50. ² See page 53. ³ See page 39. ⁴ See page 38.

uses its *Newsletter* and *set* to spread information, because other means of dissemination are generally very time consuming or very expensive. However, it must be recognized that rarely does a single study have an impact on educational practice. It is more likely to be the accumulation of evidence which all points in the same direction that influences educational policies and what teachers and administrators do as well as how they think about educational questions.

NATIONAL STUDIES OF EDUCATIONAL OUTCOMES

Second IEA Science Study

Malcolm J. Rosier, Christopher M. Kay, John P. Keeves, S.B. Thoradeniya (from March 1983)

(This project was included in the ACER Core Program. The international costs associated with the study have been covered by grants from the Australian Development Assistance Bureau and the National Institute for Educational Research, Japan. Mr Kay was seconded from the Victorian Education Department. Mr Thoradeniya was seconded from the Ministry of Education, Sri Lanka under the UNDP Fellowship Program.)

The Second IEA Science Study is being conducted in about 30 countries in order to examine the current state of science education across the world. A common set of instruments is being used in the participating countries in order to obtain information about (1) the curriculum covered by students, (2) their achievement and attitudes, and (3) other characteristics associated with their learning of science. Information about characteristics of schools and science teachers will also be collected. The analyses will seek to explain observed differences in achievement and attitudes in terms of other factors, especially those associated with the curriculum.

Three populations have been defined for the study, which in Australia have been specified as:

Population 1-10-year-old students in Years 4-6

Population 2-14-year-old students in Years 8-10

Population 3—Year 12 students including those currently studying science and those currently not studying science.

The Australian study is supported by a National Committee, which met several times during the year. The underlying management philosophy for the international study stresses the co-operative relationship between countries. Each National Research Co-ordinator is responsible for the conduct of the study in his/her own country, and is also expected to contribute to the development of the international components, such as the international core tests and the plans for the international analyses.

A meeting of National Research Co-ordinators was held in October 1982 in Tokyo and was hosted by the National Institute for Educational Research in Japan. This meeting, attended by 33 persons from 24 countries, concentrated on finalizing the international instruments. There was also a

meeting of the Steering Committee for the study in February 1983 in Budapest which was hosted by OPI, the National Centre for IEA in Hungary. This meeting dealt with future planning of the conduct of the study and the analyses to be carried out.

The first stage of the international study involved detailed planning, including the collection of information about science curricula in the participating countries and the development of international instruments. This stage was completed in December 1982, although several countries have yet to finalize their analyses of national science curricula.

Most countries have now moved into the second stage of the study, involving the administration of national testing programs. In Australia the testing programs for the three populations will take place in the second half of 1983. All countries are expected to complete their testing programs in time to send national data sets to the International Centre at the ACER by December 1984

The third stage involves the analysis of data. It is planned to complete the initial report for Australia by mid-1985. The initial international report

should be completed in 1986.

At the national level, the study should enable persons responsible for science education to gain an overview of the situation in Australia in the context of the results from the other countries. As well as countries with which Australia has had strong links in terms of the science curriculum (such as England and the United States), the study includes a range of countries from the Asian-Pacific region (including Papua New Guinea, Singapore, Thailand, Hong Kong, The Philippines, Japan, and the Republic of Korea). Since Australia also participated in the First IEA Science Study in 1970, it should be possible to examine the changes in science education between 1970 and 1983.

The main interest cross-nationally is in the investigation of patterns of relationships between student characteristics, curricular factors, student achievement and student attitudes. The cross-national comparisons will take into account differences in the proportion of persons in the population cohort who are attending school, and the proportion of students studying different types of science. Within this context there will also be an examination of differences between male and female students in terms of the type and amount of science studied, and of achievement and attitudes.

Publications and Papers

Rosier, M.J. Sampling and Administration Manual. Hawthorn, Victoria: ACER, 1982. (mimeo.)

Australian Studies in Student Performance—The Handwriting Study

Allyson P. Holbrook

(This project was included in the ACER Core Program.)

Essay scripts from the Australian Studies in Student Performance (200 written by 10-year-olds, 200 by 14-year-olds) were analysed (1) to determine whether or not handwriting had an effect on essay scores; and (2) to produce a description of the handwriting product of Australian school children. The latter involved a breakdown of the handwriting in the scripts into the following components—overall style, letter slope, letter shape, spacing, and writing tool.

Each essay was marked on a global impression basis by four highly trained and experienced markers, who at a later date also marked a section of each essay script for 'communicability' of handwriting. These results, together with a breakdown of essay length, were analysed using the Generalized Linear Model procedure. Correlation coefficients were also obtained, and an analysis of variance was undertaken to determine inter-marker reliability.

In the course of the study, extensive background research into handwriting and its measurement was undertaken, and resulted in the writing of two articles for the International Encyclopedia of Education: Research and Studies. A summary of recent research findings in the areas of handwriting and essay marking, together with a discussion of recent developments in handwriting research and instruction in Australia, are being incorporated in the report, which is in its final draft.

Publications and Papers

Holbrook, A.P. The teaching of handwriting, in T. Husén and T.N. Postlethwaite (Eds), International Encyclopedia of Education: Research and Studies. Oxford: Pergamon Press (in press). [1000 words]

Evaluation of the Short Selection Test

Graeme Withers, Stephen Farish

(This study was funded by the Commonwealth Department of Education.)

The Short Selection Test is an instrument administered to overseas students who wish to study in Australian tertiary and senior secondary institutions. The ACER was asked to perform an evaluation of its psychometric properties, with a view to determining more appropriate cut-off points for selection or rejection of candidates. The study was conducted in three parts—traditional and Rasch item analysis of the multiple-choice and cloze items; interviews with tertiary lecturers and tutors to evince something of the nature of the candidature once admitted; and a student questionnaire.

The report on the evaluation is in the final stages of preparation.

STUDIES OF SCHOOL AND HOME PRACTICES

IEA Study of Written Composition

Graeme Withers

(This study was funded from the ACER Core Program.)

A trial testing of some of the formats and topics, proposed for the main study, was conducted during 1982, and the resultant scripts marked, then forwarded to the University of Illinois, Urbana, United States, where the international co-ordinating centre is located. In addition a small analysis of students' perceptions of what constitutes good writing was undertaken, and it is understood that this study will now include such analyses as part of its program.

Following the world-wide trial, a meeting of national co-ordinators was convened at the University of Illinois, in November 1983. At this meeting a scoring schedule was developed, covering all tasks, and scoring criteria were established for various levels. Each co-ordinator participated in a trial scoring session and the results of this are awaited. In addition, final forms of the school, teacher, and student questionnaires were developed. As well as the Illinois meeting, a one-day seminar was conducted on the study at the annual meeting of the National Council for the Teaching of English in Washington, DC, for which a response to the paper on the validity of international scoring procedures, by Professor Alan Purves, the director of the study, was prepared.

Educational Environment and Student Achievement

John P. Keeves

(The study was included in the ACER Core Program.)

While less is always accomplished during a period of 12 months than had been planned at the beginning, it has been possible during the period under review to undertake some work on the further analyses of the extensive body of data collected over a decade ago on this project. Detailed supervision has been provided for a student working for the degree of Master of Education at the University of Melbourne who is examining the relationships between class size, the teaching practices, teacher and student characteristics, and the educational outcomes of achievement and attitudes. The data are being examined at three levels of analysis: between classroom, between student within classroom, and between student. An extremely interesting and valuable report is nearing completion. Several articles have also been prepared which are derived from this project.

Publications and Papers

Keeves, J.P. and Lewis, R. Issues in the analysis of data from natural classroom settings. Australian Journal of Education, 1983, 27(3), 274-87.

Keeves, J.P. Path analysis. In T. Husen and T.N. Postlethwaite (Eds), International Encyclopedia of Education: Research and Studies. Oxford: Pergamon Press (in press). [8000 words]

Keeves, J.P. Sex differences in ability and achievement. In Husen and Postlethwaite, op. cit. [4000 words]

Keeves, J.P. Measurement of social background. In Husén and Postlethwaite, op. cit. [2500 words]

Classroom Environment Study: Teaching for Learning

Sidney F. Bourke, Faye Holzer (to November 1982)

(This project was included in the ACER Core Program.)

The results of the first phase of this study are now available in a monograph by Adrian Fordham which is based on a questionnaire survey of primary and secondary teachers' backgrounds, and their stated opinions and practices. During the 1982–83 period, work continued on the correlational phase of the study in which the interrelationships of student background, teacher opinions and practices, classroom context, and both cognitive and affective student outcomes were investigated. Data for the correlational study were collected by observation, questionnaires, and tests early in 1982.

Data were initially checked, cleaned, and edited before univariate statistics were calculated. The data were then aggregated for classrooms by the calculation of means and standard deviations for all student variables. Teacher and observational variables were already aggregated to the classroom level. The analytic model described in the last Annual Report has been tested and amended using multiple regression analyses both within and between blocks, and path coefficients for the models have been calculated. The Partial Least Squares (PLS) program is also being used in further model development.

The countries taking part in this IEA study are Australia, Canada (Ontario and Quebec), Hungary, Israel, The Netherlands, Nigeria, South Korea, Thailand, and the Federal Republic of Germany. Not all data sets are yet available, but it is hoped that all will have been analysed by the end of 1983. Both national and international reports are being prepared. It is expected that the Australian national report of the second phase of the study will be completed early in 1984.

Publications and Papers

Bourke, S.F. Do you Like Maths? Development of a Questionnaire for Assessing Primary School Students' Attitudes towards Mathematics. Paper prepared for the Annual Conference of the Australian Association for Research in Education, Canberra, 1983.

Fordham, A. The Context of Teaching and Learning. (ACER Research Monograph No. 21). Hawthorn, Victoria: ACER, 1983.

Evaluation of the Language Development Project

Kevin J. Piper

(This project was funded by the Curriculum Development Centre.)

The Language Development Project was a major national curriculum project undertaken by the Curriculum Development Centre. It was concerned with all aspects of English language development of students in school Years 5 to 8, the upper primary and lower secondary years. Phase II of the project was concerned with the development of curriculum materials for students and teachers, and the ACER was commissioned to conduct an independent evaluation of this phase of the project's activity.

Eight developmental teams, one located in each State and Territory, were involved in the project, and a local evaluator was attached to each team. In addition to co-ordinating the activities of this evaluation team, the national evaluator was responsible for the local evaluation of the work of the CDC/

ACT Language Development Project.

Phase II of the project has now been completed and materials are awaiting publication. A final report on the evaluation of the project has been prepared and forwarded to the Curriculum Development Centre. It is anticipated that this report will be published by the CDC as part of its Occasional Paper series. In addition a volume by the evaluators of the project has been edited by the national evaluator, and is scheduled to appear as part of the outcomes of the project towards the end of 1983.

Publications and Papers

Piper, K.J. National Evaluation of the Language Development Project Phase II, Report No. 5: Ambiguous Sentence, July 1982. (mimeo.)

Piper, K.J. National Evaluation of the Language Development Project Phase II, Final Report: Retrospect and Prospect: A Synoptic Evaluation. Canberra: Curriculum Development Centre (in press).

Piper, K.J. (Ed.). Friends and Critics: Perspectives on the Theory and Practice of Co-operative Curriculum Development, Canberra: Curriculum Development Centre (in press).

Teaching Style and Language Learning

Kevin J. Piper

(This project was included in the ACER Core Program.)

This project was concerned with an investigation into current school practices in the teaching of English language in the junior secondary school. The investigation was carried out by means by case studies of 25 schools in New South Wales, Victoria, and the Australian Capital Territory, with more detailed follow-up case studies of eight of these schools. A final report of the study has been published.

Publications and Papers

Piper, K.J. Curriculum Style and English Language . (ACER Research Monograph No. 19). Hawthorn, Victoria: ACER, 1983.

Language Education and Community Expectations

Kevin J. Piper

(This project was included in the ACER Core Program.)

The aims of the study are: (1) to provide reliable information on community expectations and perceived priorities in language education in the junior secondary school; (2) to compare community expectations and perceived priorities with current practices in the junior secondary school; and (3) to develop a framework for language education programs in the junior secondary school which incorporates community expectations and perceived priorities.

The study will be carried out by means of a questionnaire survey of a number of school and community groups designed to tap community expectations on all aspects of language education in the junior secondary school. A conceptual framework and a number of candidate items for the questionnaire have been developed and will be circulated for comment prior to conducting the survey of school groups during the latter part of 1983. Wider community groups will be surveyed early in 1984. A preliminary report on the findings of the school community groups survey is expected to be prepared by March 1984.

PROGRAM OF SURVEY AND PSYCHOMETRIC SERVICES

Survey Research Services

Malcolm J. Rosier, Kenneth N. Ross (to May 1983)

(This project was included in the ACER Core Program.)

The Sampling and Analysis Services Unit provides assistance on request to ACER staff, particularly in drawing samples of schools from the ACER Primary and Secondary Sampling Frames. Under certain conditions it may provide consultancy services to persons from other institutions. In the first half of 1983 work was undertaken on the revision of the sampling frames. During the period under review, sampling assistance was provided to the Department of Education at the University of Queensland for their study on ESL programs across Australia. Dr Rosier continued to act as International Sampling Referee for the Second IEA Mathematics Study. In addition, during the year the monograph by Mr Mark Wilson concerned with the estimation of sampling errors using the Causey-Woodruff technique was prepared for publication as an ACER Occasional Paper.

Publications and Papers

Wilson, M. Adventures in Uncertainty. (Occasional Paper No. 17). Hawthorn, Victoria: ACER, 1983.

Statistical Analysis and Computing Services

Christopher M. Kay

(This project was included in the ACER Core Program. Mr Kay was seconded from the Victorian Education Department.)

The ACER continued to use three computing facilities. Work on small data sets is carried out on the in-house mini-computer while the FACOM computer at the Swinburne College of Technology is used to maintain larger data sets via two terminals located at the ACER. A remote job entry link to an IBM/370 computer operated by ICI was maintained throughout most of the year but little use was made of this facility.

During the year the Generalized Linear Model (GLIM) statistical package was purchased and installed on the computer at the Swinburne College of Technology.

Studies in Criterion-Referenced Measurement

George Morgan

(This project is included in the ACER Core Program.)

The main aims of this project are to keep the ACER informed of developments in the fields of criterion-referenced testing and latent trait test theory, and to undertake theoretical and practical research in these areas.

During the past year, maximum a posteriori Bayesian estimation procedures have been developed for the Rasch Simple Logistic Model (dealing with dichotomous items), based on unconditional and conditional likelihood functions. In these estimation procedures, prior information, or beliefs, about the likely values of person ability and item difficulty parameters are modelled by normal probability density functions. The procedures have been applied to artificial and real test data sets, and have been shown to be especially useful in testing situations involving few persons and/or items.

An interactive BASIC program that carries out a Rasch item analysis within the Bayesian framework, using the unconditional likelihood function, has been developed for general use on the APPLE II microcomputer.

Publications and Papers

Morgan, G. Estimation of Parameters in the Rasch Simple Logistic Model Using the Maximum a posteriori Bayesian Method. Paper presented at a seminar on the Rasch model, University of Western Australia, 2–4 August 1982.

Morgan, G. Maximum a posteriori Bayesian Analyses of the Rasch Simple Logistic Model. Paper presented at the Australian Mathematical Psychology Conference, University of Newcastle, 3–4 November 1982.

ASSP Validation Studies

Kenneth N. Ross (to May 1983)

(This project was included in the ACER Core Program.)

In 1975, and again in 1980, the ACER conducted national studies of the literacy and numeracy skills of Australian 10-year-old and 14-year-old students. The tests that were used on these two occasions contained a common core of items which enabled the items of both tests to be placed on the same scale according to the Rasch test calibration model. This would enable a comparison of achievement over time to be made in terms of the 'log-odds' metric of the Rasch model, instead of reporting only differences on performance on that subset of items which formed the common core between the two occasions. This project was terminated in spite of the interest in the methodological issues involved, when a decision was made not to continue with the ASSP 1985 testing program.

PROGRAM OF ADVISORY SERVICES

Educational Advisory Services

Peter Jeffery, Judith Eppinger

(The cost of Advisory Services was met entirely from ACER's income from sales.)

In August 1982, the Test Library physically rejoined the Advisory Services unit in an open-plan consulting, display, and workshop area adjacent to the front entrance of the ACER. The interaction of all facets of educational and psychological services for teachers, speech pathologists, special educators, occupational therapists, lecturers, researchers, administrators, and psychologists became possible to a greater extent than previously. The acquisition of a display and workshop area has promoted an emphasis on this means of dissemination during the year. The staff of the unit have worked cooperatively to provide a highly professional expert advisory service through an integrated program of individual and group contacts as well as through a large number of publications for all sectors of the educational community.

There have been many visiting groups from Melbourne and Victorian country areas. Individuals have visited from most States and some overseas locations. Interstate needs have been partly met by the continuing program of visits by the Senior Advisory Officer and a dramatically expanded program of displays at centres throughout the country.

The traditional service by correspondence to educators remote from Melbourne has been supplemented by telephone, as much as financial prudence will allow. Recipients of these contacts have been very supportive of the strategy and enhanced dissemination has occurred to the benefit of both enquirers and the ACER.

Advisory staff have continued to provide all copy describing or advertising ACER publications or those from other publishers for whom the ACER acts as distributor. In this way the highest possible standard of professional literature has been maintained for the assistance of educators who are not able readily to examine materials in person. An important aspect of this work has been the preparation of the detailed descriptive annotations for catalogues of various kinds, principally the ACER Annotated Catalogue of Educational Tests and Materials which continues to be popular and the concept of which has been copied by others.

Reviewing or promoting the reviewing of tests, curriculum materials, or books has also been strengthened this year. The *Review Report Series* continues to be a vital component of the overall system of professional advice offered and six reports have been published during the year. Contacts with the press and journal editors have been nurtured and as a result ACER's work is becoming increasingly visible to the community. This is particularly important in relation to the work with set: research information for teachers. The effectiveness of set items and other advisory publications is very much a

function of how widely these short documents are circulated and used by curriculum consultants, guidance officers and advisory teachers in the field. However, there is strong evidence suggesting that ACER advisory staff are not the only consultants using these publications in in-service education situations.

As a consequence of the ACER's involvement with several publishers of test materials which have items available as micro-computer software, and as ACER itself is on the threshold of publishing test analysis and construction software, it was timely for the Advisory Services unit to acquire a micro-computer for demonstration and software analysis and review purposes. All staff of the unit are competent micro-computer users and are well prepared to assist schools with enquiries relating to this developing field as it relates to test administration, construction and interpretation. Plans are under consideration for enhancing some advisory services by the use of the micro-computer and the Distribution Services Division computer when it is commissioned.

Publications and Papers

ACER Newsletter No. 45, No. 46, and No. 47.

ACER Annotated Catalogue of Educational Tests and Materials.

ACER Educational Catalogue.

ACER Books-An Annotated List.

Psychological Advisory Services

Meredith Shears, Christine Martin

(The cost of Advisory Services was met entirely from ACER's income from sales.)

In order to facilitate the systematic dissemination of information, a range of brochures and sheets was prepared on particular areas of psychological assessment as well as specific tests. All the catalogues for the different professional groups have been updated—psychology, personnel, speech pathology and occupational therapy. A list of Vocational Guidance Materials was prepared and distributed to all careers teachers in Australia. A substantial number of enquiries were received following the release of this document. The Annotated Test Bibliographies have been updated, and new material added. The organization of displays throughout Australia has made heavy demands on the resources of the unit this year.

The two issues of the *Bulletin for Psychologists* were combined this year. Responses to the new format, which was typeset on the ITEK machine, from both contributors and readers have been very favourable.

The number of applicants for registration with the ACER as qualified test users has continued to increase during the year, the total number of applicants being 772. There have been many enquiries from speech pathologists regarding suitable language assessment materials, and the addition of

Teaching Resources publications to the range of material supplied has enabled the needs of speech pathologists to be more adequately met.

A very successful display of psychological tests, materials, and books was prepared for the annual conference of the Australian Psychological Society held at Melbourne State College. As well as advisory staff, other psychologists from the ACER were able to offer professional advice to the large number of people attending the display. Some interstate visitors took advantage of the opportunity to visit the ACER while they were in Melbourne.

Publications and Papers

ACER Bulletin for Psychologists No.32/No.33, September 1982/March 1983.

ACER Psychological Catalogue 1983-84.

ACER Speech Pathology Catalogue 1983-84.

ACER Personnel Catalogue 1983-84.

ACER Test Library Annotated Test Bibliography No. 7 Self Concept (Rev. ed.)
August 1982.

Tests for Use by Occupational Therapists (List).

PROGRAM OF LIBRARY AND INFORMATION SERVICES

Library

Margaret A. Findlay (Librarian), Christopher J. Cook, Elspeth Miller, Lula Psiliakos

(The Library was funded in part from the Core Grant, but largely from ACER's income from Sales.)

This project continues to provide a valuable library and information service to the ACER research staff, to Council members and to the Australian educational community at large. Library usage by staff was at a high level during the year, and 4950 items were borrowed from the collection. Once again, requests from non-ACER staff through other institutional libraries were high with an increased total of 1400 which may be attributed to the efficient service and speedy response time for these loans.

The high level of usage of the collection by staff and others may also reflect the quality of the content of the collection and its relevance to on-going educational research activities. The library collection has continued to grow steadily during the period under review to a total of 21 300 titles. Every endeavour is made by project staff to ensure that the collection is relevant to ACER projects.

Computerized information searches are undertaken for research staff through Australian and overseas systems including AUSINET, DIALOG and ORBIT. In addition manual searches made of such databases as Australian Education Index, ERIC, PsychINFO, Social Science Citation Index, Sociological Abstracts, Australian National Bibliography, and Books in Print.

Australian Education Index

Margaret A. Findlay, Elspeth Miller

(This project was included in the ACER Core Program.)

This project continues to provide access to educational information through the quarterly publication, the *Australian Education Index* and the AEI database which is available at present for on-line searching through the system, AUSINET.

It is now five years since the production of the hard copy *Index* was computerized and the database was created. Over 14 000 documents have been identified, collected and indexed into the system since 1979. These documents reflect the development, innovation, and research in Australian education and are selected from a wide variety of sources which include

monographs, research and technical reports, periodical articles, evaluation studies, conference papers and proceedings, opinion papers, bibliographies and book reviews. The steady increase of documents each year has been matched by an increase in the usage of both products. Three hundred and sixty copies of the hard copy *Index* are distributed on exchange and by subscription. Usage of the database during the period under review totalled 275 hours.

Two specialized clearinghouses, the National TAFE Clearinghouse and the Australian Clearing House on Library and Information Service, continue to participate with the ACER in the identification, collection, and indexing in specific areas. Both of these bodies prepare records for the hard copy AEI and the database and, in addition, take responsibility for the dissemination of the information by means of specialist hard copy indexes. Input is prepared by these clearinghouses according to AEI specifications on in-house word processing and computer facilities and then forwarded to the ACER by means of diskette or magnetic tape for final editing and processing.

Publications and Papers

Australian Education Index (M.A. Findlay and E. Miller, Eds). Vol. 25 (3 and annual cumulation); Vol. 26 (1,2). Hawthorn, Victoria: 1982–83.

Findlay, M.A. Australian clearinghouses and databases - Developments in the field of education. In G. Peguero (Ed.), Australian Clearinghouses and Databases: Towards a National Policy. Footscray, Victoria: Footscray Institute of Technology, 1983.

Bibliography of Education Theses in Australia

Margaret A. Findlay, Penny Martin

(This project was funded by the Australian Education Council.)

Citations for 276 theses of higher degrees which were accepted at Australian universities and colleges in 1980 were included in the database of the Australian Education Index in July 1982 and compiled into the first issue of the Bibliography of Education Theses in Australia which was published in late 1982. Details of the theses were collected with the assistance and full support of libraries and faculties of education of the universities and colleges. Theses for degrees at both master and doctoral levels were collected. Subject coverage was determined by topics which were relevant to education and not restricted to those produced through the faculties or departments of education. Descriptions of theses follow closely the format adopted by the Australian Education Index and include the author's abstract.

Continuation of the project during the year included the processing of entries for theses accepted in 1981. Bibliographic details and abstracts have been collected for 300 theses and indexing and subject analysis have been undertaken. It is expected that these citations will be included in the database during July and the second issue of the Bibliography will be published in August 1983.

Publications and Papers

Findlay, M.A. and Martin, P. Bibliography of Education Theses in Australia: A List of Theses in Education Accepted for Higher Degrees at Australian Universities and Colleges in 1980. Hawthorn, Victoria: ACER, 1982.

Australian Education Thesaurus

Margaret A. Findlay, Geoff Lavender (to September 1982)

(This project was funded by the Australian Education Council. Mr Lavender was seconded from the Secretariat of the AEC until September 1982.)

Over 8000 main terms and cross-references of the *Thesaurus of ERIC Descriptors* (9th edition, 1982) were assessed to determine their effectiveness in indexing and searching for Australian educational literature. The application of each ERIC index term to documents in the Australian Education Index database was compared with the actual language of the sample documents themselves. In this way terms from the *ERIC Thesaurus* which are particular to the United States education scene and its literature were identified and eliminated. Similarly, terms which, in Australia, have applications that are different from their US meanings were located. Additional terms particular to Australian usage were identified and the necessary additions made.

The ERIC Processing and Reference Facility in Bethesda, Md, USA was contracted to undertake the systematic thesaurus generation and manipulation, because the ERIC Facility utilized the programs which were designed specifically for this project's activities.

A draft thesaurus incorporating new and modified terms was compiled and circulated to the other education information services in Australia for comment. Group displays of terms were also distributed to subject experts who are interested in the terminology of their fields and who are familiar with literature searching using printed abstracts and indexes or computer data bases. Additional modifications incorporating suggestions from these institutions and experts were included into the final draft of the thesaurus.

Final processing and printing of the thesaurus is in progress and it is expected that the *Australian Education Thesaurus* will be published in late 1983

Philanthropic Trusts in Australia

Bronwyn Hay

(This project was funded from ACER's income from sales.)

The third edition of *Philanthropic Trusts in Australia* was published in 1980. The demand for this volume was maintained during 1982 and it was decided

to prepare a new edition. As the ACER compiles this collection for the Association of Australian Philanthropic Trusts, the Association was asked for comments and suggestions on the content of the entries. The Executive recommended the inclusion of telephone numbers; an option on stating the amount distributed; separation of trusts which received some government support from private trusts; updating the introduction; and the inclusion of short notes on the history of individual trusts.

Circular letters and questionnaires which incorporated these suggestions were sent to contributors to the previous edition and to prospective contributors suggested by the Association and by other trusts. Reminder letters were sent to trusts that did not return their copies of the first questionnaire, and further efforts were made to obtain information from trusts which did not respond to the reminder letters.

The Association approved the revised introduction and provided the preface. The number of trusts listed in this edition is 292, including 16 with their principal offices outside Australia. The total disbursement of funds—through the trusts that have supplied their current disbursement figures—amounts to almost \$40 million for private trusts, and more than \$76 million for trusts which receive government support as well as gifts and tax contributions. The disbursements from the large overseas trusts, from which only a small proportion of the total amount would be available to Australians, are not included in these figures.

Already a large number of orders have been received for the fourth edition. This indicates the continuing need for information on funds available for community needs—in welfare, education, the arts, the environment, and research in medicine, science, and social science.

By providing information about the many trusts in existence, the fourth edition of *Philanthropic Trusts in Australia* will assist foundations to distribute money to worthy recipients and will assist applicants to discover the potential sources of support for their particular projects. As direct Treasury grants to most areas of community welfare and research have been reduced or contained, more institutions are facing the necessity of seeking income from other sources. The ACER is providing an important service to many people by updating the information in *Philanthropic Trusts in Australia*.

Publications

Philanthropic Trusts in Australia. (4th ed.). Hawthorn, Victoria: Australian Council for Educational Research, 1983.

Australian Journal of Education

Bronwyn Hay

(During 1983, this project was included in the ACER Core Program.)

From July to December 1982, Professor Kevin Marjoribanks continued to take full responsibility for organizing the selection of articles for *The*

Australian Journal of Education. During 1983, while Professor Marjoribanks has been at Worcester College, Oxford, on sabbatical leave from The University of Adelaide, manuscripts and books for review have been sent to the ACER. These have been forwarded to appropriate advisory editors and reviewers; and, when the comments are received, the articles and comments are sent to Professor Marjoribanks for final selection.

The final copy editing and production have continued to be done by the ACER Publishing Unit.

Publications

Australian Journal of Education Volumes 26(2), 26(3), 1982, and Volume 27(1), 1983.

Australian Education Review

John P. Keeves

(This project was included in the ACER Core Program.)

During the past twelve months two numbers of the review have been published. Book bounty concessions have been received for the most recent number of the review and the concession will enable the review to be published in future at a significantly reduced cost and thus be sold at a substantially lower retail price.

Publications

Mills, J.M. Bilingual Education and Australian Schools. (Australian Education Review No.18). Hawthorn, Victoria: ACER, 1982.

Selby Smith, R. Australian Independent Schools: Yesterday, Today, and Tomorrow. ((Australian Education Review No.19). Hawthorn, Victoria: ACER, 1983.

set: research information for teachers

Peter Jeffery

(This project was funded from ACER's income from sales.)

The success of set as a research dissemination device has continued both through growth in the number of subscribers and by expansion of secondary users. Subscribers now exceed 3500 and both of the last two issues have become out of print before the next set has appeared. The publication of the set: index and the set: problem solvers chart has prompted heavy enquiries for and use of items published in set in 1979–80. This retrospective coverage will be continued for 1981–82 out of print set material during 1983–84.

A campaign to encourage reprinting of set material by the teachers union

journals and the press has been mildly successful and the efforts will continue despite the difficulties created by sectional interests.

The proportion of material of Australian origin in the publication has improved and there is a higher level of awareness in Australian academic circles of the possibilities of publishing in set. Indeed, there are now appearing publications which copy the concept of set. Despite this, academic and teaching circles are enthusiastic about set and the vital dissemination function it provides in the field of educational research.

General Information Services

Robin G. Rowlands (Honorary Staff Member), John P. Keeves

(This project was included in the ACER Core Program.)

Two issues of the State Institute News have been compiled for circulation to the members of the State Institutes of Educational Research. In addition work has been undertaken on the preparation and editing of articles for the International Encyclopedia of Education: Research and Studies.

Publications and Papers

- Keeves, J.P. Models and model building. In T. Husen and T.N. Postlethwaite (Eds), International Encyclopedia of Education: Research and Studies. Oxford: Pergamon Press (in press). [5000 words]
- Keeves, J.P. Profile analysis. In Husen and Postlethwaite, op. cit. [1000 words]
- Keeves, J.P. Multivariate analysis. In Husen and Postlethwaite, op. cit. [4000 words]
- Keeves, J.P. Suppressor variables. In Husen and Postlethwaite, op. cit. [1000 words]
- Keeves, J.P. and Thomson, J.D. Canonical analysis. In Husen and Postlethwaite, op. cit. [2000 words]
- Keeves, J.P. A reply to M. Skilbeck. Australian Journal of Education, 1983, 27(2),111-20.
- Keeves, J.P. Educational research. In *The Australian Encyclopaedia*. Sydney: Grolier Society of Australia (in press). [2000 words]
- Keeves, J.P. Educational associations, professional. In *The Australian Encyclopaedia*. Sydney: Grolier Society of Australia (in press). [200 words]

PUBLISHING

Don Maguire, Bronwyn Hay, Marcel Leman, Louise Coutts

Seven ACER Research Monographs were published this year as well as two numbers in the Australian Education Review series. A fourth edition of Philanthropic Trusts in Australia was produced and a new serial, Bibliography of Education Theses in Australia was introduced.

Tests published under the Testing Services Program were extended to include the South Australia Co-operative Entry Program and a revised edition of the Australian Scholastic Aptitude Test Students Information Bulletin was produced.

Among the tests published were the ACER Review and Progress Tests in Mathematics. The publication was an extensive undertaking, requiring the production of 84 Progress Tests, 22 Review Tests, four manuals for administration and interpretation in Addition, Subtraction, Multiplication and Division, and a Class Record Form. A great deal of effort went into designing the publication in order to simplify the presentation and usage of so much resource material.

Also in mathematics, a Review Test was published in the ACER Mathematics Profile Series.

Five ACER general ability tests at the intermediate or higher levels were published or revised, and one by arrangement with the Psychological Corporation, *Otis-Lennon School Ability Intermediate Test R*.

A record number of advertising brochures were designed and printed to promote the new items published during the year.

A feature of test publishing has been the design of machine-scorable answer sheets. The specifications for the successful production of these sheets are extremely stringent calling for accuracy in the artwork, printing, and trimming stages.

Books, Reports, and Periodicals Published

(a) Books, Reports, and Papers

The Free Kindergarten Union of Victoria 1908-80 by Lyndsay Gardiner.

Resource Allocation in the Government Schools of Australia and New Zealand: A Summary of the Staffing and Resources Study by John Ainley, John P. Keeves, Phillip McKenzie, and Andrew Sturman (ACER Research Monograph No. 15).

Eight Education Systems: Resource Allocation Policies in the Government School Systems of Australia and New Zealand (Staffing and Resources Study Report No. 1) by Phillip McKenzie and John P. Keeves (ACER Research Monograph No. 16).

Six Hundred Schools: A Study of Resources in Australian and New

- Zealand Government Schools (Staffing and Resources Study Report No. 2) by John Ainley (ACER Research Monograph No. 17).
- Patterns of School Organization: Resources and Responses in Sixteen Schools (Staffing and Resources Study Report No. 3) by Andrew Sturman (ACER Research Monograph No. 18).
- Curriculum Style and English Language: An Investigation into Current Practices in the Teaching of English Language in Australian Schools by Kevin Piper (ACER Research Monograph No. 19).
- Social Area Indicators of Educational Need: A Study of the Use of Census Descriptions of School Neighbourhood in Guiding Decisions Concerning the Allocation of Resources to Educationally Disadvantaged Schools in Australia by Kenneth N. Ross (ACER Research Monograph No. 20).
- The Context of Teaching and Learning: Report on the First Phase of the IEA Classroom Environment Study by Adrian M. Fordham (ACER Research Monograph No. 21).
- Adventures in Uncertainty by Mark Wilson (ACER Occasional Paper No. 17).
- Bilingual Education and Australian Schools by John Mills (Australian Education Review No. 18).
- Australian Independent Schools, Yesterday, Today, and Tomorrow by R. Selby Smith (Australian Education Review No. 19).
- Philanthropic Trusts in Australia (Fourth edition).

(b) Periodicals

- Australian Education Index compiled and edited by Margaret A. Findlay and Elspeth Miller.
 - Vol. 25 No. 3 September 1982, Vol. 25 Cumulation 1982, Vol. 26 No. 1 March 1983, Vol. 26 No. 2 June 1983.
- The Australian Journal of Education edited by Kevin Marjoribanks.
 Vol. 26 No. 2 August 1982, Vol. 26 No. 3 November 1982, Vol. 27 No. 1
 April 1983.
- Bibliography of Education Theses in Australia: A List of Theses in Education Accepted for Higher Degrees at Australian Universities and Colleges in 1980 compiled and edited by Margaret A. Findlay and Penny Martin.
- ACER Newsletter edited by Peter Jeffery.
 - No. 45 July 1982, No. 46 November 1982, No. 47 March 1983.
- Bulletin for Psychologists
 - Nos 32/33 September 1982/March 1983 edited by Meredith Shears.
- State Institute News No. 7, October 1982, No.8 April 1983.

Advisory Services/Sales Publications

ACER Educational Catalogue 1983. (New format, fully revised to include ISBN and catalogue numbers)

ACER Psychological Catalogue 1983-84.

ACER Psychological Price List 1983.

ACER Annotated Catalogue of Educational Tests and Materials. (Updated and revised pages produced for registered users).

ACER Speech Pathology Catalogue 1983-84.

ACER Personnel Catalogue 1983-84.

Brochures and Order Forms: ACER Newslettter; Free Kindergarten Union of Victoria; Tertiary Mailing—9 brochures on 22 ACER books and journals; ACER Mathematics Tests poster; ACER Reading Tests brochure; ACER Intermediate Tests F and G brochure; STEP and SET letters; ACER Annotated Catalogue; New Zealand Item Bank; WAIS-R; OLSAT Intermediate Test R; RAPT; ACER Guide to Early School Resources; Key Math; set wall chart; ACER Books; AEI; AGS; English Skills Assessment; ACER Listening Test 14L; Career Education and Guidance; Reading Approval Guide; SWOT; Vocational Guidance Materials; Spell-write.

Tests Published

(a) Testing Services Publications

- Co-operative Scholarship Testing Program: Candidates Registration Form; Candidates Information Bulletin; List of Centres; Tests—Written Expression Levels 1 and 2, Mathematics Level 1, Humanities Levels 1 and 2, Mathematics and Science Level 2; Answer Booklet—Levels 1 and 2.
- Co-operative Scholarship Testing Program, Nauru—Upper Level and Lower Level: Tests 1 and 4—Written Expression; Test 2—Mathematics.
- Year Eleven Entry Test (YEET): Tests 1 and 4, Written Expression.
- Australian Scholastic Aptitude Test Series L—Book I, Book II, and WA version. Photographic masters forwarded to Queensland and Western Australia for printing.
- ASAT (ACT): Students Information Bulletin (Revised); Sample Collection of Questions (including Answer Sheet and Score Key). Photographic masters of Students Information Bulletin (Revised) forwarded to Queensland and Western Australia for printing.
- South Australia Co-operative Entry Program: Candidates Registration Form; List of Examination Centres; Notes on Administration; Tests—Book 1 Reading and Humanities, Book 2 Mathematics Achievement and Comprehension, Book 3 Language Usage, Book 4 Written Expression; Answer Booklet.

(b) Diagnostic Tests, Achievement Tests, and Teaching Aids

Wechsler Adult Intelligence Scale—Revised (Australian adaptation): Supplement; Record Form; Adhesive overlays; printed envelopes.

ACER Intermediate Test F: Test Booklet; Manual; Score Key.

ACER Intermediate Test G: Test Booklet; Manual; Score Key.

Otis-Lennon School Ability Test Intermediate Form R (Australian adaptation): Test Booklet; Answer Sheet Type T; Score Key Type T; Manual; Record of Class Performance.

ACER Review and Progress Tests in Mathematics (RAPT).

RAPT in Addition: Progress Tests 1A to 8B (16 tests); Review Tests 1A to 1B (4 tests); Manual for Administration and Interpretation.

RAPT in Subtraction: Progress Tests 1A to 8B (16 tests); Review Tests 1A to 1B (4 tests); Manual for Administration and Interpretation.

RAPT in Multiplication: Progress Tests 1A to 12B (24 tests); Review Tests 1A to 3B (6 tests); Manual for Administration and Interpretation.

RAPT in Division: Division 1 Progress Tests 1A to 7B (14 tests); Division 2 Review Tests 1A to 2B (4 tests); Manual for Administration and Interpretation.

Common Class Record Form

ACER Advanced Tests AL—AQ (2nd edition) and BL—BQ: Test Booklets; Manual; Score Keys.

ACER Higher Test Form WL-WO: Manual; Score Keys.

ACER Advanced Test B40 (Revised) Test Booklet; Score Key; Manual with Supplementary Data.

ACER Test of Cognitive Ability: Test Booklet; Manual (Preliminary); Score Key.

ACER Mathematics Profile Series—Review Test: Test Booklet; Self-Scoring Answer Sheet; Teachers Handbook.

Optical Mark Reader Standard ACER Type A Answer Sheet.

Reprints

There were 251 separate reprints during the year including Reading Appraisal Guide.

DISTRIBUTION SERVICES

Eugene V. Ivan, Alan Wilkins

The sales effort was hampered in the 1982–83 financial year by several factors: until late in the year, no major new products were released—traditionally a significant boost to sales; and there have been substantial increases in the costs of imported items, resulting from higher supplier prices, less favourable exchange rates, and marked rises in freight and handling costs. These two factors contributed to a shortfall of some \$100 000 in our budgeted sales of \$2.2 million.

Operating costs have also risen because of increased domestic freight charges and given, that the ACER supplies to anywhere within Australia at its published prices, this has had a detrimental effect.

Another significant problem has been the rising value of stock held within our store. Every effort has been made to attempt to reduce the value of stock down to an economic level, but this has required that we do not expand the range of imported stock without excellent reason, and that we carefully check, the ordering of stock from overseas, particularly from the United States.

One further matter that has been of concern during the year has been the question of establishing agencies for our tests and materials in other parts of Australia. An important factor influencing our decisions has been that we only allow a discount of 5 per cent on orders valued in excess of \$10 000. Thus to provide a greater discount or commission to an agent would involve the necessity of allowing a similar discount on all major orders. Consequently, for the time being, we have rejected all proposals to set up agencies in other parts of Australia.

At the beginning of the year, an order was placed for a computer for the Distribution Services Division. It was necessary for appropriate software to be developed to meet our particular needs and this has proved more complex and time-consuming than initially envisaged. We are now hopeful that a new computerized system will be in full operation by 1 January 1984.

Late in the financial year several new items were published, and in the year ahead it has been seen as desirable to develop new approaches to promotional activities to take full advantage of their potential.

FINANCE

Accountant-Miss P. Staurenghi

For the first time, in 1982–83 a policy of supplementation for increases in salaries, which have occurred as a consequence of decisions of the Academic Salaries Tribunal, has been provided to the ACER by the Commonwealth and State Governments. This has enabled us to plan with more confidence the undertaking of studies which are funded by the Core Grant. However, the certainty in this area of our funding has been offset by the uncertainties associated with trading. Nevertheless, the low level of salary increases which have occurred during the year has enabled us to maintain a balanced budget, without drawing on the provision made at the beginning of the year for salary award claims that might have a substantial back-pay component.

CONCLUSION

An innovation during the year has been the setting up of a Management Advisory Group to advise the Director on both planning and budgetary matters. The Group has examined regularly levels of both general and project expenditure and have studied analytically the long-term trends in the ACER's finances that were published in the *Fifty-Second Annual Report* 1981–82. Consideration has also been given by the Group to the planning and the conduct of the Review of the ACER's program of research, development, and service which will take place in late September and early October of 1983.

Sources of Funding for the ACER

The Australian Council for Educational Research receives its funding for its program of research, development, and service from four sources:

- 1 from the Core Grant received from the Commonwealth Government and the seven State Governments (projects funded from this source are undertaken within the ACER Core Program);
- 2 from specific grants (Funded Projects);
- 3 from income received from users (Service Projects);
- 4 from income received from sales (Maintained Projects).

In Table 1, the income received from the Core Grant, for Funded Projects, and for Service Projects, together with the total expenditure on the ACER's program of research, development, and service for the years 1972–73 to 1982–83, have been recorded.

CONTRIBUTIONS TO COUNCIL FUNDS

The Council acknowledges, with thanks, the following contributions received during the financial year ending 30 June 1983.

Australian Governments: General Grants for Research

Commonwealth	\$420 000
New South Wales	\$150 390
Victoria	\$114 639
Queensland	\$ 64 621
South Australia	\$ 38 605
Western Australia	\$ 35 794
Tasmania	\$ 12 462
Northern Territory	\$ 3105

Special Grants

Grants to specific projects were made by:

Australian Education Council	\$ 15 300
Bureau of Labour Market Research	\$ 12 000
Commonwealth Department of Education	\$ 87 327
Commonwealth Schools Commission	\$ 10 000
Commonwealth Tertiary Education Commission	\$ 12 500
Victorian Education Department	\$ 82 500
Victorian Post Secondary Education Commission	\$ 7500
National Institute for Educational Research, Tokyo, Japan	\$ 22 683

Table 1 ACER-Income, Expenditure, and Trading, 1972-73 to 1982-83

Year	Income		Research and		
	Core grant	Funded projects	Service projects	development expenditure	Trading total turnover
	\$	\$	\$	\$	\$
1972-73	140 010	96 325	456 507	817 061	622 435
1973-74	267 018	165 253	587 590	1 097 030	722 525
1974-75	375 000	311 000	157 000	1 116 500	992 643
1975-76	422 979	426 008	199 245	1 221 558	1 101 050
1976-77	431 974	286 439	162 639	1 100 311	1 263 156
1977-78	520 000	104 071	184 114	1 059 150	1 441 131
1978-79	550 000	280 293	199 830	1 294 193	1 403 015
1979-80	590 000	345 474	218 581	1 451 825	1 577 876
1980-81	638 000	314 742	246 814	1 495 562	1 658 446
1981–82	732 392	209 913	295 717	1 583 540	1 987 098
1982-83	839 616	228 475	341 329	1 712 899	2 095 179

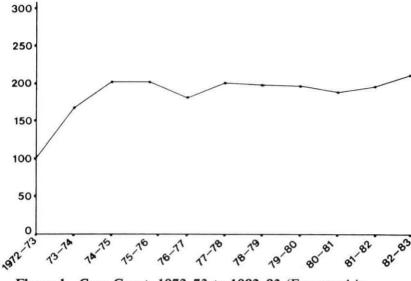


Figure 1 Core Grant, 1972-73 to 1982-83 (Expressed in 1972-73 Prices: 1972-73=100)

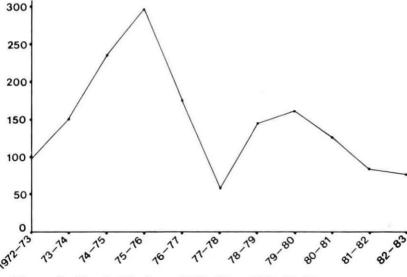
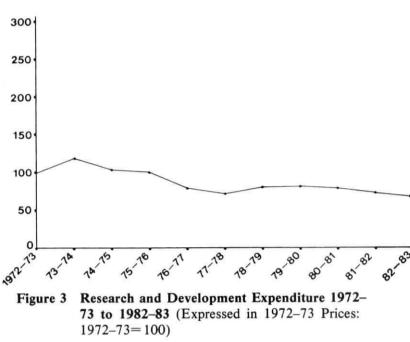
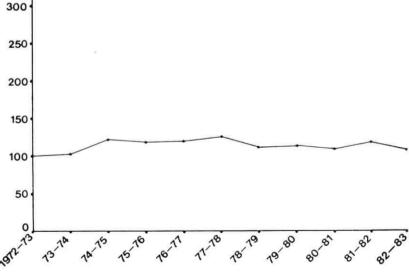


Figure 2 Funded Projects, 1972–73 to 1982–83 (Expressed in 1972–73 Prices: 1972–73=100)





Trading Turnover 1972-73 to 1982-83 (Expressed Figure 4 in 1972-73 Prices: 1972-73=100)

Overseas Links

During 1983 the ACER has become an APEID Centre to promote educational innovation and development in the Asian region. This has led to visits to the ACER by two internship trainees from overseas during the year under review:

- 1 Miss Luz Magallanes, from SEAMEO Regional Center for Educational Innovation and Technology, Manila, the Philippines worked in the ACER Library and Information Services Unit under an ADAB training fellowship for a period of 10 weeks during February to May 1983.
- 2 Mr S.B. Thoradeniya from the Curriculum Development Unit, Colombo, Sri Lanka worked in the Survey and Statistical Analysis Services Unit under a UNDP training fellowship for a period of 10 months commencing in March 1983.
- Visitors to the ACER from overseas during 1982-83 have included:
 - Dr Soroeso, BP3K, Ministry of Education, Djakarta, Indonesia
 - Mr E.L. Wijemanne, Ministry of Education, Colombo, Sri Lanka
 - Mr E.J. De Silva, Ministry of Education, Colombo, Sri Lanka
 - Mr T.A. Azez, Kuala Lumpur, Malaysia
 - Mr A. Rahman, Kuala Lumpur, Malaysia
 - Professor Maurice Galton, University of Leicester, England
 - Professor Alan Kennedy, University of Dundee, Scotland
 - Professor Abdul Halim Othman, National University of Malaysia, Malaysia
 - Dr William Gatherer, Lothian Education Regional Council, Edinburgh, Scotland
 - Professor A. Harry Passow, Teachers College, Columbia University, New York, USA
 - Professor Graham Kalton, Survey Research Center, Ann Arbor, Michigan, USA

ACER Staff

(as at 1 July 1983)

DIRECTOR

John P. Keeves, BSc, DipEd, MEd, PhD, fil dr, FACE, FASSA

ASSISTANT DIRECTORS

John F. Izard, TPTC, BSc, BEd, MEd, PhD, MACE Trevor H. Williams, BSc, DipEd, BA, MA, PhD, MACE

RESEARCH AND DEVELOPMENT

*Raymond Adams, BSc(Hons), DipEd

John G. Ainley, BSc, MEd, PhD, MACE, ARACI

Margaret C. Batten, BA, BEd, MACE

Sidney F. Bourke, BSc, BA, LittB, MEd, MACE

*David W. Brown, BSc, DipEd

Jeffery J. Clancy, BA

Marion M. de Lemos, BSc(Hons), MSc, PhD, MAPsS

*Meredith Doig, BA, DipEd, MEd Stud

*Stephen Farish, BSc(Hons), DipEd

Allyson Holbrook, BEc, DipEd

Warren Jones, BSc(Hons), PhD, MAPsS

*Christopher M. Kay, BSc, DipEd

Janice J. Lokan, BA, DipEd, PhD, MAPsS, MIAAP

Noel McBean, BA, DipEd (part-time)

Phillip A. McKenzie, BEc(Hons), DipEd, MEd

George Morgan, BSc(Hons), DipEd, MSc, MEd

*Lesley Howard Murdoch, BA, DipEd, MEdStud

Kevin J. Piper, BA(Hons), DipEd, MEd

Malcolm J. Rosier, BSc, MEd, PhD, fil dr Helga A.H. Rowe, BA(Hons), PhD, MAPsS, MIAAP

Robin G. Rowlands, BA, MEd, PhD, FACE (honorary member of staff)

Jenny Slater, BA, GradDipSecStuds (part-time)

*Jackie Sykes, BA(Hons), DipEd

A. Graham Ward, MA, MEd

*Lee Waddell, BA, MA, Teaching Credential

Evelyn Watson, BA

Graeme P. Withers, BA, ACTT

ADVISORY SERVICES UNIT

Peter Jeffery, TPTC, BA, MEd (Head of Unit)

Pamela Burns (part-time)

Judith Eppinger, TPTC

Christine Martin, MA, DipEd, MAPsS (part-time)

Meredith Shears, BA(Hons), DipEd

*Seconded staff from the Victorian Education Department

LIBRARY AND INFORMATION SERVICES UNIT

Margaret A. Findlay, BA, ALAA (Head of Unit) Christopher J. Cook, BA(Hons), ALAA Elspeth Miller, BA(Hons), GradDipLib Lula Psiliakos, ALAA (part-time) Betty J. Segar (part-time)

PUBLISHING UNIT

Don Maguire, HNC (Head of Unit) Louise Coutts, DipArt & Design (Graphic Design) Bronwyn Hay, BA(Hons) (part-time) Marcel Leman

ACCOUNTANCY

Phyllis M. Staurenghi, BA, BCom (Accountant) Ruth Ambrose Marie Crisp Fay Harvey (part-time) May Young

SALES AND DISTRIBUTION

Eugene V. Ivan, BSc (Manager) Alan Wilkins Peg Engellenner (part-time) Bruce Fulton

Stan Gale

Jan Gardiner

Judy Gilder

Peter Gilder

Geoffrey Howard Steve O'Neill

Maisie Peel

John Wilson

SECRETARIES TO THE DIRECTORS

Marjorie Balloch Win Boyce Margaret Taylor Yvonne Allen (part-time)

GENERAL SECRETARIAL AND OFFICE SERVICES

Carolyn Bretherton Judith Clark Gwenneth Dobell (part-time) Heather Hale Gloria Locock Margaret Miller

Rhonda Redfern (part-time) Beatrice Sciberras Carol Shackleton (part-time)

CLERICAL AND TECHNICAL ASSISTANTS

Ruth Jeffery, TPTC Anne Lowry Robyn Sperling

State Institutes of 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 practices 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.

NEW SOUTH WALES

Office Bearers

Patron: Sir Harold Wyndham

President: Associate Professor N. Baumgart

Vice-Presidents: Ms S. Groundwater-Smith, Dr J. Harvey, Mr A. Watson

Secretary: Mr I. Burnard Treasurer: Dr Beth Southwell

Delegate to ACER: Associate Professor R. Debus

set Committee Members: Dr L. Higgins

Committee Members: Dr W. Donovan, Ms G. Macleod, Mr J. Relich, Mr J.

Shellard (Editor, Bulletin)

Meetings

23 July 1982. Dr D. Davis, Dr W. Coppell, Dr A. Lindsay, Mr T. Koop, Centre for Research in Education and Work, Macquarie University, 'Research in education and work'

27 August 1982. Mr A. Skinner, NSW Department of Education, 'Where have we got with reviews? A suggested approach to the integration of research findings'

24 September 1982. Annual General Meeting. Dr R.W. Rawlinson, Chairman, Education Commission of New South Wales, 'Two years on: The Education Commission of NSW'

22 October 1982. Members' work in progress. Dr I. Smith, University of Sydney, 'Self concepts'; Dr L. Higgins, NSW Department of Education, 'A methodology for educational demography'

26 November 1982. Dr J. Sheppard, Cumberland College of Health Sciences, 'Creative thinking'; Mr A. Watson, St George Institute of Education, 'Cognition and the reading process'

23 March 1983. Dr R. Phillips, Dr E. Furniss, Mr H. Schaafsma, Mr P. Brownie, and Dr D. Bishop, 'Educational research at St George Institute of Education, Sydney College of Advanced Education'

27 May 1983. Mr R. Cavenagh, Education Commission of NSW, Dr B. Donovan, ACT Schools Authority, Canberra, Dr F. Sharpe, NSW Department of Education, and Mr I. Vacchini, NSW Board of Senior School Studies, 'The upper secondary curriculum: What is currently happening?' 24 June 1983. Dr J. Powell, Director, Tertiary Education Research Centre, and Dr J. Sweller, School of Education, University of New South Wales, 'Educational research at the University of New South Wales'

ACER Review

Dr R. Debus co-ordinated the findings of three groups of members who prepared responses to ACER position papers associated with the review of the ACER. The co-ordinated response was forwarded with executive endorsement as an appropriate statement for attention by the ACER.

Research Funding

The Executive has maintained a watching brief on developments in research

funding. It is pleased that through the contact of the President, Associate Professor Neil Baumgart, with AARE it has been possible to further efforts to obtain recognition of the importance of national funding for educational research along the lines sketched in the last annual report of the Institute.

Membership

In September 1983, there were 98 financial members and about 20 members yet to renew their membership.

Publications

Rawlinson, R.W. Two Years on: The Education Commission of NSW: Address . . . at the Annual General Meeting, Macquarie University, North Ryde, October 1982. Sydney: NSWIER, 1982.

Mr J. Shellard has prepared the Bulletin of Proceedings for 1982.

Prizes

Ms S. Groundwater-Smith, University of Sydney Ms R. Saunders, University of New South Wales

NEWCASTLE BRANCH

Office Bearers

President: Dr R. Rowe

Vice-President: Professor J.B. Biggs

Secretary: Mr P.W. Day

Treasurer: Mr W. Howard

Delegate to ACER: Professor J.A. Keats

Committee Members: Mr J. Foster (set Advisory Committee), Mr P.J.

Moore, Mrs W. Schiller

Membership Committee: Mr A. Nicholas, Dr J. Miles

Meetings

July 1982. Dr M. Jurd, Newcastle College of Advanced Education, 'Adult learning and independent study'

24 February 1983. Dr R.A. Schultz, University of Alberta, 'New research on teacher expectancy and student preferences'

20 April 1983. Dr J.A. Ramsland, 'The child-saving movement in 19th century NSW-An overview'

25 May 1983. Associate Professor C.A. Engel, 'Research in medical education'

ACER Review

Members spent a great deal of individual and collective time, including a full meeting of the branch, in discussing and preparing a submission concerning the review of the ACER.

Membership

For 1983, there are 35 members.

Prizes

The IER Prize awarded by the Newcastle Branch was this year prsented to, jointly, Dr J.A. Ramsland and Mr C. Gordon.

Financial Statement

The balance for the branch was \$745.48 in November 1983.

VICTORIA

Office Rearers

President: Dr L.W. Shears

Vice-Presidents: Mr A.J.P. Nattrass, Dr G.J. Whitehead

Secretary: Mr M.W. Boyce

Assistant Secretary and Membership Officer: Mr K. Hall

Treasurer: Mr F. Handley

Committee: Mrs M. Ainley, Mr K. Frampton, Mrs C. Perry, Ms A. Ridsdale, Dr R. Rowlands, Ms M. Shears, Dr G.J. Whitehead, Mr M.

Williams

Delegate to ACER: Dr G.J. Whitehead Editor of Publications: Mr M.W. Boyce PET Group Representative: Mr J. Silva Research Group Representative: Mr I.L. Ball

Honorary Auditor: Dr G.J. Allen

Meetings

13 August 1982. Fifty-first John Smyth Memorial Lecture. Professor R.J. Selleck, 'Is he to be a little god almighty?'

10 September 1982. Dinner club meeting. 'Youth'

18 March 1983. Annual Meeting. Dr J. Lokan and Ms M. Shears, 'How important is work?'

8 April 1983. Dinner club meeting. 'Computers in schools'

29 June 1983. Fifty-second John Smyth Memorial Lecture. Professor R.T. White, 'The end of schools as we know them: The implications of recent educational research for learning, teaching, and school organization'

ACER Review

The Institute made a two-part submission to the review of the ACER. The first part was based on a survey of VIER members, while the second part provided a series of points that the executive put forward for consideration.

Membership

There were 237 financial members in 1982. As in previous years, an analysis of membership indicated that school principals and vice-principals formed the largest group of members with tertiary lecturers and classroom teachers the next in order.

Publications

Two issues of the VIER Bulletin, Numbers 49 and 50, were produced and they contained texts of major VIER lectures as well as other papers and book reviews.

Research Group

Open lecture. Dr G. Trebilco, 'Career education-Does it make a difference'

The group is continuing an interest group to investigate the role of curiosity in learning.

Primary Education Today Group

26 and 27 October 1982. Lecture series. Dr N.G. Curry and Ms K. West. Monthly group meetings were also held.

G.S. Browne Prize

Ms T. McDougall, Richmond West Primary School.

This prize was awarded in conjunction with *The Age* Teacher of the Year Award.

Financial Statement

The net funds held on 31 December 1982 were \$657.72.

QUEENSLAND

Office Bearers

Patron: Mr W.W. Wood President: Mr P.J. Varley

Vice-Presidents: Dr E.D. Hobbs, Mr R. Worthington, Dr J. Cotterell

Secretary: Mrs D.M. Muir Treasurer: Mr P.A. Robinson

Delegate to ACER: Mr N.D. Alford

Advisory Editor of The Australian Journal of Education: Mr R.S. Warry set Advisory Committee Members: Mr J.E. Tunstall, Mr C. Crain Committee: Ms J. Borthwick, Emeritus Professor B.H. Watts, Mr C. Dean,

Mr R. Skidmore

Meetings

July 1982. Mr G.F. Berkeley, Assistant Director-General of Education (Schools), 'Transition education reviewed'

24 November 1982. Mr A. Knott, Solicitor, 'Teachers' legal and professional responsibility for their students' learning'

ACER Review

February—April 1983. Meetings concerning submission of the review of the ACER.

Membership

Current membership is 76-down 21 on 1982.

Publications

Two QIER Journals were published.

SOUTH AUSTRALIA

Office Bearers

President: Dr D.K. Briggs

Vice-Presidents: Dr B. Webber, Sr J. Redden

Secretary: Dr E. Sandercock

Treasurer: Dr D. Dent

Delegate to ACER: Dr E. Sandercock

Advisory Editor of The Australian Journal of Education: Dr A. Shinkfield Committee: Dr J. Grosvenor, Mr G. Hermann, Ms J. Keightley, Dr A.

Shinkfield, Mr R. Slater

Meetings

6 July 1982. Dr H. Rowe, Australian Council for Educational Research, 'Early identification and intervention—The theory, research basis and application of the ACER Early School Series for identifying early strengths and possible developmental weaknesses of early school beginners'

22 July 1982. Professor G. Hall, Research and Development Center for Teacher Education, University of Texas, Austin, 'Management of curriculum change in schools, with particular reference to the concerns based adaption model (BAM)'

3 August 1982. Mr H.K. Coughlan, Chairman, TAFE Council, and Mr G. Hermann, Director, TAFE National Research Centre, 'The development and operation of the TAFE National Research Centre'

10 August 1982. Professor H. Beare, Faculty of Education, University of Melbourne, 'The structural reform movement in Australian education: The Keeves enquiry in a national context'

19 October 1982. Mr J. Gladwell, Adviser, Secondary School Management, and Professor C. Power, School of Education, Flinders University, 'Selecting a secondary school: The criteria for choice'

22 May 1983. Annual General Meeting. Dr J. Mayfield, Acting Director General of Education, 'OECD'

ACER Review

The Committee decided to involve members in the review of the operation of the ACER by inviting submissions from its own committee members and constructing a list of statements based on these. A document comprising these statements was circulated to all members with a request for comments. A summary of the responses which were received was forwarded to the ACER.

Membership

There has been a small increase in membership from the 1982 figure of 62 to the present one of 65.

Financial Statement

The Institute holds \$597 in deposit stock, \$500 with AGC, and \$600 in Australian Savings Bonds. There is a general fund balance of \$23.

Funding of Research

A sum of approximately \$50 was spent on assistance with postage costs for questionnaires sent to all members, for a survey conducted by a graduate student. This was in accordance with the policy of supporting small research projects.

WESTERN AUSTRALIA

Office Bearers

President: Dr M.L. Clark Vice-President: Dr A. Rvan

Secretary/Treasurer: Mr J. Oliver Delegate to ACER: Dr M.L. Clark

Advisory Editor of The Australian Journal of Education: Dr P. Deschamp Committee: Dr D. Andrich, Dr B. Haynes, Dr L. King, Dr G. Masters, Mr W. Vivian

Meetings

8 July 1982. Mr C. Bant and Mr W. Vivian, 'Teacher evaluation (TAIG)' 26 July 1982. Dr G. Hall, 'Concerns-based approaches to teaching: Concepts and recent research studies'

29 July 1982. Dr N. Bardsley and Mr A. Lonsdale, 'Issues in professional development of heads of academic departments'

24 August 1982. Dr K. Tobin, 'Introduction to teacher assessment instruments (TAIG)'

30 September 1982. Dr J. Cullin, 'Learning to cope with failure'

8 March 1983. Open meeting. 'A review of the role of the WAIER' 30 March 1983. Dr J. Izard, 'ACER test research and development with special reference to the interpretation of modern test calibration methods for teachers'

14 April 1983. Dr W. Gatherer, 'Assessment research at SCRE with special reference to transition from primary to secondary'

1 June 1983. Ms R. Sharp, 'Computers in education: Some reflections on their dangerous responsibilities'

23 June 1983. Teacher Assessment Interest Group (TAIG), 'Teachers discuss teacher assessment'

ACER Review

The review of the ACER was undertaken in conjunction with the review of the WAIER. Using a set of principles and implications as a guide, a questionnaire was developed and refined by the review panel and distributed to all WAIER members. The material was collated and presented to the executive. A submission to the ACER review panel from the WAIER Executive Committee on behalf of the WAIER membership was prepared.

Interest Groups

As a by-product of the on-going review of the WAIER, the executive has fostered the development of interest groups. The Teacher Assessment Interest Group was the first to be established and has been followed by a Multi-Cultural Interest Group (1983-84). Each group functions relatively informally, attracting participants from within and outside the WAIER, and liaising through the Secretary/Treasurer, who arranges publicity through the Institute and reasonable support for catering.

Prizes

WAIER prizes for graduating students who best represented an involvement in educational research were in 1982–83:

Mr A.M. Booker, WAIT

Mr P. Dench, WAIT

Mr J. Hammond, Murdoch University

Dr B. Sheridan, University of Western Australia

Miss A. Connor, WACAE, Nedlands Campus

Mrs M. Cutten, WACAE, Churchlands Campus

Mrs A. Huxtable, WACAE, Mount Lawley Campus

Miss A. Wesson, Claremont Campus

TASMANIA

Office Bearers

President: Professor P.W. Hughes Vice-President: Mr L. Blazely

Secretary/Treasurer: Mr R. Cooper

Committee: Dr W. Ransley, Mr D. Phillips, Mrs H. Hocking

Meetings

21 July 1982. Mr P.P. Lynch, University of Tasmania, Centre for Education, and Mr L. Blazely, Education Department, Research Branch, 'Research by survey'

4 August 1982. Mrs E. Dunn and Mr R. Stoessinger, Education Department, Research Branch, and Mr D. Mallick, University of Tasmania, Centre for Education, 'Action research'

25 August 1982. Professor K. Collis, University of Tasmania, Centre for Education, 'The clinical interview'

13 August 1982. Mrs H. Felton, Curriculum Centre, 'Case studies'

The main activities for 1983 have been on the organization of seminars on research methods in the following areas:

Professor B. Rose, 'Research in history';

Dr E. Guilder, 'Research in zoology';

Dr B. Rutherford, 'Research in economics';

Dr B. O'Grady, 'Research in chemistry';

Professor D. McNicol, 'Research in psychology';

Professor P. Hughes, 'Overview and relevance to education'.

Research Funding

The Institute has kept in touch with AARE to develop submissions on research funding.

NORTHERN TERRITORY

Office Bearers

Patron: Dr J. Eedle

President: Dr F.C. Durling

Vice-Presidents: Dr E. Burke, Ms M. Moeckel

Secretary: Dr P. Buschenhofen Treasurer: Mr D. Moeckel

Delegate to ACER: Dr N.F. Bowman

Advisory Editor of The Australian Journal of Education: Dr N.F.

Bowman

Committee Members: Dr K. Ford, Ms B. Hulme, Ms C.

Pietruszkiewicz, Mr D. Thompson

Meetings

23 September 1982. Mrs Margot Moeckel, NT Department of Education, 'Ethnomusicology of the Iwaidja people'

18 October 1982. Ms Hazel Wigmore, 'School refusal and truancy among adolescents'

11 November 1982. Dr Lyn Walker and Mr Frank Alcorha, Darwin Community College, 'Educational testing in the Northern Territory'
 1 December 1982. Dr David Ingram, Darwin Community College,

1 December 1982. Dr David Ingram, Darwin Community College, 'Language competent test development'

9 March 1983. Dr Omond Solant, ex Chancellor of the Toronto University and Chairman of the Science Advisory Council for the North-west Territories, 'Educational development in the NW Territory of Canada' 22 March 1983. Professor Erkki Asp, Institute of Sociology, University of

Turku, 'Lapps today'

5 May 1983. Dr Gillian Lewis, PEO Early Childhood, Professional Services, Darwin, 'Information processing capacity and length measuring capacity in young children and implications for curriculum planning'

4-5 June 1983. Research seminar. Dr R. Stratton, 'Small-scale research'

Membership

The current membership is 42. This figure represents 10 fewer members than in the previous year, but that year's figures were considerably higher than those of the year before. Given the context and the size of the population, we can be reasonably satisfied if we can maintain a membership total between 40 and 50.

Publications

None as yet, but a structure has been devised and various authors designated to prepare contributing chapters towards a 1984 publication to be entitled, 'Small Scale Research Techniques'. Simply written, this work will embody a step-by-step approach designed to assist those undertaking research for the first time.

Prizes

Preliminary advertisements have already been placed to advertise the award of two medallions which take place at the Annual General Meeting in July 1984.