

SOUTH AUSTRALIA

Schools in South Australia provided high quality schooling to 246,205 full-time students who attended 651 government schools and 194 non-government schools, of which 109 were Catholic and 85 independent.

Collaboration and cooperation between education systems is a valued tradition which helps to ensure the best possible opportunities are available for all South Australian students.

Goals for 1996

Government schools

The Department for Education and Children's Services (DECS) is committed to providing high quality learning, teaching and care within an integrated and supportive learning organisation. The broad areas targeted as priorities for 1996 were:

- focusing on the early years as the foundation for life-long learning;
- continuing to provide quality learning and teaching by improving standards of learning, teaching and assessment and ensuring that all students have opportunities to improve their learning;
- streamlining communications and promoting closer links between the community, parents and worksites.
- using information and communication technology to enhance learning, strengthen the curriculum and to improve organisational effectiveness;
- developing a framework for local decision-making and management; and
- achieving organisational improvement through implementing performance management, establishing a principals' centre, improving employee relations and the consultation process, improved financial, risk and asset management and internal audit processes, and implementing quality assurance procedures.

Catholic schools

The South Australian Commission for Catholic Schools (SACCS) is committed to Catholic schools working in partnership with parents to educate young people in all dimensions of their lives, so that they are able to participate, to the best of their ability, in the communities in which they live. The following objectives were priorities in 1996:

- the development of a means to ensure an equitable resourcing of Catholic schools;
- the continuation and the further development of collaborative approaches to the provision of schooling for young people;
- the consideration of models of schooling for Catholic schools in South Australia;
- a focus on middle schooling;
- a review of SACCS in order to further develop collaborative decision-making and the community's participation in the development of Catholic education;
- the further review of policies and the development of new policies, such as that on gifted and talented students; and
- the provision of specific projects, such as the Vocational Education and Training Project, to assist schools.

Independent schools

The South Australian Independent Schools Board remains committed to achieving, for all students, a fundamental entitlement to an excellent education that is relevant to their individual needs and to the needs of Australia. As a result, independent schools in South Australia had objectives which:

- strove to ensure all students had access to a high quality general education;
- promoted equality of educational opportunity;

- provided sound moral and spiritual development in ethics and values;
- helped students gain a clear sense of identity;
- enabled students to participate in a democratic Australian society;
- provided for physical development and personal health;
- aimed to ensure young people gained appropriate career education and a knowledge of the world of work; and
- provided a foundation for continuing education and a positive attitude to life-long education which will equip students for both traditional and non-traditional occupations, and for life in a changing society.

There is a very strong relationship between the objectives and those of the Common and Agreed National Goals. This is especially so in the case of excellence and equity, general education and the areas of student learning and vocational education.

1996 initiatives

Government schools

The Early Years Strategy, with its focus on improving the early identification of learning difficulties and providing support for students in the early years of schooling, was a key initiative. A professional development program on literacy and early intervention for R–3 teachers and the *Early Years Literacy Profile* were completed.

In 1996, DECS provided \$2 million in grants to support early years programs for R–3 students, with declared disadvantaged schools receiving additional grants from the Commonwealth allocation of \$5.18 million. Schools developed and evaluated early assistance plans to support students at risk in their early literacy learning and reported on the plans in the context of the Department's quality assurance framework.

Gifted children and students

The first secondary school for students with high intellectual potential (SHIP) was selected to introduce a program for 30 gifted students in 1997. Special interest secondary schools continued, with four in music and one each in languages, agriculture and sport. A primary school provided programs for students demonstrating a high ability in gymnastics.

A R–7 SHIP focus-school project program provides support for the implementation of the Gifted Children and Students

policy, and the publication, *Understanding Giftedness*, elaborates on the ten key outcomes of the policy.

The Department co-hosted the sixth National Conference for the Gifted together with the Australian Association for the Education of Gifted and Talented and The Gifted and Talented Association of South Australia. The conference was the platform from which the national position paper on gifted education was launched.

Other initiatives developed in 1996, to be progressively implemented from 1997, included:

- the development of a new charter for public education and an accompanying curriculum statement;
- a plan for Aboriginal education, 1997–2001;
- a plan for information technology, 1996–2001;
- a multiculturalism in schooling and children's services implementation plan, 1997–2001;
- a new languages policy, 1997–2006;
- a school-to-work program, Ready, Set, Go; and
- the establishment of a research council to manage and monitor research.

Catholic schools

Continued focus on planning and collaboration among schools ensures planned, sustainable provision of Catholic schooling into the future. Part of this planned provision was the opening of another primary school on a shared campus with DECS, which brings to four the number of such campuses. Building proceeded in the latter part of 1996 for a Catholic/Anglican school which will open in 1997.

A review of SACCS was conducted and a report will be released in 1997. A comprehensive review of the basis of funding schools was also undertaken.

Technology

Over the period 1996–1998, Catholic schools will have progressively installed the DUX administration and finance software package. In addition to schools' purposes, it is intended that the system will have the capacity for electronic collection of accountability data.

Curriculum

A mathematics curriculum project and a VET project were initiated in response to emerging issues and needs in those areas.

Other initiatives developed in 1996, and to be finalised during 1997, included:

- a report on meeting technology needs in Catholic schools;
- a report on system-wide assessing and reporting;
- a review of the languages policy;
- a review of the Aboriginal education policy;
- the establishment of a curriculum framework for Catholic schools;
- development of a statement on middle schooling; and
- development of a policy on gifted and talented students.

Independent schools

Given the devolved nature of independent schools, initiatives are planned and implemented at the school level and are therefore numerous and varied. The Independent Schools Board was responsible for a cross-sectoral initiative resulting in South Australia being the launching ground for the national pilot Aboriginal Education Traineeship Scheme which placed Aboriginal trainees in an educational context in five independent schools.

The Independent Schools Board undertook new initiatives to assist students with special learning needs.

Resourcing

In 1996, one new government school was completed, and nine other government schools were upgraded at a total cost of \$34.9 million, of which \$17.3 million was Commonwealth funding. This work included science laboratory and library upgrades, provision of drama facilities, and upgrades necessitated by school restructures, amalgamations and conversions.

The Commonwealth contributed \$2.84 million towards capital projects in South Australian independent schools. This included \$0.94 million to help meet the broadening curriculum, especially in secondary schools, and to provide technological support to match the changes emerging from Commonwealth and State directions for education arising from nationally-approved reports.

Of the 18 independent schools' capital projects funded by the Commonwealth and completed both physically and financially during 1996, the most common were:

- construction of general purpose learning areas (GPLAs), and areas to house computers and associated information technology, construction and refurbishment of specialist

facilities for technical studies, construction of library facilities, administrative and staff facilities, student amenities, withdrawal and storage areas, site preparation and master planning; and

- purchase of library equipment, computers for library automation and staff development, and computers and software for system's libraries' automation.

In addition, parents and other members of the school community contributed significant financial amounts to new facilities such as resource centres, information technology centres and administration complexes.

The Commonwealth provided \$4.87 million towards capital projects to the SACCS Block Grant Authority. This included \$1.57 million to help broaden the curriculum through the QCATS Element. The remaining funds of \$3.10 million were used for General Element projects for capital development of new and existing places.

Of the 15 Catholic schools' projects completed both physically and financially during 1996, the most common were:

- construction, refurbishment and alterations to provide administration facilities, staff and student facilities and amenities, general learning areas, specialist learning areas including computer rooms and laboratories, design and technical facilities, resource centres, environmental studies and physical education facilities; and
- provision of specialist equipment to enhance the quality and competency of teachers and students and to raise the technology standard of facilities, including a project establishing a communication network linking 15 secondary schools using the Electronic Classroom Program for distance education.

Focus areas

Students' attitudes as they apply to the social objectives of schooling

Government schools

Key developments provided comprehensive information about the attitudes of middle and senior school students to their schooling. These included:

- analysis and reporting to schools and the system of the findings of *Senior Secondary School Students in South Australia: Attitudes, Achievements and Destinations*, a DEETYA-funded national research project;

- ongoing involvement of students in the development of the Department's new charter. Two hundred and fifty students from years 5 to 11 discussed the directions of public education. Creating a sustainable future was one of the key directions which emerged;
- development of a draft curriculum statement outlining the curriculum responsibilities of teachers, schools and centres and strongly supporting the active involvement of students in their learning through negotiation, discussion, reflection and collaboration;
- two major research reports involving South Australian students, *From Alienation to Engagement* and the TIMSS, will provide information about the attitudes of adolescent students towards schooling and some strategies for improving their schooling experiences; and
- the *Gender and School Education Report* prepared by ACER demonstrated the gains South Australia has made in gender equity, for example, 94 per cent of students reported having been taught about sexual harassment.

Plans for future years

A range of initiatives and activities proposed for the future include:

- student forums will be held annually to ensure student input on educational issues. In 1997, the theme will be learning for a sustainable future and 250 students from years 4 to 12 will be involved;
- a report based on a survey of year 11 students will be prepared, providing information about their perceptions and attitudes;
- the evaluation of Ready, Set, Go will involve data collected from students;
- the DECS' draft charter, curriculum and equity statements will be further developed through consultations which will include students; and
- the three-year Australian Research Council Students Completing Schooling project, in which DECS is a partner with Flinders University and SSABSA. The project will investigate why some students do not complete their schooling.

Catholic schools

The Catholic Education Office directed resources to four programs or curriculum areas relating to the social objectives of schooling. Foundational among these is the Religious Education curriculum, through which students

develop understandings of their uniqueness as human beings, leading to a sense of meaning in their lives as well as the basis for relating to others. The Family Life Education curriculum guidelines specifically developed for South Australian Catholic schools, but also used in other States and sectors, develop appropriate knowledge and skills, including social and relational skills.

The Behaviour Management Program assists schools to develop policies on behaviour management and assists staff with related programs. Of special note was a project, A Model of Collaboration for Promoting Social Skills in Primary Schools, which linked six parish primary schools in a three-layered approach. This included eight social skills sessions for students, six support sessions for parents and six half-days of professional development for teachers. The project's success was reflected in the learning which occurred for teachers and in the enhancement of the partnership between home and school.

In the primary schools, a range of programs focused on social skills, including SRC and class meetings to support shared decision-making, responsibility and relationships. A number of social skills training programs are in place in Catholic primary schools, including conflict resolution, sexual harassment and protective behaviours programs and the Boys and Relationships program. Social skills development is embedded in thematic work in the curriculum, in extracurricular activities and in the classroom through cross-age tutoring, collaborative learning and 'buddy' programs.

There were many programs in primary schools directed towards improving students' learning achievement which were also seen as enhancing students' self-esteem and confidence, such as the Learning Assistance Program, special education and adaptive education programs and negotiated curriculum, and inclusive classroom practices to ensure all students can access the curriculum.

Secondary schools have a number of programs and activities which have direct and indirect influence on student self-confidence and self-esteem, such as extensive pastoral care and personal development programs, and the peer support program, 'Big Brother Big Sister'. Other such activities in Catholic secondary schools included the introduction of an enterprise education program to heighten skill development, personal confidence and adaptability to changing workplace conditions, student seminars in year 10 focusing on choices, initiative and the future, employment of Aboriginal Education workers, responsibility for the care of a local council wetlands area and charitable activities.

Plans for future years

Plans for the future for Catholic secondary schools include looking at aspects of the civics education program, Discovering Democracy, in relation to the middle years of schooling and year 11 Australian studies, the development of a middle school approach at year 8, involvement in the Brigidine Schools' social justice project entitled Pursuit of Justice in a Democratic Society, and extending peer support programs and the Boys and Relationships program.

Primary school plans include a social skills development program with a special focus for some targeted students, a five-year plan for the education of students, continuing social skills training and the extension of this to years 2 and 3, and the explicit teaching of social and assertiveness skills.

Independent schools

The social objectives of schooling rate highly in the overall objectives of independent schools and are fostered in environments which strive to be caring and embrace Christian values. Many schools stated that they promote excellent learning in the school, with a number indicating they do so to foster spiritual service as part of Christian training. They make reference to high standards of instruction and developing the full potential of students, including social capacities for the benefit of the school community, the wider community and the nation.

A number of schools referred to the need to assist students to cope with rapid change, prepare students for the future and to achieve their full potential, balance useful work with enjoyable leisure and be able to communicate effectively with their fellow community members.

Plans for future years

Most schools indicated there were practices in place to regularly assess their aims and objectives. As a result, curriculum review and development were stated by most schools as part of regular practice to improve the quality which focused upon the social development of students. This was illustrated by:

- the growth and promotion of learning assistance programs;
- the planning for student learning logs;
- strengthening the performing arts area to assist students to gain self-confidence;
- developing skills of analysis and problem solving, and respecting the ideas of others;

- introducing personal development programs for students;
- noting the impact of information technology on the social aspects of schooling and students;
- improving opportunities for part completion of vocational education courses;
- considering middle school structures to assist students; and
- reviewing best practice and student profiles.

Focusing on specific student needs, schools plan to monitor protective behaviours programs, to build mechanisms for identifying and assisting students at risk, to extend enrolment levels to enrol more Indigenous Australians, and to assess and implement programs for more students with disabilities. There are plans to introduce self-esteem and life-skills programs and anti-bullying strategies, to review the employment description of student counsellors, and to create programs about studies of Asia which will embrace more students and foster a respect for cultural differences.

Schools provided training for staff in these areas and were striving to improve lines of communication between students, staff and the community. At the student level, schools plan to introduce class meetings to build democratic processes, extend a student-monitored goals system, increase opportunities for student leadership in the school and review the house system.

Geographically isolated students

Government schools

The Commonwealth CAP funding is provided through direct grants to schools. A total of \$1.29 million was distributed to 102 schools in 1996. Parents are involved in the allocation of funds through decision-making at the school or school cluster level. Schools used this funding to support programs across the eight areas of study and in cross-curriculum areas such as information technology and career education.

Student access to services

A focus for schools supporting career education programs with CAP funding has seen student access to specialised career advice through:

- career observation trips to Adelaide and major regional centres, including visits to, and follow up contact with, the Career Reference Centre, Youth Access Centres and work skills expos;

- technology: for example, career counselling software, the Internet, e-mail and videoconferencing; and
- the hiring of career counselling personnel.

Outcomes and effectiveness of programs

Schools reported increased access and participation by students through CAP funding in the eight areas of study. This was achieved through improved student attendance and involvement in the performing arts, camps and excursions, sports and recreation, and career education programs.

Schools spent 49 per cent of their CAP funding on the purchase of teaching equipment and resources, 13 per cent on purchase of personnel, seven per cent on staff training and development and 31 per cent on subsidies for student travel (including the purchase, maintenance and hire of buses), accommodation and entrance fees (for example, for performances).

CAP funding was used to increase curriculum provision through distance education and the development and implementation of VET courses through partnerships with local industry and training providers.

Significant achievements

The Transient Student Project was completed. Key outcomes of this project were:

- the incorporation in the system administrative computing package of a definition of transience after consultation with school communities and other agencies; and
- development and implementation of an electronic curriculum information transfer system for transient students in remote schools.

A key initiative, involving 28 CAP schools, was the development of the booklet, *Learning About the World of Work*. It presents 13 examples of effective career education practice for geographically isolated schools R-12, with emphasis on the integration of career education into the curriculum.

Two clusters of country schools were funded through the Transition Support Project for students with disabilities. Key outcomes were to improve the transition of students with disabilities so that they could access vocational training, further education, employment and community activities. School actions centred around curriculum planning, increased links with the local community and an increased emphasis on work experience and vocational training opportunities.

Professional development for country teachers

Professional development programs were provided to support the implementation of statements and profiles.

Remote and isolated schools accessed scheduled programs offered at regional centres as well as programs specifically tailored to meet local needs. Videoconferencing was offered to any school to meet its special needs. A five-day program encompassed all the Anangu Aboriginal schools and focused on issues including ESL, integrated programming, and assessment and reporting.

All rural and isolated schools access their own training and development from funding provided to each school site from DECS, based on distance from the GPO, FTE staff and staff turnover. Given these criteria, rural and isolated schools attract more training and development funding than their metropolitan counterparts. Schools in more isolated settings often cluster together to share costs and provide greater choice of courses.

The Rural Professional Development Program funded under the Strategic Element of the NPDP provided high-quality intensive professional development for teachers in remote, northern schools. The program focused upon key issues relating to literacy and was conducted by staff from the Faculty of Education, University of South Australia, and practising teachers.

Some training and development sessions conducted at The Orphanage Teachers Centre in Adelaide were made available to country teachers by video conferencing or by video recording.

Retention of teachers

Staff turnover in country schools from 1995 to 1996 was 25 per cent compared with 27 per cent turnover for all schools. Staff turnover from 1996 to 1997 in country schools was 22 per cent, the same figure for all schools. The existing country incentives program was maintained. Key features of the system were:

- guaranteed right of return to a substantive vacancy in the metropolitan area after four years of country service;
- leave with pay for teachers after continuous service of six or more years in designated rural and remote schools;
- payment of study allowances for teachers who have served at least four years in the country;

- a removal allowance or mortgage compensation for teachers who complete seven years of country service in designated schools; and
- access to travel subsidies for specialist medical provision through the provisions of the Teachers Non-Metropolitan Conditions Award.

Catholic schools

Although 14.7 per cent of the total Catholic school population were in country Catholic schools in South Australia, only three Catholic schools, were designated CAP as determined by the criteria used by DECS. This represented 0.006 per cent of the total Catholic school population. In addition, 0.006 per cent of the Catholic school population attended a metropolitan boarding school and 0.004 per cent of the Catholic school population attended a country town boarding school, although not all of these were necessarily from a geographically isolated area.

Students residing in geographically isolated areas experienced limited access to social and cultural activities that broaden educational and learning experiences. They also experienced limited curriculum opportunities, although a focus on establishing infrastructure for distance education helped to address this. The use of technology to enable communication through e-mail and access to information through the Internet was used effectively by the most geographically isolated Catholic school, St Michael's, Woomera.

Besides the provision of technology, CAP funding was used by schools to provide extra curriculum opportunities, professional development, access to broader educational experiences and for cluster or local community programs.

Schools reported that teacher turnover was high in country areas, although this varied according to circumstances. Country schools generally have a younger teaching staff than metropolitan schools which means that professional development is critical, but often difficult to access because of distance or finding replacement staff.

Independent schools

Data for this focus area were obtained by sampling. Nearly 30 per cent of all independent schools were contacted, involving approximately 27 per cent of possible students. Of the schools sampled, 69 per cent were primary, nine per cent secondary and 22 per cent combined. Some 26 per cent of the schools surveyed were in the country, and two were designated as CAP schools.

Students from an independent school in Ceduna explore their environment.

The percentage of students in or from geographically isolated areas was 1.89. One rural school was in a geographically isolated area and thus all of its students were isolated. This school has an enrolment of approximately 60 per cent Indigenous Australians. Two of the three metropolitan schools in the sample which have boarding facilities have students enrolled from geographically isolated areas and all students from these two schools were boarding at the school's boarding house. None was reported as having any special learning needs. Both schools offered scholarships and bursaries to provide students with opportunities to gain a suitable education which was either not possible or very difficult to obtain at their home location.

In the rural school, approximately 15–20 per cent of students had some form of special need requiring modification to the curriculum and methodology. Some 65 per cent of students were in receipt of the State's school card, which is recognition by the State of economic hardship. This school indicated that students had no access to State and national sporting and cultural activities, although they actively participated in local sports. Access to specialist facilities and personnel was limited, which meant students with special talents were often denied the opportunity to develop those talents. Nevertheless, the school felt it was able to offer students a full range of curriculum options. It was continuing to develop information technology but was finding the acquisition of hardware a continuing drain on the community and school's limited resources.

The rural school reported that extra classroom help for teachers to assist in delivering programs to address the special needs of students had been provided. All opportunities were taken to employ staff and/or engage in programs at the State or Commonwealth level to aid

students. The provision of a cultural room, which was funded by a Commonwealth capital grant in order to recognise the culture of Aboriginal students and the many other cultures represented in the remote community, has done much to promote the understanding of differing backgrounds and cultures, both in the school and in the wider community.

This school reports that programs put in place for some students with special needs have had a positive effect on the whole school.

Staff from metropolitan schools, together with students from geographically isolated areas, attended meetings and conferences conducted by parents of isolated students. This ongoing help with understanding the concerns of students and parents enables schools to modify their curriculum and pastoral care programs to assist these students.

Metropolitan schools indicated that having students in the school from geographically isolated areas meant that other students had a greater understanding of the needs of other Australians. The enrolment of students from geographically isolated areas enabled schools to have the senior secondary numbers to offer curriculum choice and co-curriculum activity.

Student outcomes in numeracy

Government schools

Some schools assigned profile levels for the strands in mathematics as part of their curriculum, monitoring, assessment and reporting review and reform practices, but there was no system collection of profiles data in 1996. Findings from the outcomes of the BSTs in years 3 and 5 are reported in the *National Overview*.

For senior students, SACE data indicated a significantly larger number of boys enrolled in Stage 2 PES mathematics subjects than girls, with the exception of business mathematics. The success rate for all students undertaking Stage 1 mathematics was 94 per cent; the success rate for girls was 95.3 per cent and for boys, 92.6 per cent. The success of Stage 1 students from metropolitan and country schools in mathematics was similar: 96 per cent for country students and 95 per cent for metropolitan students.

Emerging issues

Given the increased curriculum demands on time for teaching and learning in schools, sustaining the quality of the provision of mathematics education was a significant issue.

Mathematics activities in a girls' high school, SA.

Transition arrangements which facilitated a better flow of information about students' achievement and better support for students as they progress through levels of schooling was another key issue. Use of student portfolios in monitoring and reporting was being trialled.

The number of senior students undertaking mathematics with a tertiary focus was declining. This was particularly true of Mathematics II and resulted in increased pressure to review and revise the senior mathematics curriculum.

Developments and plans for future years

A focus for DECS is supporting teachers in making the learning of mathematics relevant and accessible to all students by furthering teachers' understanding of mathematics and how students learn mathematics.

Materials and the Statewide infrastructure for professional development assisted teachers. A focus-school project developed a research base and materials to support teachers with numeracy in early childhood. A project using data derived from teacher assessments, the BSTs and the profiles assisted teachers in planning.

By 2000, materials will be developed to effectively cover most aspects of the R-10 mathematics curriculum. A project involving four schools during 1997-98 will focus on numeracy in years 4/5 and 8/9 and the development of an information base of research and materials. DECS will continue to participate in trialling and implementing the nationally-developed numeracy benchmarks and ensuring numeracy learning is embedded in all key learning areas.

Independent schools

Given the devolved nature of independent schools, system data are not available. From a sample of schools, representing 39 per cent of members, there was a trend towards the development and application of mathematics in

the context of everyday life. Schools reported that thinking processes and environments that emphasised cooperative learning encouraged language and communication skills and facilitated cross-curricular practices.

Assessment was used for many purposes and various strategies such as portfolios, assignments, projects and practical activities were employed to complement teaching methods that favour problem solving and investigative approaches. Increased use of computers and calculators was reported but costs limit these resources becoming an integral part of many schools' programs.

The majority of sampled schools reported using the mathematics profile and statement when framing curriculum and developing assessment procedures.

Professional development

Schools in the South Australian Lutheran system appointed a professional development coordinator together with regional facilitators to provide inservice training to all teachers in Lutheran primary schools. Mathematics Learning and Teaching for Success (MLATS) and training in the use of the statement and profile were continued through school- and zone-based workshops.

Professional development with a specific mathematics focus was offered in all of the sampled secondary schools. Teachers also accessed programs offered by the subject associations and SSABSA.

Catholic schools

In addition to the numeracy project referred to in the *National Overview*, the Catholic Education Office established a mathematics project to assist schools to implement the statement and profile, to enhance understandings of mathematical concepts and teaching methodologies, and to facilitate the mathematics learning of students in their transition from primary to secondary schooling.

Developments and emerging issues

Feedback from these projects, as well as Statewide surveys, indicated a variety of developments, initiatives and emerging issues in schools. For primary schools, these included a focus on girls in mathematics, and children being encouraged to discuss, as well as record, their mathematical thinking and findings. Other developments have been:

- the recognition of calculators not as a tool of dependence but for developing mathematical concepts, enlarging the

scope of problem solving, encouraging discovery, exploration and creativity;

- through a focus on the middle schooling concept, having a more specialist mathematics teacher in the upper primary levels; and
- the use of technology to assist in problem solving, while multimedia use of the computer, in particular, has provided excellent extension and practice between mathematics and other curriculum areas.

For secondary schools, an emerging issue is a lack of knowledge of number facts. There is growing recognition that the area of numeracy is a focal point for mathematics curriculum, that there is a need to improve the reporting of student achievement across the transition years and a need for greater continuity of content and methodology across these transition years. Other issues identified by schools included:

- the need to develop appropriate and successful classroom methodologies to cater for the wide range of ability levels;
- determining the timing and extent of technological intervention; and
- the need to increase the number of girls studying mathematics at year 12.

Changed emphases

Fifty per cent of all the schools indicated various levels of implementation of the mathematics statement and profile.

Changed emphases for primary schools, as a consequence of national initiatives, included the use of the statement and profile, greater use of open ended activities and constructivist methodologies and a wider range of assessment strategies. More attention was being given to problem solving and the use of correct terminology. There was more specific teaching and assessment occurring, as well as the recognition that basic skills are required and that these skills are best learnt in a mathematical context, and for a purpose.

Secondary schools reviewed curriculum and methodologies: there has been much work in reviewing traditional methodologies and practices such as grouping and streaming. Teachers and schools have been encouraged to adopt a more holistic approach, resulting in more balance in curriculum offerings in all strands, and there was a stronger emphasis on mathematics literacy, understanding of processes and their application to problem solving.

Science

Government schools

Significant achievements in the implementation of science education included the establishment of a Science Reference Group. It draws representation from the three schooling sectors, principal and teacher associations, SSABSA, the tertiary sector, industry and parent groups. A science curriculum exchange web page was established to provide information about professional development programs, key events and materials.

Science publications were distributed to all schools which had an R–10 component. They were *Cultural Perspectives Supplement to the R–10 Science Classroom Guides*, *Interactive Science: Making Science inclusive for students with Disabilities* and *Adopt, Adapt, Share* units of work for teachers to use in planning in strands A to C. Professional development programs on energy and change, assessment and recording and reporting in science in years 6–10 were provided.

Changed emphases

Four programs were offered to teachers through the NPDP: Key Competencies and Working Scientifically; Assessment and Recording in Science Years R–10; Energy and Change Years 8–10; and The Gender of Science. Science professional development was managed by the South Australian Science Teachers Association with a high degree of involvement and leadership provided by DECS.

Trends in teaching and learning included:

- emphasis on middle schooling, evident by the two science focus-school programs;
- greater awareness of transition issues across the levels of schooling, their respective curriculum frameworks, and associated issues;
- release of the assessment and reporting for the schools' policy and support resource and how this impacts on science delivery in classrooms;
- greater emphasis on curriculum description in reporting and an expansion in the range of assessment strategies;
- integration of the key competencies and gender and Aboriginal perspectives in redeveloped SACE science subjects (PES Stage 2 geology and SAS science); and
- the move to consider other ways the key learning areas in R–7 can be integrated within topics without losing the integrity of the areas involved.

Practical experiments are part of the primary science curriculum in South Australian schools.

Professional development

The two focus-school programs, the Science Curriculum Focus-School Project Years 6–10 and Energy and Years 8–10, began their first networking phase using a train-the-trainer model.

Catholic schools

Other than general support for schools in their implementation of the science statements and profiles, there has not been a specific focus on science by the Catholic system in South Australia. However, individual schools undertook various initiatives.

Some primary schools appointed science coordinators or key teachers, others found that refurbishment of laboratories improved student access, one school established a Marine Studies Centre and most schools had students participate in competitions and awards. Other initiatives included the development of specific methods for teaching science in the middle school to include group work and oral work and their assessment, involvement in the Classroom Discourse Project and inclusion of methodologies appropriate to the teaching of science to girls as in the National Action Plan. New approaches included the assessment of practical skills and procedures, increasing use of technology such as computers, CD-ROMs

and the Internet to receive science programs and to present projects, and use of the Primary Investigations program.

Changing trends in science education

Changing trends in science education are largely occurring in teaching approaches. Schools are investigating a variety of approaches: single-sex groupings; learning team approaches; small-group work; rotation of classes amongst teachers; multi-age groupings; secondary teachers working with primary classes; and modelling by having females as the science teachers. Students with disabilities undertake science education, but, in some cases and mainly with intellectually disabled students, a modified curriculum is undertaken.

Professional development

Most professional development was offered by the Science Teachers Association or by Catholic Education Office consultants. CSIRO science education courses were also used. Peer support, faculty workshops, Science Days, implementing the statement and profile, the Sci-Tech Project and the funding of staff for particular courses are other strategies employed to support professional development.

Independent schools

Independent schools are individually responsible for the development of frameworks to support teaching and learning in science. A significant number of sampled

schools indicated that they investigated the alignment of their science curriculum with the statement and profiles. In excess of 70 per cent reported using the statement and profiles for framing curriculum, but fewer than 20 per cent applied them to the development of assessment procedures.

Of the sampled schools, 70 per cent took part in national and State competitions. All schools commented on student enjoyment and the benefits of exposure to experiences beyond the school.

Science and its impact on society and the environment were integral to the syllabus at primary and secondary levels. Increased emphasis on cooperative learning, relating theory to practice and contextualising science with students' experiences, were evident from the early years to postcompulsory levels of schooling.

Professional development

Teachers accessed professional development activities offered within schools and at State and national levels. Support for subject associations was widespread.

Many primary schools reported an emphasis on participation and achievement by boys and girls in science and five of the sampled primary schools examined the curriculum time allocated for science. Secondary schools had a strong focus on professional development. Consideration was also given to the special needs of overseas students in science at the senior levels.