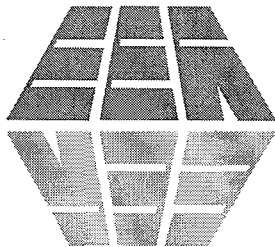
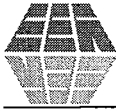


**Engineering Employers Association
South Australia**



**Submission to
House of Representatives Inquiry into
Vocational Education in Schools**

May 2003



INTRODUCTION

Engineering Employers Association, South Australia (EEASA) is a registered organisation under the *Workplace Relations Act 1996* and has membership in South Australia of approximately 450 companies in the metals and engineering manufacturing sector, including automotive component, toolmaking, foundry, plastics, whitegoods, electronics, defence and general engineering.

The Association is affiliated nationally with the Australian Industry Group and provides a range of advisory services to member companies in the areas of industrial relations, human resource management, environment, industry development, education, training and industry performance.

There are around 3,000 apprentices in engineering trades in South Australia, of which around 10 per cent are employed by the Association's wholly owned Group Training Scheme.

Whilst the Terms of Reference for this Inquiry are wide-ranging, the Association particularly wishes to focus on the need to ensure VET in schools equips young people with skills that lead them to pursue further studies, employment or a combination thereof in metals and engineering manufacturing. As the State's largest industry, manufacturing contributes around 15 per cent of Gross State Product¹ and employs around 84,000 people².

The Association is a supporter of VET, and consequently welcomes the opportunity to provide input to this Inquiry. This submission has identified a number of issues for the Inquiry's consideration, including:

- skills shortages in engineering trades;
- VET in schools relevant to metals and engineering manufacturing;
- teacher training; and
- school based apprenticeships.

¹ ABS 5220.0 Australian National Accounts, State Accounts, Nov 2001



SKILLS SHORTAGES IN ENGINEERING TRADES

A report released in 2002 by the National Centre for Vocational Education Research (NCVER) entitled *Evidence of Skill Shortages in the Engineering Trades* confirmed that a shortage of skilled labour exists in the engineering sector. With respect to the demand for skills in engineering trades, the report noted:

- Engineering trades represent the second largest trade group in the workforce, with 217,000 people in the skilled trades workforce;
- Employment in the engineering skilled trades workforce has declined significantly over the past decade;
- Total employment in the engineering trades is projected to grow more slowly than employment generally over the next few years;
- Despite this slow rate of growth, continuing shortages are expected to be evident in specific metals trades.

The NCVER also reported that consideration should be given to increasing the number of apprentices and trainees who commenced their apprenticeship or traineeship while still attending school.

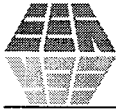
“Clearly this is an area for consideration in any strategy to boost the intakes of younger people to new apprenticeships in the engineering trades.”

(NCVER, 2002)

We believe that an important source of skilled workers in the future will commence their interest and training in metals and engineering manufacturing skills in VET in schools programs, consistent with the NCVER recommendation.

For this to occur successfully, there is a need in our view for an increase in the quantum and a revision of the structure of the next generation of technology teachers in our education system, greater flexibility in the timetabling of curriculum to allow for school-based apprenticeships and stronger partnerships

² ABS 8221.4 Manufacturing Industry, SA, Dec 2001



between schools and technology training providers such as TAFE Institutes and private training providers with appropriate equipment and teaching resources.

VET IN SCHOOLS RELEVANT TO METALS AND ENGINEERING MANUFACTURING

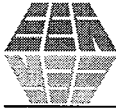
In 1992, the Association developed the *Engineering Pathways Program* in partnership with the Manufacturing, Engineering and Related Services Industry Training Advisory Board and the South Australian Government as a way of increasing alternative pathways for students to gain knowledge of, and exposure to, career paths in engineering. The Program continues to be a key VET in schools program relevant to the sector today.

Engineering Pathways Program

The *Engineering Pathways Program* currently involves twelve schools delivering VET education to assist students achieve competencies under the *National Metal and Engineering Industry Competency Standards* in Years 11 and 12. The Program enables students to spend between four and eight weeks per annum in company workplaces to learn engineering skills. Several hundred students have passed through the Program since its inception and around 200 are currently enrolled.

Students receive the South Australian Certificate of Education (SACE) and can gain a Certificate I in Engineering or Certificate II in Engineering Production. The Certificates can contribute towards recognition in areas of further relevant VET study or employment. The Program provides enhanced levels of education in engineering, maths and physics, and over 90 per cent of Program graduates have moved directly into employment or an apprenticeship.

The *Metals and Engineering Training Package* was designed to support VET in schools programs and serves as a basis to determine the competency of young people to pursue a career in engineering trades. From a policy perspective however, the Association believes if competency standards are to underpin



assessments of the capabilities and skills of school students, then competencies must be set in accordance with realistically achievable outcomes from school-based VET programs.

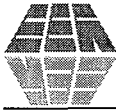
From a delivery aspect, schools participating in the Program have different levels of equipment and teaching resources. Greater access by schools to appropriate levels of resources may contribute to more consistent outcomes from the Program. To help achieve this, the Association recommends schools develop partnerships with technology training providers such as TAFE Institutes and private training providers.

The Association believes the Engineering Pathways Program should be expanded to encourage greater levels of take-up by students of engineering related studies, assisted by the measures we have proposed here.

TEACHER TRAINING

An important component to providing the capabilities and capacity within schools to encourage and develop young people to pursue career paths in the metals and engineering manufacturing sector is to have adequate numbers of appropriately skilled technology teachers. The issue of teaching and teacher education is the subject of a current review by the Commonwealth Department of Education, Science and Training and the Association has provided input separately to that review. To briefly reiterate the key points we made to the Department on this matter, the Technology Teachers Association of South Australia conducted a survey of 314 technology teachers in 1999 and subsequently reported,

“We are in the beginnings of a serious technology teacher shortage and the indicators are showing that it will become far, far worse. The Government appears to be unwilling to take serious and urgent action to even address the problem in a real way and consequently there are no plans to attempt to halt this slide.”



The survey further noted that over the next five years the higher number of technology teachers expecting to retire over the level leaving universities to replace them will compound supply problems in this area.

The Association recommended the Department investigate the level of qualifications and experience that technology teachers currently possess to better understand the adequacy of their preparedness for their role. We further advised the Technology Teachers Association has concerns that the University of South Australia as the sole provider of technology teacher training in this State no longer offers course entry to undergraduate students in technology teacher training. A specialised post-graduate course has replaced undergraduate entry, and the Technology Teachers Association has advised that participants have on occasions gained access to the post-graduate course through degrees unrelated to technology studies.

The Technology Teachers Association has advised that New South Wales and Victoria offer, like South Australia, limited opportunities for technology teacher training, and that model programs are being delivered by Edith Cowan University in Western Australia and Griffith University in Queensland in the form of four-year undergraduate programs.

The Association believes VET in schools programs relevant to the metals and engineering manufacturing sector will benefit by having greater numbers of technology teachers in the education system. Rectification in South Australia of access to technology teacher training at undergraduate level will be important to achieve this.

The Association believes technology teachers and others involved in VET in schools programs should undertake regular periods of professional development in industry workplaces to maintain their knowledge of current industry practices. The duration of professional development activity should be of sufficient time as to be purposeful for teachers yet mindful of the capacity of companies to accommodate such placements.

The Association is aware of a number of 'teacher in industry' placement schemes in existence or being contemplated around the country under different



funding arrangements, but none in South Australia. The South Australian Government has advised the Association that all VET teachers are required to comply with Standard 7 of ANTA's Australian Quality Training Framework dealing with the competence of RTO staff. The standard indicates:

7.1 The RTO must develop and implement written procedures for the recruitment, induction, and ongoing development of each member of its staff who is involved in training, assessment or client service; encourage and provide relevant opportunities for their professional development; and monitor their performance.

The Association is further advised that funding for professional development is the responsibility of individual schools. Whilst some VET programs, including the Engineering Pathways Program, have been committed to providing on an annual basis instruction regarding competency standards relevant to a particular industry, this does not address the important issue of providing teachers with opportunities to refresh workplace skills and be kept informed of the latest technological developments through periodic placements within industry.

Professional development programs assisting technology teachers to provide students with practical and relevant information regarding career options could also help to improve the image of employment in manufacturing, a factor we believes weighs heavily on student demand for careers in the sector.

SCHOOL BASED APPRENTICESHIPS

In July 2002, the *Metal, Engineering and Associated Industries Award 1998* was varied by the Australian Industrial Relations Commission to recognise school-based apprenticeships that will provide students with greater options to build careers in engineering.

However to be effective for students and employers alike, schools will need to provide greater flexibility in the timetabling of curriculum to enable school-based apprentices to attend off-the-job training relevant to the competency outcomes of the trade stream they have chosen. Schools and teachers will need to



develop a sound awareness of these arrangements to better appreciate the expanded career development paths available to students.

RECOMMENDATIONS

The Association makes the following recommendations to the Inquiry:

- The development of VET in schools programs must have the involvement of industry to ensure learning outcomes are recognised and valued by employers and students alike;
- Technology teacher training needs to be addressed to avoid a looming crisis in the supply of technology teachers to equip students for careers in engineering;
- Teachers delivering VET in schools should be required to undertake periods of practical exposure in modern industrial working environments to update knowledge and skills that can be transferred back into schools;
- Alliances and partnerships between schools and other technology training providers such as TAFE Institutes and private training providers with appropriate capital and teaching resources should be considered as part of a future strategy to deliver VET in schools and school-based apprenticeships;
- Schools will need to develop flexibility with respect to curriculum timetabling and teaching hours to accommodate part-time school based apprenticeships.