



Skills shortages – issues and solutions for process manufacturing

**Report from the NSW industry forum
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Executive Summary

The process manufacturing industries report difficulties in recruiting workers with the required skills at the right levels. Some of these difficulties meet the definition of skills shortages, where vacancies remain unfilled over long periods. These are predominantly in the professional and traditional trade occupations within process manufacturing. However, operational and production roles in process manufacturing are not licensed or regulated and do not have conceptual/historical identities that lock employers into leaving vacancies unfilled. In the absence of suitably skilled candidates, vacancies are likely to be filled with workers who require up skilling to be able to perform the role at the required level. The flexibility to employ workers with less than the required skills therefore defines skills issues for process manufacturing occupations as predominantly skills gaps rather than skills shortages.

A range of initiatives have recently been established to address skills shortages in fields such as engineering, automotive and IT; however, the operational/production roles in process manufacturing are under represented in these types of projects. There is a risk that the more visible, defined and regulated trade occupations and professions may attract attention and support under the skills shortages banner, while the difficulties faced by employers of other occupations may be marginalised.

Manufacturing Learning Australia held an industry forum to discuss the issues facing process manufacturing employers, and to identify possible solutions for process manufacturing.

The forum showed that there are a range of skills issues for process manufacturing employers including both skills shortages and skills gaps and that these are intertwined with recruitment and retention issues. Skills shortages were reported in heavy vehicle mechanics, electrical trades, engineering and OHS professionals. Skills gaps were reported in machine operator and production roles within the plastics, chemicals and manufactured mineral products sectors.

Several process manufacturing employers at the forum reported adaptive responses to these difficulties including broadening the selection criteria, school based traineeships and raising their community profile.

This report provides an overview of the forum and outlines the themes arising from the discussions. It also draws out indications for future work in finding solutions to the skills issues facing process manufacturing employers in NSW. The key areas indicated from the forum are:

- advice and assistance for industry to increase participation and successes with programs such as school based traineeships, job network services and group training schemes
- expanded arrangements for government funding and incentives to include gap training, recognition services and Certificate II traineeships
- increased industry engagement with proactive measures such as work force planning, recruitment and retention strategies, improving community profile
- the potential for increased participation of labour hire companies in training and skills development.

Introduction

In its work with the process manufacturing industry over the last few years, Manufacturing Learning Australia (MLA) has had many reports that industry is experiencing skills shortages and skills gaps – encompassing difficulties in attracting the right people to fill vacancies and/or keeping existing workers and new entrants adequately skilled for the workplace requirements and technological advances.

MLA is aware that initiatives are already underway for some other industries who also report these difficulties (for example, tourism, hospitality, IT, engineering). These industries have variously established initiatives such as school based traineeships, accelerated apprenticeships for mature aged workers, projects to establish high quality RPL processes, industry defined (and government funded) pre-vocational courses, local projects linking industry with schools, projects that enable industry to access systems like New Apprenticeship Centres and job network providers.

MLA recognises that operational and production roles in process manufacturing are under represented in these types of initiatives, and wants to assist industry to engage with these concepts and to identify and progress initiatives that are suitable for process manufacturing.

There is currently much government interest in and support for skills shortages and many industries are tapping into this to establish practical initiatives, often at the local level. MLA believes that a strategic approach is required in order to establish coordinated, consistent and ongoing processes which will maximise long term benefits for the process manufacturing sectors. As the first stage to developing such an approach, MLA held an industry forum to discuss skills shortages and skills gaps in process manufacturing and to begin to identify solutions that are appropriate for the sectors. The forum was entitled “*Skills shortages – solutions for process manufacturing*”.

The NSW forum also formed part of the national ‘Plastics and chemical industries skills needs research project’, and the current report will be submitted to the national project. This project arose from the Plastics and Chemicals Action Agenda; funding

was provided to ACCI and the project has been subcontracted through PACIA to be managed by Manufacturing Learning Victoria. The project aims to collect quantitative data about skills shortages/gaps in the plastics and chemicals industries and to analyse and report to DEST on the skills requirements of the sectors.

Industry forum

MLA hosted a breakfast forum on 17 March 2005 which attracted twenty three participants. Nine of these were process manufacturing enterprises; three training providers (two of them private providers) and three agencies who work closely with industry (an Industry-Education Partnership, a Business Development Centre and an Area Consultative Committee). The manufacturing industry skills council, now known as Manufacturing Skills Australia, was also represented.

Information about the forum was disseminated via the MLA networks and web site, and via the PACIA NSW networks.

The forum comprised five presentations and a facilitated discussion. Participants were provided with the survey from the 'Plastics and chemical industries skills needs research project' and encouraged to return the completed survey.

The presentations covered the Competitive Manufacturing Initiative (CMI), the federal government's Action Agendas, the national 'Plastics and chemical industries skills needs research project', Boral's experiences with skills gaps and school based traineeships, demographic projections prepared by the Department of Employment and Workplace Relations (DEWR) and an outline of DEWR's skills programs and subsidies.

Feedback indicated that the participants liked the opportunity to network, the mix of people and variety of viewpoints, the discussions and presentations, and the focus of the forum. Some participants would have liked more time for discussion and most would have liked clearer outcomes, in particular for the forum to identify solutions and initiatives to carry forward. Most of the participants registered willingness to participate in a group to continue to work on the issues.

Skills shortages, skills gaps

The process manufacturing industries report difficulties in recruiting workers with the required skills at the right levels. Some of these difficulties meet the definition of skills shortages, where vacancies remain unfilled over long periods. These are predominantly in the professional and traditional trade occupations within process manufacturing.

However, operational and production roles in process manufacturing are not licensed or regulated and do not have conceptual/historical identities that lock employers into leaving vacancies unfilled. The process manufacturing industry sectors have, in the past, been characterised by an absence of structured training and qualifications for operational/production job roles and by job roles which are dynamic and evolve with technology. Traditionally operators and production support workers have been trained on the job, and experienced workers have been recruited from other companies. In the absence of adequately skilled and experienced candidates, employers are likely to fill vacancies with those who do not have the required skills with the intention of up skilling them. However, many employers report difficulties in achieving adequate up skilling while maintaining competitive operations.

The flexibility to employ workers with less than the required skills therefore defines skills issues for process manufacturing occupations as, predominantly, skills gaps. Companies consistently report ongoing difficulties in recruiting good people with the right skills who will be able to perform at optimum level. For the process manufacturing sectors skills shortages and skills gaps are inextricably linked with issues of recruitment and retention of workers and up skilling.

The preliminary results from the national 'Plastics and chemicals skills shortage research project' as reported to the NSW forum show plastics enterprises have identified difficulty in recruiting machine operators, extruder operators, thermoformers. Technicians have also been identified but these are likely to be maintenance roles which would be covered by mechanics/engineering streams.

The difficulties in recruiting skilled operators is also reported in chemicals and manufactured mineral products sectors as well. Some companies advertise and have

no, or minimal, response to the advertisements, even though there is high unemployment in the local area. Others report that they have a response to advertisements but that the pool of applicants is ‘useless’.

Participants at the NSW forum reported mixed experiences. Some companies found recruiting operators “not too bad” while others experience real difficulties. One company reports that 60% of its operators and trades work force are over 45 years old and that it is very hard to get young apprentices and operators. They have recently employed four unskilled adults into non-trade positions, who will be up skilled to meet the requirements of the job roles. While this takes longer for the worker to be fully operational at the required level, the company reports that these are their best and most motivated workers.

Process manufacturing does employ a range of ‘traditional trade’ occupations and professionals such as engineers, fitters, mechanics, electricians. The forum participants identified skills shortages in engineers (taking up to 18 months to recruit), OHS professionals and traditional trades such as heavy vehicle mechanics, electrical engineers and electricians.

One company reported needing 12 apprentices across a range of trades, including electricians, mechanics and boilermakers, but only being able to recruit 5 apprentice fitters.

Contributing factors

Issues raised at the forum indicated various factors which may be contributing to skills shortages/gaps in process manufacturing. These can be grouped into three categories relating to the pool of recruits, the industry and systemic issues.

Systemic issues

Demographics

The Department of Employment and Workplace Relations presented demographic projections to the NSW forum which indicate that there will be increasing competition for a shrinking pool of recruits. The DEWR projections indicate that over next 10 years the 45-64 age cohort will increase by around 274,000 while the increase in the

25-34 age cohort will be around 3,000; the 15-24 cohort will increase by 27,000; and the 35-44 cohort will increase by 22,000.

This is likely to result in increased competition for job candidates, with all industry sectors trying to recruit from the smaller populations in the younger age groups. Recent topical issues are germane. There has been publicity about strategies for encouraging older workers to remain in the workforce; encouraging those not in the work force to take up employment, including the unemployed, the disabled and people on parenting allowances; and government consideration of increased immigration.

Many of these responses to the labour force ‘squeeze’ are likely to result in increased demand for up skilling of workers to meet the needs of the employing industries. This will have high impact in the process manufacturing sectors where there is high flexibility to employ inadequately skilled workers. For adult, mature aged and immigrant workers – all of whom can be expected to have some existing skills – the current focus of the training system on time-based completion of whole qualifications imposes a training regimen which is often a disincentive to both employers and learners. The related time-based funding and incentive arrangements also act as a deterrent to the implementation of the RPL/RCC requirements of the AQTF.

School system

Many companies identify that the school system and individual teachers/advisors and many parents push students towards university pathways and away from VET related occupations and industries, often using them as the ‘stick’ – “if you don’t study you’ll end up in a factory”. This is reflected in the increased value placed on keeping students at school through year 12.

Schools are seen to be discouraged from participating in VET related courses which are positioned in competition with, rather than complementary to, non-VET courses – in terms of both content and funding arrangements.

The forum participants raised concerns that despite the higher school retention rates students do not meet the literacy and numeracy requirements of many of the job roles in process manufacturing, including trades and operator roles.

Funding/Incentives

The forum identified the need for realistic government assistance and one company reported “insufficient (government) funds for mature aged workers and assessment”. At present the employer incentive for mature aged trainees/apprentices is only available for over 45 year olds, therefore employers of adult workers under 45 are not eligible for this support. The lack of employer incentives for Certificate II traineeships was also raised at the forum. Companies reported that Certificate II is a valid and necessary outcome for many work roles, not just a stepping stone to higher level qualifications and job roles.

Poor profile

The NSW forum also identified negative perceptions of the process manufacturing industries as a barrier to recruiting adequately skilled workers. These perceptions operate at a societal level and have been identified (for example in the Make It! campaign) as prevalent in young people and their key influencers – parents, teachers and careers advisors. While the strategies required to bring about changes in attitudes and behaviours at the broad level can be complex and costly, some impact can be made at a local level. The significance of a positive community profile in successful recruitment is reflected in the experiences reported to the NSW forum.

One forum participant reported a successful strategy of establishing a local community consultative committee which raised the company’s profile and resulted in improved recruitment outcomes. Two forum participants who reported few difficulties with skills gaps in the operational roles represent large companies who are both seen as having strong, positive community profiles. For some companies a lack of visibility or absence of a good reputation in the local area is seen as a barrier to attracting suitable recruits. One participant reported difficulties in redressing this issue despite concentrated efforts to raise the profile of one of the ‘best’ local companies to local youth. Forum participants reported an example from Victoria where neighbouring companies, effectively the same industry, advertised similar jobs

in same local papers, but experienced vastly different response rates; the profiles of these companies may help explain the variance in outcomes.

The ‘pool’ of recruits

The pool of young recruits is seen as being more focused and more selective. Young people are thought to know what they want and how to get it; they are believed likely to say “what’s in it for me”.

This is consistent with the findings of the Make It! campaign – that generation Y values opportunities and relationship over income and security. Social research indicates that they are likely to want to take opportunities, keep their options open, work where they are valued and where they have a sense of relationship or community. This may be interpreted as not having a good work ethic.

Young workers are aware that they are, and will be, increasingly in demand; they feel they have choices about which jobs to take and they may only want to work in a particular location. One company reported an experience where a job applicant turned the job interview around so that he interviewed the selection panel members – then said “no thanks” to the company. Another company reported that there is not much in the pool (of engineers) to select from, and that “we offer and they reject”.

Industry

Stakeholders at the NSW forum identified several industry based issues that may contribute to skills shortages and skills gaps. Some of these are issues over which industry may, arguably, have some control.

For example, companies are seen as no longer training to meet their own requirements. For example, one company which has around 150 people employed in trade occupations reportedly takes on only 2 apprentices each year. This is consistent with reports to MLA that many companies in process manufacturing are not planning for the retirement of a significant proportion of its aging work force over the next 5 to 10 years.

Fluctuations in work force requirements can be significant in the process manufacturing sectors. For example, plant shutdown may require up to 3 times the regular work force, but may occur only once or twice per year. This additional labour is predominantly sourced from labour hire companies. Therefore companies do not need to take responsibility for full training of this component of the work force. However, this places increasing pressure on labour hire companies to play a primary role in training sufficient recruits to maintain the supply of skilled labour.

The NSW forum also identified potential impact from issues such as low wages for trainees and apprentices, poor wages in general and cultural issues such as employers' resistance to job sharing and an attitude of "us and them" from managers towards operators.

Effective industry responses

The forum highlighted companies' use of creative initiatives, flexibility and adaptations in response to their skills shortages/gaps. For example, some companies do not fill vacancies but restructure job roles, sharing the tasks/responsibilities across several other roles. Three key issues were highlighted in the forum – recruitment strategies, school based traineeships and the significance of community profile.

Recruitment strategies

Some companies report that they have no problem recruiting operators, however in some cases this seems to reflect that they have actually established successful strategies to address earlier difficulties. For example, one large company reports its strategy of opening up recruitment processes to a wider pool of potential recruits. This includes wider age range of candidates and they have recently employed 55 year olds.

Another strategy by this company is to change the selection criteria for applicants so that they no longer advertise for 'experienced machine operators'. Instead they advertise for the skills and aptitudes that they have identified as most important – areas like language, maths, team work, good attitude and mechanical aptitude. They recognise that candidates with these capacities can be trained in the operational skills required for a particular job.

This is supported by the initial findings from the national ‘Plastics and chemical industries skills needs research project’ – which identify capabilities such as mechanical awareness, commitment to quality production, positive attitude to work, preparedness to learn and good presentation as more important than qualifications or experience.

Community profile

One company reported a site which undertook a campaign in the local community and established a community consultative committee. The company distributed flyers in the local area and held meetings with local stakeholders. This has resulted in increased recruitment of workers and has significantly improved the company’s community profile.

School based traineeships

One company has invested significant time and money into enlisting school based new apprentices. They identified that the school system tends to push students towards university pathways and that parents push against trade qualifications which are seen as ‘getting your hands dirty’ roles.

The company identified that it wanted to ‘capture’ year 10 students who are making choices about subjects and career pathways. They approached local schools and met with school principals. They also attended P&C meetings to promote awareness of the company, the traineeships and potential for employment with the company.

The company now has 20 trainees who attend school 3.5 days per week, go to TAFE for a half day and an evening, and work on site one day per week with training and support from the company. They also offer paid work to the trainees during school holidays. The trainee is covered by insurance as an employee. The traineeship equates to two VET units and forms part of the HSC.

While there are currently no school based traineeships for the process manufacturing qualifications, the company uses business services traineeships and provides as much

industry context as possible. For example, trainees do their computer work in the batching area.

The company finds that the traineeships give the student an experience of the company and the industry; they also give the company an experience of the student. Many of the trainees have been recruited into permanent employment with the company. The company reports work place cultural change is resulting from the traineeships – operators are becoming father figures and no longer allow bullying or swearing.

Solutions: indications for future work

There is a need for strategies to address skills gaps in operator/production roles, so that employers have the right people with the right skills. These roles have not yet been targeted with initiatives, as they do not meet the definition of skills shortages (unfilled vacancies). There is a risk that the more visible, defined and regulated trade occupations and professions will attract attention and support under the skills shortages banner, while the difficulties faced by employers of other occupations are marginalised.

The issues raised in the forum indicate the need for actions and solutions which focus on up skilling, recognition of current competence, and flexibility – flexibility in duration, funding, gap training – to assist employers to establish and maintain an adequately skilled workforce.

Industry practices of broadening the selection criteria for recruits – recruiting for generic skills, attitude and aptitude and recruiting older workers – fit well with the demographic imperative to encourage people to enter, remain in or return to the work force and to increase the pool of candidates, for example via immigration. The process manufacturing sectors have a high participation of workers from non-English speaking backgrounds and, if immigration is increased, this relationship is likely to continue. RPL/RCC processes that identify existing relevant skills and map them to process manufacturing competencies would assist industry to select and up skill recruits from these target groups. Pre-employment training in areas like physics, chemistry, maths, computer literacy and interpersonal skills would assist in ensuring a

sound basis from which workers can develop required job specific skills and knowledge.

Increased flexibility in traineeships would assist employers to up skill workers to meet the skills requirements. Extensions to funding and incentive arrangements could be used to increase flexibility, for example, by targeting gap training (units of competency) and recognition of current competency, and by developing competency based funding formulae. Changes to the eligibility criteria for employer incentives could be used to assist industry to up skill adult (under 45 year old) workers and to train across a broader range of levels, including Certificate II.

Further lobbying of both State and Commonwealth governments is needed in order to achieve increased flexibility and responsiveness in the training system and improved national coordination. Specifically the forum identified:

- Support for recognition of competency
- Support for gap skilling
- Realistic government assistance to employers
- National coordination
- Incentives for adult trainees and apprentices
- Funding/incentives for Certificate II.

The forum also indicated the need to make comprehensive information and guidance available for “employers and employees trying to move through the maze to the goal”. This could include, for example:

- Assisting SMEs to apply/adapt what the big companies are doing – for example, assisting companies to work with their local schools to establish school based traineeships and providing liaison with DET.
- Working with industry to establish appropriate pre-employment training programs – eg covering physics, chemistry, computer literacy, interpersonal skills – and to access any available funding for implementing them.
- Promoting links between industry and local agencies such as job network providers, Group Training Organisations and NACs. Industry reports mixed experiences with job network agencies; however, the forum identified the ‘hidden unemployed’ as a potential pool of workers. Work could be undertaken to assist

industry to engage with initiatives that target unemployed people, the disabled, indigenous workers and/or other special needs groups seeking employment and to achieve good outcomes for all stakeholders.

- The process manufacturing sectors currently have limited participation in group training schemes, and report inconsistent outcomes. However, Group Training Organisations can provide valuable services – recruiting trainees, managing the training and employment requirements and providing ongoing support and mentoring to the trainee in the workplace. Work could be undertaken to raise awareness of the process manufacturing sectors with group training organisations, and in promoting group training schemes to process manufacturing employers.

Work is still required in order to improve the image of the industries with young people and their influencers. This could be achieved by strategies such as:

- further investment in marketing and publicity campaigns along the lines of the Make It! campaign
- career information strategies – providing up to date, attractive career information for students via careers expos, targeting careers advisors, web sites
- providing advice and assistance to companies who wish to improve their community profile; developing and promoting case study examples; assisting companies with their recruitment processes.

The forum highlighted that work could be undertaken to bring about changes in industry ‘culture’ – focusing on issues such as industry awareness and commitment to work force planning, recruitment and advertising practices, pay rates and job sharing.

The forum also raised questions about the role of labour hire companies in training and skills development. Research is required to identify the current training practices of labour hire companies and to identify any barriers and potential for labour hire to increase participation in training.

There is evidence of real skills issues for the process manufacturing sectors; evidence of some successful strategies being undertaken by individual companies; evidence of demand from industry for assistance and guidance in negotiating a complex system to achieve valuable outcomes for industry. These issues are complex and intertwined and

little has been done in a coordinated way to address the needs of the process manufacturing sectors.

MLA is committed to continuing to work with industry on these issues and the majority of the forum participants indicated willingness to contribute further. As the NSW industry training advisory body for process manufacturing, MLA is in a position to play a central role in liaising with government agencies, in providing advice and assistance to industry, in brokering partnerships, and in lobbying for change at government level. MLA has also had preliminary discussions with government bodies who may provide funds for skills initiatives, for example, programs to attract people into (or help retain them in) the workforce (including mature age entrants from other industries, people on parenting payments, disability, unemployment benefits).

MLA is seeking feedback on the initiatives listed in the ‘solutions’ section above; further input from industry will be sought in specifying the scope and target groups for selected activities as they are established.