

# **Where are the female trades teachers? A study of views on increasing the number of female trades teachers.**

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## **Abstract**

Governments continue to spend considerable amounts of funding to support increased numbers of women and girls studying in what are considered to be non-traditional trades. Often such funding is targeted at increasing the awareness of career opportunities for girls including through Skillsone TV, try-a-trade projects, and helping to establish networks to support women and girls during their studies and in their jobs. Current networks include Women in Mining and Resources, Women in Horticulture, Women in Automotive and Tradeswomen in Building and Construction.

Despite these programs, the number of women and girls in non-traditional trades has remained relatively static. Our study looks at increasing the number of female trades teachers providing further role models for women and girls, and career opportunities. We survey two TAFE Institutes in NSW, Women NSW, AWPAA, the Industry Skills Councils and NSW ITABs, Group Training Australia and a range of women's networks. We ask the questions:

- \* What numbers of female trades teachers are there?
- \* In what ways would these teachers have a positive impact on increasing numbers of women and girls in non-traditional trades?
- \* What strategies do you suggest to attract female trades teachers?

## **Introduction**

Over the years projects to increase the number of women and girls in male dominated occupations have come and gone. The reality is that there continues to be a huge gender disparity in certain industries. Recent figures suggest women make up 45.7% of the overall Australian workforce across all industries, but only 22.6% in utilities, 15.1% in mining and only 11.8% in construction (WGEA, 2011)

The aim of this research is to ascertain whether the presence of female teachers in trade teaching sections in TAFE would be advantageous to increasing the number of female students.

## **Research Method**

We identified key stakeholders, including current female and male teachers, and relevant industry bodies, and by way of guided conversations based on a questionnaire, discussed their views of and experiences with this issue. One of the difficult parts of this research was to find the female trades teachers to interview. Currently a number of these teachers are teaching at diploma level rather than trade, and are more often employed on a casual or sessional basis. But as one respondent noted, it is hard to increase the numbers of female trades teachers when there are so few females in the trades overall.

Our questionnaire focused on the issues of:

- \* the difficulties with encouraging girls and women into the trades as students
- \* whether female teachers could have a positive impact on increasing numbers of female students, and
- \* strategies to attract female trades teachers and whether there are any existing barriers

Whilst most participants in the research strongly supported the concept of increasing the numbers of female trades teachers, some also asked whether gender was the defining issue, or rather a good teacher with the right skills and understanding of the needs of female students?

## **Does the Literature have anything to say?**

Very little research has been undertaken on the benefits of female teachers to women and girls studying in the trades. Yet mentoring, role models and networking are invariably part of the specialist programs developed to support women and girls in these male dominated industries. Young women entering the trades speak of the support of their school teachers in introducing them to the trades. (Women NSW – Case Studies)

The American website, Tradeswomen Now and Tomorrow, notes that even after more than 25 years in the trades, women still face unique challenges in entering and succeeding in male dominated careers. These challenges are identified as being isolation, lack of role models and mentoring, discrimination in hiring and laying off, and task allotment (Tradeswomen Now and Tomorrow website). This was also found to be the case in New Zealand. A key objective during 2005–07 for Northland Polytechnic in Whangarei was to conduct research into factors impacting on women's tertiary studies and employment options (Northland Polytechnic 2006). As part of this research, Jane Scripps cites gender segregation and discrimination as the main causes for the lack of women in vocational trades. (2006). Scripps claims that, while equity legislation may be in place, it has little effect on women entering male-dominated

trades. She notes that employers are not keen to take on female employees and that the majority of trade tertiary training is 'run by men for men'. (Scripps 2006, p.19).

This culture is so entrenched that in one extreme example the London Fire Brigade Training College in England was closed for a year and all its trainers replaced to bring about change (Lewis 2004). As in the trades, gender discrimination in the form of myths (such as women not being strong enough) is perpetuated to maintain the culture. Change, particularly with regard to gender, is viewed as an attack. Recommendations to effect change in the British fire brigades included a move away from a paramilitary style of training to one based on the adult learner model of further education institutes or university. Lewis recommends a number of measures for the recruitment and retention of female fire fighters, which include a female trainer on every recruit training course; clustering female students; equity and diversity training for both trainers and all new recruits; and training.

The Social Inclusion and Vocational Access Skills Unit with TAFE NSW, has set up a mentoring program in conjunction with Women NSW. This has been set up to support women and girls studying in non-traditional areas, to improve apprenticeship retention and completions and increase the number of women working in male-dominated industries. The SI&VA website describes mentoring in the following way: "As a mentor you have the opportunity to ignite a spark in the person you mentor, create a legacy, and develop your own leadership skills along the way. You pass on valuable lessons you have learned, support your mentee through highs and lows, challenges and achievements as they work toward their goal." The same could be said about a teacher. The mentoring program is most appropriate for those girls studying in male dominated industries where they may feel isolated, and is provided by TAFE teachers in appropriate vocational areas. As part of this project 'Women in Trades' facebook pages have been developed, one for the students and one for the teachers. Both male and female teachers have been encouraged to take on the mentoring in order to achieve social change.

In his report for the NSW Office for Women's Policy, Macquarie University academic Ian Watson used the 2006 Census data to collect evidence about the situation of women in the labour market. He makes the point right from the start that the presence of women in the trades is negligible, and that "the occupational patterns within the trades area show strong gender stereo-typing". (Watson, 2012, p. 2) In comparison to men, he concludes that "women in the trades are concentrated in the lowest income brackets, with nearly three quarters earning below \$800 a week, compared to 46% of men." The income difference was even more pronounced with tradespersons holding VET qualifications. One of the other conclusions from his research is one well documented, that women are more likely to be working part-time. The only trades occupations with large numbers of women were in hairdressing and commercial cookery.

In a further study analysing the career paths of women in the trades, Watson describes that of the group of women he tracked from 2001-2010. The women most likely to stay in the trades were those who were better paid and had higher level qualifications. Overall, women were more likely to leave their initial occupations than their male counterparts. (Watson, Sept 2012, p. 2) Whilst these issues of retention and career mobility are complex, it is apparent that higher level qualifications for women and girls are important, along with a range of occupational opportunities that can be made apparent through their studies. It may be that the gender pay gap would in part be addressed if there were more women in the trades.

Further information on gender by occupation is available at Appendix A, where the low percentage of women and girls in a whole range of trades is outlined.

Adult Learning Australia runs some courses for women looking to work in non-traditional areas. Their magazine *Quest* in 2013, described a program run from a Neighbourhood House in Victoria called ‘Women in Trades and Technologies Course’, a pre-apprenticeship course. The course teaches practical skills, encourages contact with potential employers and develops knowledge of how different workplaces operate. The female co-ordinator noted that “for women, getting into a trade is not nearly as straightforward as it is for men. Entrenched and outdated attitudes and lack of encouragement can be real barriers”.

The policy paper developed by Microsoft and the UN in 2013, focuses on girls in STEM and ICT careers, but it makes a number of pertinent points about appropriate teachers. Amongst a number of issues and changes that would help to encourage more girls to study STEM subjects and enter ICT careers, the issue of teachers is raised. One of the obstacles to girls studying STEM subjects is identified as perceived irrelevancy, and one of the potential solutions is that “teachers must relate to girls and young women by talking about science and technology in ways that resonate and relate to their lives and aspirations.” (2013, p. 9) The point is also made that many girls don’t really understand what engineers actually do, and think that engineering is a dirty manual occupation, a misconception that carries over to many traditional male occupations. The issue is again raised in the section on ‘combating stereotypes’, where the point is made that teachers can contribute to stereotypes about gender differentiated occupations, and that increasing the number of role models is critical. It is also pointed out that the 55<sup>th</sup> session of the Commission on the Status of Women in 2011, made one of their recommendations that female science teachers and professors needed to be recruited as part of the change process to encourage more girls to study STEM subjects and ICT. (2013, p. 4)

In her speech that launched the Australian Human Rights Commission’s program ‘Women in male-dominated industries: A toolkit of strategies’ on 21 May 2013, Elizabeth Broderick the Sex Discrimination Commissioner said: “On the whole, in 2013 we have not fully harnessed the invaluable contribution women can make – particularly in industries such as mining, construction and utilities. These industries represent a thriving part of Australia’s economy, and as they continue to grow, both men and women can make an increasing contribution to their expansion and success...This is why the toolkit we are launching today is so important. It provides an opportunity for employers, employees, government, community, and unions to understand that women are critical to the sustainability of these industries.”

She went on to speak of gender stereotypes being developed at a very young age: “But there’s no question that educational choices are in large part associated with gendered stereotypes... Within the home it is also rare to see women and girls encouraged to consider careers in mining, construction or utilities. This is compounded by the difficulties women face in finding information about possible career paths in male-dominated industries as the conversation is rarely directed at them.”

Given the impact of family and the home on career choices of young people, teachers have the opportunity to act as role models and help break the cultural perceptions around careers for males and females.

It is worthwhile in this paper making a few comments about the industry associations and other supportive groups that have been established to provide mentoring roles and networking opportunities for women and girls in non-traditional occupations. One of the drawbacks appears to be sustainability, or growing the association/group to the size where work can be undertaken by paid employees rather than volunteers.

A few programs and groups have arisen as part of projects in universities, such as the Digital Divas Club. The Digital Divas project was funded from 2009-2011 through the Australian Research Council (ARC) Linkage Scheme, and was undertaken by four Victorian academics. This project was developed to build girls' ICT skills and confidence, increase girls' motivation to continue studying ICT and enter the ICT workforce, and to help change the perceptions of girls around IT as a career for women.

Others programs are attached to Industry Skills Councils, or are themselves not-for-profit national associations. The National Association of Women in Construction (NAWIC) is a not-for-profit organisation formed in 1995 to promote and improve the construction industry by supporting women to enter and remain in the industry. The networking opportunities provided by this association support women in pursuing and establishing careers in construction across a diverse range of occupations, and provide members with an awareness of issues related to this male dominated industry.

The automotive industry, according to AutoSkills Australia, has a critical trade skills shortage with 34,000 positions needing to be filled, including mechanics, panel beaters, spray painters and auto electricians. Women and girls make up around 4-5% of trade apprentices. AutoSkills is initiating a campaign to coincide with international women's day 2014, to prompt women to register their interest in becoming employed tradeswomen in the autoskills industry, called MAAP My Future. They used the popular television show 'The Project' to case study three female apprentices as to how they came to be in these male dominated areas and what it is like to be in such non-traditional jobs and working environments.

SALT, Supporting and Linking Tradeswomen, involves a few female trades teachers in TAFE, and is a non-profit incorporated organisation which began in 2009 to provide a support network for tradeswomen, apprentices and women who wish to enter the trades. In Australia the figures for tradeswomen are very small with only about 5000 tradeswomen across the whole of Australia. The aims of SALT are: provide support to tradeswomen in Australia including apprentices and women seeking to work in the trades; provide avenues for women to meet other tradeswomen, apprentices etc and share experiences; promote women in the trades to the general public and industry; advocate for change to attitudes to women working in the trades; campaign for changes which enable women to train and work in trades; and promote diversity and acceptance for all people in the trades.

A new program was launched on 6 March in Canberra, with Federal Government support, called Industry Women Central. It describes itself as "your first choice platform to all that is offering, happening, engaging, exciting and worth celebrating in the building, construction, and property services industries and beyond. Increasing attraction, engagement, education, visibility, advancement and promotion for women and non-traditional industries through cross sector partnerships."

It provides access to education scholarships, mentor programs, speaking opportunities, award programs, career advancement, board and committee opportunities, and participation programs for women and girls.

Most of these programs/groups have mentoring and networking roles, but interestingly rarely is the issue of the impact of trades teachers raised, nor the opportunities available to female tradeswomen in becoming teachers and having the opportunity to change gender stereotypes through this role.

### **What did the teachers and industry have to say?**

We had responses to our questionnaire in the industry areas of Baking/Pastry Cooking, Transport and Logistics, Maritime, Auto Skills, Painting and Decorating, Manufacturing Skills, Design Engineering, Electrical Engineering, as well as from various organisations including Australian Workforce and Productivity Agency (AWPA), Social Inclusion and Vocational Access Unit (SI&VA), and Group Training Australia (GTA).

All respondents agreed that increasing the numbers of women and girls in non-traditional trades was an important issue. A couple mentioned that a balance of genders was desirable, but there was no point in forcing the issue. The responses generally fell into three broad categories – role models, career pathways and barriers.

#### *Role Models*

Role models were considered an important part of the whole process. There was a strong recognition of the importance of families when young people make decisions about their careers, and this was particularly so with young girls. Those that entered the trades tended to come from a background where other family members worked in trades/technical areas, such as maritime. In this occupational area, the issue of isolation was of particular concern. Group Training has found that industry female field officers have been very successful role models.

Respondents strongly supported the need to embed cultural change, coming initially from the top of the organisation and then supported by trainers and supervisors. There are a growing number of networks in industry associations for women which provide mentors. One of the problems with such networks was that they were often not sustainable. Governments and funding bodies needed to consider the long term outcomes of such programs, including the changes that growing numbers of women and girls in the industry will make in workplaces.

Female teachers were highlighted as another good role model for both male and female students. Seeing women as competent tradespeople working alongside male teachers illustrated that both were able to work well together. It was suggested that where there was a lack of female teachers, that you could achieve somewhat similar support and role models through linking female students and teachers across trades. In this way, students can still benefit from seeing how the women have managed issues and achieved success, and how they have remained in the industry and forged a career.

#### *Pathways*

Girls need to be able to see a career path, and to make a non-traditional occupation a career of choice. Careers Expos involving TAFE teachers were seen as an important way of making the industry visible to girls at school, and enabled the teachers to explain the breadth of jobs available. There were more mature aged women entering areas such as engineering than girls straight out of school, and it was felt that innovative design areas were enhanced by female skills in communication and design.

Supporting more women to take up training in these industry areas was critical. Media perceptions were considered important, and the need to ensure that women and girls are depicted working in these industries. SkillsOne TV has been a good use of media to support girls and women in non-traditional occupations, and case studies are regularly shown as part of the programs. In many industries the growth of 'home' shows, including *The Block* and *My Kitchen Rules*, has helped popularise some trade areas, especially with the use of celebrities such as Maggie Beer. However, these shows may also depict unrealistic views of the occupation, thus leading to disappointment down the track. An example was given of girls in baking trades expecting to be able to undertake practical work still wearing jewellery and having long nails, as some of the TV presenters such as Nigella Lawson do. Media will also promote the "pretty" tradeswomen, skewing the stereotypes once again.

It was recognised that going hand in hand with this, was the need to find ways to encourage girls to take the STEM subjects at school, so that they had the Maths and Science to enter and progress through these careers. The impact of VET in schools (VETis) was variable, as it often depended upon how the school itself treated the VET in schools students. Were they supported at school and pathways opened for them, or were only students who were perceived as not being academic or behavioural problems pushed into studying at TAFE or undertaking these programs within the school environment?

In the Electrical Engineering area, there were still small numbers of female students, in one college perhaps one a semester amongst five classes of males. Often these women would be mature aged, often already working in that industry area, but without the proper qualifications. One female teacher noted that when she studied Electrical Engineering at university, there were 12 females amongst 800 males, suggesting also that there had not been significant change.

Our attention was also drawn to the history of women in trades, including the numbers of women who worked in such occupations during the war. The comparison was drawn to the current day, where due to enduring skills shortages there was a growing demand for more women and girls to fill such positions. It was also noted that a number of women coming from overseas were more likely to take up positions in trades and technical areas, as this had been a more acceptable career path in their countries. In some industries such as bakery, there was not so much a trade path but an opportunity for skilled women to operate home businesses.

It was felt by many that industry was recognising the problem, and that industry bodies such as the Institute of Engineers ran 'A Women in Engineering' course to raise the profile of this career path.

Some respondents raised a concern about career advisers in schools, and the knowledge they had about career paths and subjects girls should take to enter areas such as manufacturing and engineering. There was a suggestion that career exploration should start at a younger age with girls, parents and teachers all involved. This was reinforced by a number of respondents who felt that as gender identification begins so early, that overcoming these stereotypes required a multi-pronged approach which included families and schools.

### *Barriers*

The third question focused on the barriers that women might face, both in entering these industries and in remaining employed in them. The drop-out rate for women and girls in non-

traditional trades is very high. Barriers spoken about included once again the public and media perceptions and the fact that it should be acceptable to see women in overalls. There was still a sexist attitude from employers and co-workers in some industries, and bullying of apprentices still occurred. Programs that have been run, such as 'Girls can do anything', were seen as very important messages from governments, and that such campaigns have had positive spin-offs in the past.

The best advice about careers was seen as being available digitally, and through events such as 'try a trade'. Again parents were seen as both supporters and barriers, and the majority of young people said that they found out about jobs through their own networks, especially family. Pre-apprenticeship programs for young women were seen as important.

One respondent mentioned that the main barrier was the misconception that girls had of some industry areas, and their uninformed and often unchallenged views that careers in male dominated areas were physical and boring. The possibilities in innovation and design, particularly at higher VET qualification levels, needed greater promotion.

The question was also raised around how employers perceived stereotypes, and whether many of them still thought that girls would not have the skills they needed, especially in smaller companies. Industry associations and large corporations often now have positive discrimination programs, and quotas for increasing the employment of women and girls. A respondent in one major industry area was considering further research, as to whether the perceptions of employers was still a major barrier to increasing the numbers of women and girls in that industry. In an industry such as maritime it was felt that there still remained a strong bias against women on board boats, especially with the smaller operators, and a range of industry partners continued to promote an outdated view of the work involved. Remaining in some male dominated occupations was an issue for many women, given the issues of shiftwork and being away from home.

In response to question four about programs that work, the industry associations and networks were mentioned, including Robogals, and the networks online such as Fanelle, Lady Tradies and SALT. The Queensland association of 'Resourceful Women' had an initial target of 12% of women in the industry by 2020, but they had achieved it by 2011, so have moved their target now to 20%.

#### *So where are the female teachers?*

In the fifth question we asked about the numbers of female trades teachers. Numbers across NSW are difficult to quantify given the casual and lack of ongoing employment for many TAFE teachers, so we were given responses such as three female trades teachers in Electrical Engineering amongst hundreds of male teachers. Whilst nobody suggested that it was difficult being a female teacher in TAFE, there were suggestions that in some of the male dominated areas there was a culture that did not support women to progress into management as much as would have been liked.

There was strong support in the sixth question for the positive impact that female trades teachers could have. The impact was seen as operating as well on their male counterparts, and changing attitudes to females in the industry. One respondent supported the growth in numbers of female teachers, but didn't see it as critical to getting more girls into the trades. She felt it was still more about media perceptions and the stereotyping of girls' careers.

The impact of increased numbers of female trades teachers was seen as considerable. Respondents agreed with the suggestions in the questionnaire about the possibilities for these teachers to be role models, to support students, set up networks, to make training more female oriented and family friendly, to be a go-between with employers, to help change the culture in TAFE and to assist with employment opportunities. The cultural change possible and the impact on industries of increased numbers of male and female teachers working together in what were traditionally male employment areas, was emphasised by a number of respondents.

Female trades teachers were considered to have the opportunity to instantly break down stereotypes and become role models. Female students appreciated having female teachers in these male dominated occupations, as they did not feel as isolated. This could be an issue too, where families were not totally supportive of such pathways. Female teachers could assist in supporting more female friendly workplaces. But it was noted that girls generally had to be enrolled in courses before they were aware there were female trades teachers, therefore the possible impact was not maximised. In the TAFE system one respondent indicated that a female Head Teacher could help male teachers to work more effectively with female students. The teachers were able to interact with industry groups and contribute to and promote magazines such as 'Women on the Water'.

Question eight considered ways of attracting more female trades teachers, and it was felt there were a number of barriers. The most critical drawback was that there were so few women in the industry there was not a large pool to draw from. In many industry areas, potential teachers had to drop pay to take up teaching positions, which was not always an attractive prospect. The lack of permanent positions and women leaving the industry to raise families were also barriers. Being away from the workforce could mean it was more difficult to find a teaching position on return as these women might no longer be 'industry current'. For some women it was felt that the requirement to have to pay for a Certificate IV in Training and Assessment before taking up casual teaching work at TAFE, was a barrier to employment. The issue of targeted recruiting and quotas was raised, including when male trades teachers retired. TAFE needed to make more use of teacher profiles that highlighted the female trades teachers, especially when providing careers materials to schools.

A number of pro-active suggestions were put forward to increase the numbers of female teachers, including the retraining of teachers in related areas. It was suggested that there could be women who started in the industry but left for various reasons including for family reasons, and that they may be interested in updating qualifications and moving into teaching areas. This would follow a similar promotion to that undertaken with nurses a few years ago. It was also felt that with industry onside, there could be greater promotion of the need for female teachers. Girls who were industry Award winners were thought to be excellent future teaching prospects.

One suggestion was that networks such as WAVE could be useful to assist women negotiating their way through the TAFE system to make the transition from tradie to teacher.

## Conclusions

There are undoubtedly economic benefits to be gained from lifting women's workforce participation overall, including alleviating labour market shortages and providing business with access to wider pools of labour. As one respondent said, "Without being able to choose employees from 100% of the workforce we will never be able to fulfil our capacity as a nation." Programs for women and girls, some of which have been highlighted in our paper, have positive impacts, but should the focus be the economic benefit or the benefit overall for women?

According to Elizabeth Broderick, the Sex Discrimination Commissioner, "the underrepresentation of women in industries considered to be male-dominated – mining, utilities and construction – is an issue that is not only undermining gender equality in Australia, but is having negative effects on industry performance and our economy." (May 2013) The two are intertwined, but is it that the economy imperative is the 'real' driver of these programs?

History shows that every time there is a skills shortage, programs to encourage women into non-traditional trades appear, but are not sustained when economic conditions change. As one respondent said, increasing the number of women in trades is a long-term incremental process, therefore the programs need to be sustained and sustainable. Cutting funding to programs once they start to achieve successful outcomes or the economic conditions deteriorate has often resulted again in the decrease of women in these occupations.

Most of these programs recognise the importance of mentoring and networking to support women and girls, but the value of teachers is not included. Yet evidence from many other sources, including NCVER student satisfaction surveys, acknowledge the importance of good teaching to successful student outcomes. Teachers provide much of the networking and role modelling which has been highlighted as a necessity. One respondent to our questionnaire suggested that, "Gender may not be the most important issue, but rather the right teacher with the right attitude."

Many respondents commented that a female teacher can have a positive impact on male students as well as female students. Having male and female teachers working side-by-side, and respecting one another's abilities, demonstrates that there is a place for women in this industry, and will help to change mindsets that still exist around male-dominant industries. As one of the respondents to the questionnaire said, "If you have no female teachers, it sends a message of its own."

Given that all respondents to the questionnaire were supportive of increasing the number of female trades teachers, this should be included as an important strategy to support the growth and acceptance of women and girls in non-traditional trades.

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## Appendix A: Current statistics on gender segregation in the trades in NSW 2012

Trade occupation	No.men	No./%Women	
Chefs	21,274	4,385	16.7
Gardeners	15,318	2,513	14.0
Shearers	673	122	8.9
Printers	5,389	415	7.4
Signwriters	698	131	6.8
Binders, Finishers and Screen Printers	1,034	104	5.8
Telecommunications Trades Workers	5,075	234	4.5
Electronics Trades Workers	9,221	335	3.3
Plasterers	8,633	291	3.2
Electricians	43,769	866	1.9
Cabinetmakers	4,134	112	1.9
Butchers and Smallgoods Makers	7,875	119	1.3
Carpenters and Joiners	39,522	424	1.1
Motor Mechanics	26,923	199	0.8
Structural Steel and Welding Trades Workers	18,386	96	0.6
Metal Fitters and Machinists	31,974	100	0.3
Plumbers	22,025	-	0.0*
Painting Trades Workers	14,821	-	0.0*
Bricklayers and Stonemasons	9,174	-	0.0*
Airconditioning and Refrigeration Mechanics	8,979	-	0.0*
Wall and Floor Tilers	5,893	-	0.0*
Panelbeaters	5,201	-	0.0*
Aircraft Maintenance Engineers	3,999	-	0.0*
Greenkeepers	3,805	-	0.0*

Glaziers	3,665	-	0.0*
Vehicle Painters	3,362	-	0.0*
Sheetmetal Trades Workers	3,011	-	0.0*
Chemical, Gas, Petroleum and Power Generation Plant Operators	2,524	-	0.0*
Roof Tilers	2,505	-	0.0*
Floor Finishers	2,249	-	0.0*
Electrical Distribution Trades Workers	2,229	-	0.0*
Boat Builders and Shipwrights	2,150	-	0.0*
Vehicle Body Builders and Trimmers	1,750	-	0.0*
Precision Metal Trades Workers	1,634	-	0.0*
Automotive Electricians	1,488	-	0.0*
Graphic Pre-press Trades Workers	1,132	-	0.0*
Toolmakers and Engineering Patternmakers	999	-	0.0*
Canvas and Leather Goods Makers	620	-	0.0*
Metal Casting, Forging and Finishing Trades Workers	466	-	0.0*
Upholsterers	390	-	0.0*

Non-traditional trades are those with less than 25% representation of women. The '0' indicates low numbers of women.

Sources: SpaceTime Research, Employed Persons (ST EO8\_Aug96\_ANZSIC06) by Occupations Unit Group, Sex, State, Status in Employment – from August 1996-August 2012, Australian Bureau of Statistics (ABS); Skills Shortage List NSW 2011-2012, Commonwealth Department of Education, Employment and Workplace Relations (DEEWR)