NSW Department of Education

Women in Trades Promising Practice Review

Training Services NSW | October 2022

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Acknowledgment of Country

The NSW Department of Education recognises the traditional custodians of the lands and waterways where we work and live. We celebrate Aboriginal and Torres Strait Islander people's unique cultural and spiritual relationship to Country and acknowledge the significance of their cultures in Australia.

This artwork was commissioned for NSW Department of Education reconciliation action plan. It was created by Suzanna Bulai, a student at Boggabilla Central School on Gamilaraay Country in northeast of NSW.

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Introduction

Training Services NSW provides vocational training opportunities across NSW. Through our programs such as Smart and Skilled, apprenticeships and traineeships and adult and community education we support individuals to take the first step into the workplace, retrain for new opportunities or upskill to progress their career.

Training Services NSW established the Trade Pathways Program to address the shortage of trade-trained workers and increase pathways to training and employment

Women represent only 2% of apprentices and tradespeople in industries such as construction, engineering and automotive. The male-dominated trades such as bricklaying or boilermaking are often known as non-traditional trades[1] for women.

Increasing women's participation in male-dominated industries will address critical skills shortages, create more inclusive and diverse workplaces, broaden women's career opportunities, and boost the state's economy.

In partnership with Training Services NSW Behavioural Insights Unit NSW is investigating the barriers and enablers to women taking up apprenticeships in non-traditional trades. The Women in Trades Promising Practice Review is the first report from the Trade Pathways Program research project.

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1 Non-traditional trades are trades in which women represent less than 25% of the trades workforce.

Key Findings

Women make-up a small proportion of total apprentices in NSW, approximately 9%.

In key industries facing skills shortages the representation of women is even lower. As of October 2022, there are 63,824 apprentices in training in NSW, yet only 5,924 are women.

The NSW Behavioural Insights Unit analysed twenty-two international studies as part of an evidence-based approach to identify interventions to increase the participation of women in trades. The research indicates the barriers women face in completing trade training and enablers to increase their representation in trades.

The enablers and interventions in this report can be implemented by influencers – such as training providers, careers advisors and employers – to engage, support and retain women in trades.

ISSUES

INTERVENTIONS

1. Influential people don't value VET pathways for women

- Promote examples of success for women in trades
- Emphasise professional, personal and community benefits of trades for women
- Highlight the positive aspects of VET compared to university
- Underline what women miss out on by not considering a trades career

2. More can be done to eliminate gender bias

- Shift the context from getting dirty and heavy lifting to creating and fixing things
- Seek workplace feedback to address discrimination
- Match employers with more experienced peers for advice
- Provide timely advice to girls about their workplace rights
- Send personalised invitations inviting other businesses to join a network of support

ISSUES	INTERVENTIONS

3. Recruitment strategies and policies disadvantage women

- Use personalised emails and phone calls to encourage women to keep applying
- Hire a group of women to create a network of support
- Use templates for advertising and the recruitment journey
- Adjust behavioural language in job ads to make it clear that women are welcome to apply
- Simplify apprenticeship applications. Reduce unnecessary steps and administrative burdens

4. Parents, teachers, and career advisors need greater awareness of VET opportunities

- Develop timely prompts, checklists and conversation guides for parents, careers advisors and teachers
- Develop decision trees with case studies of different career and life pathways for girls
- Promote the positive potential of VET study and careers e.g. earning potential comparison to university

Issues and Barriers

1. Influential people don't value VET pathways for women

Perceived as low-status

Preference for university

Framed as 'not for girls'

Can't envisage trade career

2. More can be done to eliminate gender bias

Perceived as dirty work & for men

Workplace discrimination

Harassment in workplace

Given lower skilled work

Lack of social support

3. Recruitment strategies and policies disadvantage women

Informal networks

No formal HR process

4. Parents, teachers, and career advisors need greater awareness of VET opportunities

Assume students understand VET

Perceived fewer jobs

Not prepared for workplace

Perceived lower pay

1. Influential people don't value VET pathways for women

1.1 Perceived as low-status

Behavioural barriers

> We avoid stereotypes that make us feel like outsiders (stigma).

Parents, teachers and careers advisors perceive VET as 'lower status' and position it as 'Plan B'. University is seen to lead to higher success.

Enablers and interventions

> Draw attention to benefits and career relevance of trades (personalisation).

Promote tradeswomen's professionalism and success. Show tradeswomen earn as much or more than university graduates, are more likely to find work and may end up running their own business. 'There is so much to learn and you have to use your brain'.

1.2 Preference for university

Behavioural barriers

> Individuals tend to follow what they think they ought to be doing (injunctive social norms).

Studies show that influential people believe that 'everyone prefers university'. Influential people compare VET to university, instead of considering its own merits.

Enablers and interventions

> Show that VET careers require skill, that the work is rewarding, and it has community benefit (prosocial).

Emphasise increased livelihood, contribution to community, improving possibilities for all women.

1.3 Framed as 'not for girls'

Behavioural barriers

> We set our expectations based on our observations about what's commonly done, and examples we think we see around us (descriptive social norms).

Influential people position VET as 'not for girls' and only for non-academic boys. Correcting stereotypes is not enough. Research shows that short-term exposure to STEM-careers can lower girls' confidence that they can do well in science.

Enablers and interventions

> We are more likely to follow through on a new action when we plan how, when and where we will do it (commitment device).

Increase sign-up to attend all-girls school information session for VET careers. Include guided activity on VET subject selection. Follow up with reminders ahead of Year 10 and Year 12 preferences.

1.4 Can't envisage trade career

Behavioural barriers

> We are socially conditioned to follow the people around us, even when we see them making a less than ideal decision (social influence).

Studies find that women who don't have tradeswomen role models can't envisage this career path. That is, 'You can't be what you can't see.'

Enablers and interventions

> Highlight what women miss out on by not considering VET (framing effect).

E.g., 'Don't let her miss out.' 'If I hadn't done a trade, I wouldn't own my own business, and my family wouldn't see what a successful woman looks like'.

2.1 Perceived as dirty work & for men

Behavioural barriers

> Our culture influences whether we make positive or negative generalisations about other groups (stereotypes).

Employers regard trades as 'men's work' involving heavy lifting, getting dirty, and not suitable for women.

Enablers and interventions

> Encourage the use of technology to reduce focus on physicality (framing effect).

Shift the context from getting dirty and heavy lifting to building and fixing projects safely. Technology minimises the need for physical exertion and exclusion of women. Support employers to use technology so they are motivated to hire more women.

2.2 Workplace discrimination

Behavioural barriers

> In situations that cause anxiety, people avoid acting to eliminate potential risks (risk avoidance).

Parents, careers advisors and girls fear women studying trades will face sexism, harassment and that discrimination will impact women's career progression.

Enablers and interventions

> Provide information on how to stop bias at work and give people a chance to act (feedback loops).

Create a feedback loop for employees to help eliminate discrimination. Prompt changes to recruitment by explaining how discrimination impacts business.

2.3 Harassment in workplace

Behavioural barriers

Employers and VET teachers give women unfavourable treatment, and ethnically diverse women experience compounded disadvantage (discrimination).

A study found 38% of women who started, left or completed a trade reported experiences of gender discrimination at work. Women apprentices can face 'sexist jokes and comments', and intimidation in their VET classes.

Enablers and interventions

Get employers to imagine the future and how to achieve goals. During pre-apprenticeship courses, give women practical advice on how to respond to harassment. Increase women's confidence using hypothetical examples of workplace discrimination and practice responding (if-then-plan).

Match employers and VET teachers with more experienced peers to get practical advice. Set and monitor goals to make the workplace more welcoming and eliminate discrimination. Provide girls with timely advice about their rights at work. E.g. how to navigate male-dominated environment and where to seek support and resources.

2.4 Given lower skilled work

Behavioural barriers

Individuals prefer to avoid losses rather than keep equivalent gains (loss aversion).

Research shows women apprentices get fewer career opportunities, because some employers give women lower skill roles.

Enablers and interventions

Offer employers financial incentives for meeting gender targets (incentives).

Reduce bonuses when targets are not met. Ensure rewarding of meaningful, skilled roles.

2.5 Lack of social support

Behavioural barriers

Evidence shows women miss out on opportunities at work (unconscious bias).

Women can lack social support, making getting help hard when workplace discrimination occurs.

Enablers and interventions

Draw on the power of networks. People are likely to take action when a friend asks (peer effects).

Send personal invitations from influential employers and invite businesses to join a support network for women apprentices. Encourage businesses to share posts and sign-up link to join the network.

3. Recruitment strategies and policies disadvantage women

3.1 Informal networks

Behavioural barriers

> Our social networks give us benefits that improve our job prospects (social capital).

Women from 'non-tradie' families lack informal job networks to help them find apprenticeships.

Enablers and interventions

> Offer encouragement at emotional peaks of the recruitment journey (peak end rule).
>
> Provide peer support and reduce the hassle of taking up unfamiliar jobs with a group opportunity (social support).

Get women to sign up to receive email and phone encouragement to keep applying for apprenticeships.

Create a peer opportunity by hiring a group of women at the same time to join a regional network. Women receive peer support and share career resources and tips.

3.2 No formal HR process

Behavioural barriers

> When faced with new options, we prefer to do nothing or stick with what we know (status quo bias).

Studies show that employers find formal recruitment a hassle. They lack HR infrastructure to improve the process. They don't consider women's work/life balance.

Enablers and interventions

> Reduce the hassle of recruitment with templates and easy English job advertisement suggestions (friction costs).

Make it easy for employers to use formal recruitment. Provide templates for advertising and other recruitment processes.

Test behavioural language in job ads to demonstrate impact of formal recruitment. E.g., gender inclusive language, promote work/life balance, and parental leave.

4. Parents, teachers, and career advisors need greater awareness of VET opportunities
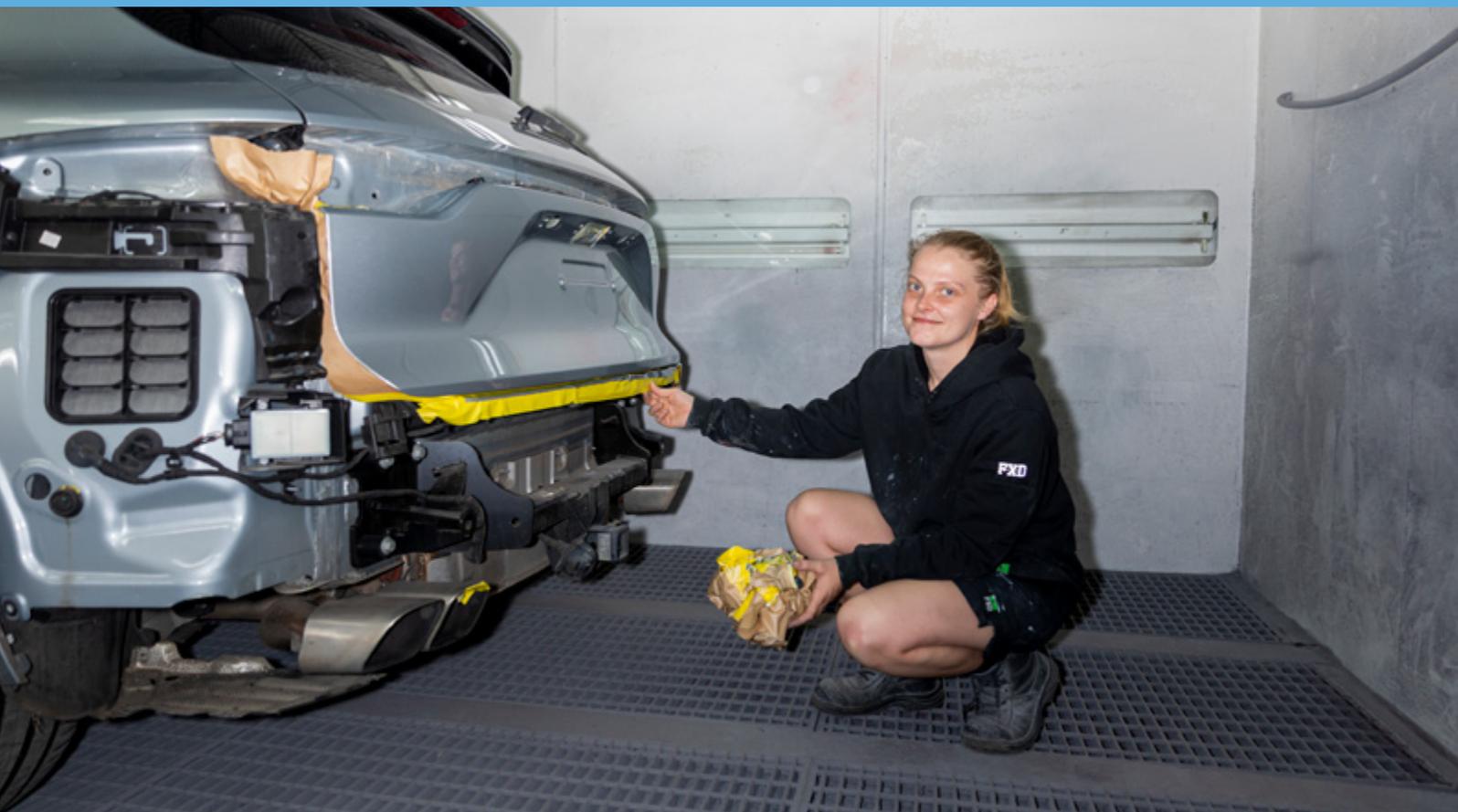
4.1 Assume students understand VET

Behavioural barriers

> We go with pre-selected options, even if that means not being given an option to do VET (default bias).

Parents, teachers and career advisors assume students understand VET, even though they've never discussed this option. Consequently, students don't know what VET courses exist and requirements.

Enablers and interventions

> Streamline conversations about VET careers using checklists and prompts (simplification).

Provide a timely prompt, checklist and conversation guide for parents, teachers and careers advisors.

4.2 Perceived fewer jobs

Behavioural barriers

> When we are missing information, we avoid risks, even if it could lead to higher rewards (ambiguity bias).

Parents, teachers and career advisors think there's fewer opportunities in VET careers. They don't understand the diversity and opportunities. Because they are unfamiliar, they see TAFE as a risky option for girls.

Enablers and interventions

> Create a rule-of-thumb or simple decision aid (heuristic).

Spell out the missing context about trade careers, and emphasise the benefits of taking a chance on the road less travelled.
Create a decision tree with case studies of different career and life pathways for girls. E.g. 'choose your own adventure'.

4.3 Not prepared for workplace

Behavioural barriers

> When we are strained, we lack mental energy to make new decisions, so we end up making tradeoffs (scarcity mindset).

Some pre-apprenticeships do not adequately prepare women for on-the-job conditions. A previous trial by the BIU shows that women in Central and Northern NSW are less likely to complete their apprenticeships.

Enablers and interventions

> Reduce mental effort in applying for apprenticeships (friction costs).
>
> Send behavioural messages with encouragement and links to resources. Reduce paperwork and make it easier for women to apply for apprenticeships (sludge audit).

Send women weekly tips about how to improve their CV, application letters, and other advice. Simplify apprenticeship applications. Reduce unnecessary steps and administrative burdens.

4.4 Perceived lower pay

Behavioural barriers

> Once inaccurate beliefs are formed, they are hard to change and continue to shape decisions (myth busting).

Women lack awareness about the benefits of apprenticeships. In a study of 1,000 women, 58% say they would do an apprenticeship if they knew they could earn just as much, or more, than university careers.

Enablers and interventions

> Use a trusted messenger to increase people's familiarity with key facts in a simple and accessible format. Highlight benefits of behaviour change (incentives).

Promote the positive potential of VET study and careers. E.g. VET graduates earn the same, or more, than university graduates. VET graduates are more likely to be employed after graduation.

Conclusion

Training Services NSW is committed to addressing barriers women experience in pursuing a career in trades and optimising vocational outcomes.

This report has drawn on domestic and international literature to identify barriers to the recruitment of women in trades. Recommendations for behavioural interventions have been developed with the aim to increase women in trade training and employment.

Appendices: Methods and references

Methods

22
studies analysed

Thematic analysis of international research including two empirical studies on the recruitment of women and girls in apprenticeships and traineeships

Behavioural insights applied to identify barriers, enablers and possible solutions drawing on 40 additional studies.

Country

15 from Australia	1 from the UK
	1 from NZ
4 from the US	1 from Canada

Eleven Australian studies were from New South Wales (NSW), three from regional NSW.
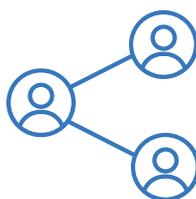
10 to 8,757
participants

Sample size
The sample sizes of the studies ranged from **ten to 8,757 participants** (latter by the NSW BIU 2017).

Qualitative studies had smaller samples (**10 to 68 people**).

Quantitative studies had the largest sample sizes (**n > 1000**).

Peer-review
Sixteen peer-reviewed studies analysed.

Methods

15 Fifteen studies used qualitative methods.

11 Eleven studies used quantitative methods and four were randomised control trials (RCTs).

7 Seven studies used a mixed methods (qualitative and quantitative).

Critical reviews of literature by Bridges and colleagues (2021) and Wang and colleagues (2021).

Case study of backfire effect:
In a UK-based case study, Archer and colleagues (2014) piloted a six-week school-based STEM careers intervention. This involved excursions to a science centre and STEM conference, visits from STEM Ambassadors and researchers, and attendance at a STEM roadshow. The intervention had no significant impact on girls' attitudes toward school science. Schoolgirls reported lower confidence in their ability to do well in STEM careers after the intervention. This was partly due to the lack of diversity in STEM career representation, including non-graduate pathways (Archer et al. 2014).

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