

Wood Machining Research Project Report

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Skills
Insight

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Executive Summary

The revision of the Certificate III in Cabinet Making and Timber Technology in 2022 revealed complexities, challenges and some confusion about the wood machinist occupation and how the needs of the industry align with the existing vocational qualifications.

This report provides insights based on research and consultations undertaken during 2023 and 2024, examining the landscape of wood machining education and training in Australia. It sheds light on the qualifications, units of competency, and industry practices relevant to the field. The research activity has explored existing qualifications and training pathways for wood machining professionals, evaluated their alignment with industry needs, and provided recommendations for enhancement.

To achieve this, a comprehensive review of relevant qualifications, units, and industry standards was conducted, supplemented by a survey distributed among stakeholders. Consultations were also carried out with representatives from educational institutions, industry associations, union representatives and woodworking enterprises across various states and territories in Australia. These methodologies provided valuable insights into the research objectives and facilitated a holistic understanding of the wood machining landscape.

The study reveals a complex situation marked by concerns about qualification adjustments, industry alignment, skills shortages, and broader training issues.

Key findings from this work include the presence of differing qualifications in wood machining reflecting occupational outcomes in two different sectors, varying levels of alignment between training programs and industry needs, and confusion surrounding the term "wood machinist" in furniture manufacturing and in sawmill operations. While well-structured training pathways exist, there are opportunities for improvement, particularly in standardising qualifications and enhancing industry relevance.

While Australia boasts a robust framework for wood machining education and training, there is room for optimisation to better meet the evolving needs of the industry.

While two issues are highlighted for ongoing consideration, there are two actions recommended for further consultation at this time:

- Skills Insight to work with relevant agencies and stakeholders to encourage delivery of FWP31121 Certificate III in Wood Machining in Queensland
- Further research activity based on the current approach to qualification reform to establish if the current specific-purpose qualifications could be merged while still meeting industry needs.

Overall, this report provides valuable insights for policymakers, educators, and industry stakeholders aiming to improve wood machining training programs to meet evolving industry demands.

Wood Machining Qualifications

There are two existing vocational qualifications in the Australian Vocational Education and Training system that relate to wood machining. One was developed in 2022, combining several furniture manufacturing-related qualifications into one, while the other addresses skills for wood machinists working in sawmills and timber processing plants.

MSF30322 Certificate III in Cabinet Making and Timber Technology (Wood Machining) is the qualification that describes the skills of a wood machinist within the furniture manufacturing industry. During 2021 and 2022 comprehensive consultations with the furniture manufacturing industry resulted in a merger of three qualifications:

- MSF30213 Certificate III in Furniture Making
- MSF30313 Certificate III in Timber and Composites Machining
- MSF31113 Certificate III in Cabinet Making.

This new combined qualification described several core skills relevant to a range of occupations in this field and established six separate specialisations: furniture, kitchens and bathrooms, marine cabinetry, coopering, drafting and wood machining. This qualification is designed to address the skills of furniture makers, cabinetmakers, wood machinists and others working with timber to plan, process and build furniture and furnishings, barrels, and different types of cabinetry. It was officially endorsed and released into the Australian Vocational Education and Training (VET) system in December 2022.

Complicating matters is the existence of another vocational qualification that addresses the skills of wood machinists working in sawmills and wood processing plants:

- FWP31121 Certificate III in Wood Machining.

This qualification sits within the *Forestry and Wood Processing Training Package (FWP)* and appears to address many similar skills to the furniture manufacture qualification, including hand and power tools, cutting, sawing, saw maintenance, costing, joinery, timber properties and identification, CNC operation and generic skills such as health and safety, communication and teamwork. This qualification, however, describes these skills in the context of working with timber and logs in a sawmill or timber processing plant. Wood machining in this context is high volume, high speed and does not require a range of skills in relation to furniture and cabinetry that apply in the MSF30322 Certificate III in Cabinet Making and Timber Technology (Wood Machining)

Initiating this Research Project

Concerns about changes to the previous wood machining qualification for the furniture industry were expressed when it was being reviewed. These were raised again when Jobs and Skills Councils were established and the qualification came within the responsibility of Skills Insight, as part of its scope as and JSC which includes the *Furnishing Training Package (MSF)*.

The Queensland Department of Youth Justice, Employment, Small Business and Training (DYJESBT) and the then Industry Advisory Body for Manufacturing in Queensland, Australian Industry Group (now a contract managed through Manufacturing Skills Queensland, MSQ) contacted Skills Insight in February 2023, expressing concerns about changes made to the vocational qualification for wood machinists. Although their objections were raised during the 2021-2022 review, they felt that the qualification was unsuitable for Queensland industry. DYJESBT did not endorse the new qualification at the State level.

The issues raised by DYJESBT were threefold: wood machinists were not consulted when the qualifications were being reviewed, wood machinists' skills were being diluted and removed from the qualification and the title of the new qualification was misleading as it sounded like an apprentice wood machinist was now training to be a cabinet maker.

See Appendix 1 for a description of the issues raised by the Queensland DYJESBT and the responses provided in the Case for Endorsement.

Wood Machining Skills and Knowledge

Wood machinists are integral to furniture manufacturing and other wood processing industries due to their role in crafting high-quality timber products. The Australian and New Zealand Standard Classification of Occupations (ANZSCO) coding system lists this occupation as part of the furniture industry but there are wood machinists working in sawmills processing timber for building and construction purposes, flooring, packaging and the pulp and paper industries. These activities are not directly related to the furniture industry.

Wood machining plays a pivotal role in various manufacturing industries, including sawmills, joineries, furniture manufacturing, and more. The detail and craftsmanship involved in wood machining contribute to the production of high-quality timber products.

One wood machinist working in the furniture industry described wood machining as “a trade of production, precision and natural beauty”, and went on to say, “wood machinists are employed not only in the cabinet making field but are actually the hub of all the timber trades including joinery, stair building, shop fitting, furniture making, engineered timber products, sawing and planing mills, musical instrument makers (luthiers) and historic restorations institutions.”

Wood machining requires knowledge of:

- growth and structure of timber
- rotary cutting principles
- saw blade and tooth design
- cutter grinding and tooling materials including tungsten carbide, high speed steel, polycrystalline diamond, stellite, and cutting angles
- production and structure of engineered timber products
- machine maintenance
- mass production principles
- bespoke production principles
- 9 Australian standards for safe usage and guarding of machines
- 5 Australian standards for engineered timber
- 6 Australian standards for timber
- 3 Australian standards for production standards and the Australian standard for technical drawing.

According to the ANZSCO, wood machinists work in the furniture making and related industries. They set up and operate woodworking machines and wood turning lathes to shape wood stock, finish furniture, and create picture frames. The occupation is classified at Skill Level 3, aligning with the Australian Qualifications Framework Level 3.

The ANZSCO occupation description further states that wood machinists perform tasks such as studying specifications, determining tooling requirements, setting up machines, and operating them to cut, plane, turn, shape, and sand workpieces. Some related specialisations within this occupation include automatic profile sander operator, copy lathe operator, edge bander operator, jigmaker (wood), panel saw operator, and woodworking machine setter.

Other related occupations in this category include furniture finisher, picture framer, wood turner, and wood machinists and wood trades workers not elsewhere classified, such as cane furniture maker, cooper, and wood model maker.

Sawmilling and furniture manufacturing

There are distinct categories within the wood machining field, primarily divided between those working in sawmills and those involved in furniture making. Sawmill wood machinists operate large-scale equipment to process timber that has been sawn from logs, often for applications in the construction industry. Furniture making wood machinists are engaged in crafting furniture pieces, utilising their expertise in timber, metal cutting tools, machinery operation, and various processes. Despite similarities in skillsets and knowledge between the two occupations, consultations with wood machinists and their employers highlighted significant differences in their practical applications.

Qualification Analysis

The two qualifications for wood machining share basic skills but vary in their practical uses. Just like the jobs they prepare for, these qualifications cover some similar topics and skills, while also highlighting different workplaces and situations.

MSF30322 Certificate III in Cabinet Making and Timber Technology is an existing qualification within the Furnishing Training Package (MSF). It was endorsed by the Department of Employment and Workplace Relations in December 2022. It describes trades-level skills in the manufacture and installation of furniture and cabinetry made from wood, wood composites and other materials. It covers a range of core skills, including tool use, measuring, drawing (including computer-aided design), interpreting work documentation, preparing cutting lists, communication, teamwork, and safe and environmentally sustainable work practices.

MSF30313 Certificate III in Timber and Composites Machining was superseded when MSF30322 Certificate III in Cabinet Making and Timber Technology was released. It previously covered the essential skills of wood machining for individuals in the furniture-making industry. This vocational qualification was designed to provide individuals with the necessary skills for timber and composites machining, focusing on the manufacture of furniture, cabinetry, windows and doors, and other related components.

FWP31121 Certificate III in Wood Machining is a current qualification within the Forestry and Wood Processing Training Package (FWP). It is a comprehensive qualification for people working in sawmills or timber processing workplaces, particularly wood machinists. It describes the skills to set up, operate, and maintain various high speed, high volume, sawmill machines, including automated planers/moulders and saws, for cutting, planing, and profiling timber to specified requirements.

See Appendix 2 for a full description of the skills and knowledge that these qualifications address.

Comparison of qualifications

MSF30313 Certificate III in Timber and Composites Machining and MSF30322 Certificate III in Cabinet Making and Timber Technology (Wood Machining)

Comparing the MSF30313 Certificate III in Timber and Composites Machining with its successor, the MSF30322 Certificate III in Cabinet Making and Timber Technology (Wood Machining), it is clear that essential wood machining skills were kept in the transition. The core skill areas, such as the use of hand and power tools, production drawings, cutting, job estimating, and health and safety protocols, are in both qualifications.

The newer qualification has undergone some restructuring, with some units moving from core to elective. The fundamental skills have been preserved and some units have been added. For example:

- there are more options for workplace health and safety, specifically for those working on construction sites
- timber joinery skills have been expanded with a new unit focusing on hand-making timber joints
- the estimate and costing skills, once core subjects, are now offered as elective units
- two elective units from the older qualification, MSFFM3018 Set up, operate and maintain mechanical wood-turning lathes and MSFFM2012 Set up, operate and maintain pressure and clamping machines, were removed because of low enrolment numbers and lack of industry support for keeping them.

While there have been some structural changes, some units added and some deleted, the differences between the old and new are minimal and the skills outcomes for wood machinists working in furniture and cabinet making are the same.

FWP31121 Certificate III in Wood Machining and MSF30322 Certificate III in Cabinet Making and Timber Technology (Wood Machining)

In comparing the two current qualifications that address wood machining skills, it is clear that there are many similarities in the skills and knowledge required to perform both types of work. It is in the application and context of the work that the difference shows up: MSF30322 Certificate III in Cabinet Making and Timber Technology focuses on furniture manufacturing, while FWP31121 Certificate III in Wood Machining emphasises sawmill operations and high speed, high volume wood processing.

Both qualifications share a strong foundation in woodworking principles, equipping learners with:

- proficiency in hand and power tools
- production drawing skills (both manual and computer-aided)
- timber identification
- machinery operation and maintenance
- health and safety practices
- environmental sustainability principles
- effective communication and teamwork
- adherence to workplace standards.

While they share similar core units, the differences are obvious:

- MSF30322 Certificate III in Cabinet Making and Timber Technology:
 - includes units like "Timber Joinery," "CNC Machining," and "Saw Blade and Tooth Design" which directly relate to furniture and cabinetry manufacturing.

- includes units that incorporate design elements and precision skills relevant to furniture manufacturing.
- FWP31121 Certificate III in Wood Machining:
 - includes units that are tailored to sawmill operations and timber production like "Apply knowledge of timber properties, sawmill operations and sawmilling equipment" and "Operate and maintain a thicknesser".
 - includes specific units such as "Operate timber finger jointing line" and "Machine timber or engineered wood products using CNC machining and processing centres" which describe processing and manufacturing wood products within a sawmill environment.

These two qualifications cater to distinct but complementary skillsets within the furniture making and timber processing industries. MSF30322 equips individuals for careers in furniture making and cabinetry, often in suburban locations while FWP31121 prepares graduates for specialised roles in sawmilling and processing of raw timber, usually in rural locations.

See *Appendix 3* for charts comparing the skills and knowledge in these qualifications.

Sawmills using furniture manufacturing training

Some sawmills are putting apprentices through the furniture-focused training, because the relevant qualification is not available in their state.

Through consultations with stakeholders in the furniture manufacturing and timber processing industries, and through an industry survey conducted in January 2024, Skills Insight learnt that apprentices in the Queensland sawmilling industry are undertaking the qualification designed for wood machinists working with furniture. This appears to be a cause of dissatisfaction and confusion about whether the MSF30322 Certificate III in Cabinet Making and Timber Technology (wood Machining) is appropriate for wood machinists working in a sawmilling environment

As of April 2024, there is only one registered training organisation (RTO) offering FWP31121 Certificate III in Wood Machining in Australia: Timber Training Creswick based in regional Victoria and delivering training across Australia.

When seeking training providers closer to home, the Queensland timber industry discovered that there are too few potential enrolments for an RTO to justify the expense of delivering the sawmill-focussed wood machining qualification.

Timber Training Creswick is hundreds of kilometres away from the sawmills in Queensland where apprentices work. With the border shutdowns during the Covid19 pandemic in 2020 and 2021, and the inefficiency of having to send apprentices to Creswick in Victoria, several Queensland sawmills now send apprentices to the closest training provider offering skills to wood machinists, Queensland TAFE, despite this course being designed for the furniture manufacturing industry.

Qualification enrolments

The enrolment data for wood machining in the furniture industry from 2018 to 2022 reflects only a minor change in demand for training. Enrolments in MSF30313 Certificate III in Timber and

Composites Machining ranged from 129 in 2018, dipped to 106 in 2020 and was back up to 133 in 2022.

FWP31121 Certificate III in Wood Machining, the sawmill-specific qualification for wood machinists, ranged from 36 individuals enrolling in 2018, to 56 in 2022, and remains low volume delivery for a critical skill required by the sawmilling industry and relied upon by the whole domestic building industry..

Statistics relating to enrolments in MSF30322 Certificate III in Cabinet Making and Timber Technology, or to any of the specialisations within this qualification, are not yet available as it was released in December 2022 and the transition date (the date at which training providers are required to have transitioned to delivering the new qualification) was January 2024. Most training providers offering this program did not commence delivering these qualifications until this research activity was almost complete.

See Appendix 4 for a breakdown of enrolment statistics for 2021 and 2022.

Recognition of the Wood Machining Trade

Wood machining is a recognised trade in most States and Territories of Australia but there is no differentiation between its applications in furniture manufacturing or sawmilling.

Each Australian state and territory maintains its own unique approach to defining and recognising trades, often regulated by specific departments or bodies. The recognition of a trade can significantly impact funding, training, and certification opportunities for individuals within that profession.

In most states of Australia, wood machining is recognised as a formal trade and the MSF30322 Certificate III in Cabinet Making and Timber Technology is funded as a formal apprenticeship. In Tasmania and the ACT, the trade is not recognised independently, though the Certificate III in Cabinet Making and Timber Technology is available and subsidised for apprentices.

See Appendix 5 for an overview of state and territory recognition of the wood machining trade.

Australian Apprenticeships Priority Lists

Over the past few years, the status of wood machining apprenticeships and relevant qualifications on national or state "priority lists" has played a crucial role in influencing funding allocations for apprentices in different jurisdictions. Including wood machining in these lists shows that it is recognised as a skill in demand, meaning it attracts increased support and financial incentives for apprentices pursuing qualifications in this field.

The impact of wood machining on priority lists varies across states. New South Wales, Queensland and Victoria have recognised the importance of wood machining skills by including them on their priority lists. This reflects the demand for qualified wood machinists in these regions and means apprentices doing these qualifications will be supported and their training funded.

Concerns have been raised about the low numbers of apprentices, skill shortages, and the prospect of seeking skilled wood machinists from overseas. One industry member spoke of wood machining being listed on the Australian Government Immigration and Citizenship Skilled Occupation List, explaining that because of a critical shortage of trained wood machinists, "we are now looking overseas to bring wood machinists to Australia via the trade visa system".

Some members of the industry said that the recent changes in the wood machinist qualification will reduce apprentice numbers even further because its title is misleading and confusing.

It is unclear whether the occupation described on these priority lists refers to furniture or sawmill wood machining, so it is difficult to draw the conclusion that the furniture making industry has identified a need for skilled furniture wood machinists.

Industry Consultations and Survey

An online survey and a series of meetings and site visits have gathered opinions, concerns, ideas and suggestions about the changed qualification for wood machinists.

The survey

A survey for the Wood Machining Research Project was crafted through collaboration with key stakeholders, including representatives from various sectors of the woodworking industry, relevant union and training providers. Initial discussions were held with industry experts and training providers to identify critical areas of inquiry and ensure the survey's relevance to the field. To ensure broad participation and capture diverse perspectives, the survey was distributed online via Question Pro, utilising a 'snowballing' approach. The initial distribution list comprised established contacts within the woodworking community, cultivated through prior consultations and partnerships with relevant industry associations. These contacts were encouraged to share the survey within their networks. The survey was also published on the Skills Insight website and communicated to newsletter subscribers. While the exact total number of invitations sent out is unknown, the survey aimed to capture a wide range of insights rather than achieve statistical representativeness. Given that this was an online survey, results may be skewed towards people with internet access and a clear perspective on the topic.

Industry consultations

In addition to the survey, Skills Insight spoke with a wide range of stakeholders from the woodworking industry, including manufacturers, union representatives, TAFE institutions, private training providers, state and territory industry skills bodies, industry associations, and individuals. Discussions, interviews, site visits, and meetings gave us valuable data, allowing for detailed discussions on the issues and trends facing the furniture-making and timber industries. Industry experts, educators, union representatives, manufacturers and peak bodies shared their knowledge and suggestions, providing diverse viewpoints and a well-rounded view of the woodworking landscape.

See Appendix 6 for a list of stakeholders consulted directly and those who hosted site visits of the research team.

Stakeholder perspectives and concerns

During January 2024, Skills Impact conducted an online survey to gather opinions and suggestions from a wide range of people. Approximately 120 people responded, including 56 from training organisations, 39 employers, 12 employees and one union. These respondents were from all over Australia, although mostly from New South Wales, Queensland and Victoria. People answering the survey were invited by email, newsletter, the Skills Insight website, from industry stakeholders sharing the survey link with their colleagues and connections, and mentions in industry and VET newsletters and websites such as VELG and Australian Furniture Association.

Employers

Nearly half of the responses from employers were from furniture-making and wood product manufacturing industry. There were less, but still a considerable number, of responses from employers in sawmills and timber processing facilities. The majority of respondents held management positions, providing insights from decision-makers and individuals directly involved in wood machining. Employers represented a diverse range of sectors, including wooden structural fitting, sawmilling, timber resawing, furniture manufacturing, and other wood product manufacturing areas. Notably, most respondents were from organisations with a median of five employees in wood machining, three in cabinet making, and three in combined roles. A substantial number of employees in these organisations hold a Certificate III or higher qualification, showing that this is a workforce with formal qualifications.

The majority of employers (66%) believe cabinet makers need a formal qualification. Yet only one-third (35%) felt likely to hire someone with the Certificate III in Cabinet Making and Timber Technology qualification. Interestingly, two-thirds (66%) felt this title accurately reflects cabinet maker skills. The survey also revealed that 58% of employers expressed concerns about the new qualification title and structure potentially obscuring the skills of wood machinists, with 56% fearing its impact on their business. One employer commented, *"It's harder for employers to understand what actual skills the potential employee might have..."*.

These results indicate that many employers are not aware that the Certificate III in Cabinet Making and Timber Technology is the current qualification for furniture manufacturing wood machinists, as well as cabinet makers. It also suggests a need for an increase in awareness of the changes made to the vocational qualifications for their industry.

Training providers

Over 81% of training provider participants in this survey were teaching staff. The majority believed that the title change would make it harder for employers to find the qualification for apprentices seeking wood machining roles. They also felt it would benefit apprentices seeking cabinet maker jobs but not necessarily wood machinist roles.

In contrast to the numbers of employers familiar with the changes to the Certificate III in Cabinet Making and Timber Technology (21%), nearly two-thirds (64%) of training providers were well-versed in the changes to its title and structure.

This highlights a potential unintended consequence stemming from the title change, which could inadvertently restrict opportunities for individuals seeking specialised wood machining skills. It reinforces the notion that training providers are more knowledgeable regarding qualification adjustments compared to employers of apprentices. It also raises concerns that many employers and potential employers may lack sufficient awareness of the qualification relevant to their industry. These concerns were further accentuated by teaching staff during site visits and consultations who noted that staff in the various Australian Apprenticeship Support Network (AASN) agencies also lacked awareness of the qualifications. This collective lack of awareness may lead to fewer enrolments in the wood machining specialisation.

Employees

Although only 12 respondents to this survey identified as employees, the union that represents both the furniture manufacturing and sawmill workforce, the Manufacturing Division of the CFMEU, met with the research team, responded to the survey, and shared the survey with members. One union representative expressed concern that wood machining and cabinet making were being combined into a single occupation.

The response from employees about this issue reflected the mix of responses from employers. Some saw the changes to the qualifications as minimising the skills of wood machinists, both in furniture manufacture and sawmilling, and others did not identify any particular issues with the changes.

The majority of respondents were not very familiar with the recent changes made to the qualifications (25% said they were very or extremely familiar with the new qualification) and yet 75% agreed they thought the qualification should be changed to deliver a more clearly defined outcome for wood machinists. Just over half (51%) felt that the title of Certificate III in Cabinet Making and Timber Technology (Wood Machining) was misleading, and several respondents expressed concern that the reduced number of units required to complete the new qualification would entail learners gaining fewer skills.

Due to the limited data from employees and their union, drawing meaningful conclusions on a wider level is challenging.

Qualification title

The decision to merge three qualifications into one and title it "Cabinetmaking and Timber Technology", even with the addition of the bracketed words "Wood Machining" to identify the specialisation, has faced both approval and opposition from wood machining industry representatives in both the furniture and timber processing industries. Both groups expressed confusion and dissatisfaction with the title change. As one employer commented: *"The trade of wood machining should stand alone... We need qualified wood machinists!"* Over half (53%) of training providers and 77% employers found it misleading, posing a potential barrier to understanding the qualification's content and its relevance to wood machining roles. For instance, an employer commented, *"The word Timber Technology doesn't give the understanding that they would know anything about wood machining..."* This highlights the critical need for a clearer pathway and increased awareness for this specialised skillset within the qualification title.

Despite acknowledging a skilled worker shortage, all respondents emphasised the importance of qualified cabinet makers and wood machinists. Over half of respondents from both groups struggled to understand the new qualification's skills and its alignment with job descriptions, partly attributing this to the title. One employer noted, *"It combines too many skills that are required to be demonstrated when students don't perform them..."* These concerns suggest the need for a clearer structure within the qualification to effectively address the specific skills required for wood machining roles.

A significant majority (over 50% from both groups) identified potential for the new title to directly impact their industries. Concerns arose that it does not accurately reflect wood machinist skills, potentially hindering the industry. As one employer stated, *"We need a strong focus on wood*

machining..." This highlights the potential negative impact on the industry if the qualification revisions are not addressed.

Employers highlighted various considerations, resource limitations, and funding issues when deciding to offer the wood machining specialisation. Despite these challenges, a noteworthy finding is that nearly 90% of training organisations who participated in the survey plan to offer the qualification in 2024, with 46% planning to offer the wood machining specialisation.

Furniture making and cabinet making industries

The interviews and survey data unveiled a diverse range of opinions from stakeholders in the furniture making and cabinet making industries regarding the alterations made to the Certificate III in Cabinet Making and Timber Technology.

Adaptability and concerns

A furniture-making instructor participating in the survey wrote: "We're prepared to deliver the new qualification as long as it equips students with the necessary skills..." This reflects a willingness to adapt to changes, while highlighting the importance of maintaining skill relevance. In contrast, an industry association representing joinery and window and door making expressed concerns: "The new qualification seems to de-emphasise traditional wood machining in favour of CNC operation. We still need skilled wood machinists!"

Terminology and confusion

The importance of clear terminology is emphasised. A professional working with furniture and cabinet making teachers at a TAFE institute noted in the survey: "The term 'Timber Technology' is confusing. It doesn't clearly indicate the wood machining skills covered...". Another survey respondent, a TAFE coordinator, highlighted the issue of combining specialisations: "Combining wood machining with cabinet making creates confusion. These are distinct skillsets...". This suggests a need for clearer distinctions and greater awareness of the qualification structure and title to avoid ambiguity for employers and job seekers.

Dilution of skills

The potential erosion of the distinct identity of the wood machining trade and its impact on apprentice opportunities was raised by several employers, employees and teachers working in the furniture making industry, especially those who were qualified wood machinists, themselves.

Reduction of enrolments

Stakeholders highlighted a significant gap in awareness among Australian Apprenticeship Support Network (AASN) agencies regarding wood machining qualifications. Concerns were expressed that apprentices are often steered towards cabinet making pathways due to the limited understanding of wood machining within the AASN. Consequently, this misinformation is expected to result in a decline in the number of apprentices pursuing wood machining specialisation.

Timber and sawmilling industries

The analysis of stakeholders' views in the timber industry regarding various wood machining qualifications reveals a complex situation. It involves worries about changes to qualifications, how well they match industry requirements, shortages in key skills, and broader aspects related to

training programs. The distinction between wood machining roles in different contexts, and the suitability of the cabinet making qualification for those in furniture making versus sawmill operations, adds to the complexity of the matter.

Concerns and considerations

Qualification title change

Stakeholders are divided over the name change in the MSF30322 Certificate III in Cabinet Making and Timber Technology. A survey respondent noted: "The trade of wood machining should stand alone... We need qualified wood machinists!" While some fear it misrepresents wood machining skills, others acknowledge that the skillset remains covered within the specialisation.

Lack of consultation

Concerns exist about the decision-making process, with stakeholders questioning the level of representation and consultation with wood machinists in relevant advisory panels. One survey participant from a TAFE institute commented: "There wasn't enough consultation with industry about the changes..."

Impact on apprenticeships

Survey responses highlighted the need for Australian Apprenticeship Support Network (AASN) agencies to understand clear distinctions between qualifications to avoid confusion and ensure proper apprenticeship placement.

Dilution of skills

The labour union representing workers in both manufacturing industries, the Manufacturing Division of the CFMEU, expressed concerns about potentially diluting the wood machining qualification. However, others suggest that evolving industry demands and technology, rather than reduced qualification depth, contribute more to skill erosion. An employer responding to the survey stated: "The skills required have changed so much with new machinery. It's not the qualifications that are the problem..."

Impact on employers and training providers

Disruption to training pathways

Employers and industry representatives are frustrated about potential disruptions to existing apprentices' training due to the new qualifications. They emphasise the need for gap training to facilitate the transition. A representative from a sawmill, quoted in the survey, said: "We have apprentices halfway through their training. How will this change affect them?"

Industry-specific training

Stakeholders value relevant training that aligns with industry needs. Some prioritise specific qualifications offered outside their region due to their perceived better alignment with their work requirements. An employer commented in the survey: "The new qualification seems more focused on cabinet making than sawmilling. We need sawmilling specialists!"

Adequacy and relevance of new qualifications

Varying opinions

Stakeholders hold diverse views on the adequacy and relevance of the new qualifications. While some view them positively, others express concerns about potential skills shortages and the perceived gap between the qualifications and practical industry needs. A survey respondent noted: "It combines too many skills that are required to be demonstrated when students don't perform them..."

Recommended Actions and Issues for Further Consideration

Despite the varying responses and opinions from a range of stakeholders in two key industries, there are several clear ways that the issues raised and explored in this research activity could be addressed or progressed. These include facilitating access to local training opportunities for sawmill wood machinists, reviewing, modifying and redeveloping qualifications and promoting awareness of the existing Certificate III in Cabinet Making and Timber Technology (Wood Machining).

Recommended actions

1. Broadening access to forestry and wood processing qualifications

Skills Insight could undertake an implementation, promotion and monitoring activity to investigate the potential for a Registered Training Organisation (RTO) to deliver FWP31121 Certificate III in Wood Machining in Queensland. This activity would involve exploring training partnerships between stakeholders like Timber Queensland and Regional Forestry Hubs and RTOs in strategic locations, increasing opportunities and access to the qualification for the forestry and timber processing industry participants. This action is recommended.

2. Unified "wood machining" qualification proposal

Skills Insight could undertake a research activity addressing recent qualification reform requirements, undertaking a workforce function analysis and exploring the similarities and differences of the wood machining components of both the furniture industry qualification (MSF30322) and the wood processing qualification (FWP31121) to investigate the potential and support for a unified "purpose 2" level qualification. If sufficient common ground was agreed and the skills and knowledge required by both types of wood machinists could be combined, without the need for distinctly different contexts to the delivery and assessment of the formal qualification, this could create one unified qualification with two distinct streams for furnishing and timber processing. This would streamline and simplify the formal qualification structure for both industries, potentially offering an opportunity for increased involvement by RTOs in areas of otherwise low participation. This action is recommended.

Issues for further consideration

3. Exploring changes to Certificate III in Cabinet Making and Timber Technology

While it is not best practice to implement changes soon after the endorsement of a qualification (in this case, December 2022), an option for further exploration involves adjusting the existing Certificate III in Cabinet Making and Timber Technology.

For this to be permitted under the current guidelines for Training Package development, substantial evidence must be presented to the Department of Employment and Workplace Relations (DEWR), of the wood machining industries' desire to make changes. It is crucial to recognise that this option comes with complexities and requires thorough justification, prompting stakeholders to carefully assess the implications. The gathering of sufficient evidence would need to focus on showcasing the existing title's detrimental impact on industry skill development and consider the potential challenges for training providers who would need to modify materials, resources, marketing, and delivery materials.

If DEWR were to accept that there is sufficient evidence for a change to be warranted, the Jobs and Skills Council (Skills Insight) may be approved to undertake the necessary work. This would involve extensive consultation with the industry, followed by the formal submission to the Assurance Body and the Skills Ministers' Endorsement.

An additional factor to consider is that all states and territories other than Queensland have already accepted the qualification change, as indicated earlier, and have incorporated the modified qualification into their apprenticeships and priority lists.

While the option of making further changes to Certificate III in Cabinet Making and Timber Technology was explored during the consultation and survey phases of this research project, researchers failed to uncover sufficient evidence of the negative effects of the qualification's title. This suggests that it is very unlikely that further exploration would yield a different outcome, although the ramifications of the changes will become more evident as future enrolment statistics become available and are analysed.

4. Promoting awareness to apprenticeship support network agencies

Skills Insight could undertake a promotional activity to enhance awareness of potential occupational and training pathways for aspiring learners and new employees in the furniture-making industry. This would involve active promotion of the wood machining qualification in collaboration with the National Careers Institute and the Australian Apprenticeship Support Network (AASN) agencies to ensure they, and other stakeholders such as careers advisors, are aware of the existence and relevance of the wood machining specialisation within the Certificate III in Cabinet Making and Timber Technology and its difference to the cabinet making occupation.

Appendices

Appendix 1 – Concerns and responses

The following chart describes the concerns raised by Queensland’s Department of Youth Justice, Employment, Small Business and Training during the development of the Certificate III in Cabinet Making and Wood Machining, and the responses from Innovation and Business Skills Australia (IBSA) as described in the Case for Endorsement submitted to the Australian Industry and Skills Committee in 2022.

Concern from Qld stakeholders	Response from IBSA Skills Service Organisation
<p>There was a lack of wood machinists involved in the Technical Advisory Committee working on the review of these qualifications.</p>	<p>Targeted consultations were undertaken with furniture manufacturing wood machining stakeholders to gather their views and that these views were presented to both the TAC and the Industry Reference Committee overseeing this review.</p>
<p>Wood machinist skills have been diluted by being merged with cabinet making skills in the new qualification</p>	<p>Industry feedback had previously led to the reduction of wood machining-specific units of competency included in the qualification. When consulted, industry representatives emphasised the importance of multi-tasking and the need to have a range of skills to work in the furniture-making industry. They identified a risk of future wood machinists lacking a broad range of skills, limiting their employment opportunities. This is expected to be alleviated by increasing the available elective options in the revised qualification.</p>
<p>The title of the Certificate III in Cabinet Making and Timber Technology is misleading and implies that wood machinists are cabinet makers.</p>	<p>The specialisation of this qualification incorporates the occupation title ‘Wood Machining’ and the qualification description includes a list of agreed, relevant skills, even referring to specialised skills in wood machining.</p>

Appendix 2 – Description of qualifications

MSF30322 Certificate III in Cabinet Making and Timber Technology

MSF30322 Certificate III in Cabinet Making and Timber Technology is an existing qualification within the *Furnishing Training Package (MSF)*. It describes trade-level skills in the manufacture and/or installation of timber products, particularly furniture and cabinetry made from wood, wood composites and other materials. The qualification covers a range of core skills, including tool use, measuring, drawing (including computer-aided design), interpreting work documentation, preparing cutting lists, communication, teamwork, and safe and environmentally sustainable work practices.

Core units:

- use furniture making hand and power tools
- produce manual and computer-aided production drawings
- prepare cutting lists from design and production documentation
- make measurements and calculations
- read and interpret work documents
- participate in environmentally sustainable work practices
- communicate in the workplace
- work in a team.

Elective units:

Electives are divided into specific groups, each catering to different specialisations within the qualification.

Specialisations and elective groupings:

- Furniture: Examples of electives available for this specialisation include preparing surfaces for finishing, joining solid timber, constructing furniture using leg and rail method, and selecting timbers for furniture production.
- Kitchens and bathrooms: Electives available for this specialisation include cover tasks such as setting up, operating, and maintaining automated edge banding machines, fabricating and installing cabinetry, and planning kitchen and bathroom projects.
- Marine cabinetry: Electives available for this specialisation include cover skills like selecting and applying adhesives in automotive and marine service, constructing and installing bulkheads, fixing wet area sheets, and installing lay flat vinyl floor coverings.

- Wood machining: Electives available for this specialisation involve setting up, operating, and maintaining various machines for sawing, drilling, joining, planing, and finishing timber, as well as CNC machining.
- Coopering: This specialisation focuses on using coopering sector hand and power tools, producing barrels using non-fired and fired processes, and maintaining and repairing barrels.
- Drafting: This specialisation includes producing computer-aided drawings, collecting and interpreting information to support production processes, and producing manual and computer-aided drawings from design concepts.

The qualification emphasises industry-relevant skills, with flexibility for individuals to choose electives that align with their specific career goals. Kitchen and bathroom installers may require additional licensing, and induction training is necessary for those working on construction sites.

Overall, the Certificate III in Cabinet Making and Timber Technology aims to produce well-rounded professionals capable of performing various tasks within the woodworking industry, with specialised skills in different areas. The qualification is designed to meet industry standards and address the diverse needs of occupations within the field.

MSF30313 Certificate III in Timber and Composites Machining

The qualification encompassed various competencies, including:

- utilising hand and power tools
- generating manual and computer-aided production drawings
- proficiency in cutting techniques
- estimating and costing for projects
- performing accurate measurements and calculations
- reading and interpreting work documents
- engaging in environmentally sustainable work practices
- effective communication in the workplace
- collaboration within a team
- adherence to health and safety protocols in the workplace
- identification of timber and understanding timber properties
- operation and maintenance of machinery
- timber joinery skills
- computer numerical control (CNC) machining expertise
- CNC sizing proficiency
- sawing techniques.

This qualification encompasses a diverse set of competencies, covering both static and computer numerically controlled (CNC) machine operations, along with the ability to prepare and work from drawings and cutting lists.

Core units:

- use furniture making sector hand and power tools
- set up and operate basic static machines
- produce manual and computer-aided production drawings
- prepare cutting lists from plans and job specifications
- make measurements and calculations
- read and interpret work documents
- estimate and cost job
- participate in environmentally sustainable work practices
- work safely
- communicate in the workplace
- work in a team.

Elective units:

Electives are grouped into specific streams, allowing learners to specialise in one of the following areas or create a broad combination of competencies:

- flat panel machining
- solid timber machining
- machining technician.

Specialisations and elective groupings:

- Flat panel machining (Group A): Involves tasks such as preparing surfaces for finishing, assembling furnishing components, applying sheet laminates, and operating various machines like sawing, drilling, and edge banding machines.
- Solid timber machining (Group B): Specialises in joining solid timber, selecting timbers for furniture production, and operating and maintaining various woodworking machines for furniture designs.
- Machining technician (Group C): Concentrates on advanced skills such as setting up, operating, and maintaining computer numerically controlled (CNC) sizing machines, CNC machining and processing centres, and producing and maintaining cutting tools. It also includes competencies related to operational maintenance, production scheduling, and applying preventative maintenance techniques.

FWP31121 Certificate III in Wood Machining

FWP31121 Certificate III in Wood Machining is a comprehensive qualification tailored for individuals working in sawmills or timber processing environments, particularly wood machinists. This qualification addresses the necessary skills to set up, operate, and maintain various machines, including automated planers/moulders and saws, for cutting, planing, and profiling timber to specified requirements. The qualification covers essential tasks such as interpreting work orders, selecting and configuring knives and cutters, aligning equipment, and maintaining machinery and tools. With a focus on safety, health, and environmental requirements, the program also addresses the production of patterns and templates, ensuring a well-rounded skill set for professionals in the wood machining industry.

Core units:

- work effectively with others
- work effectively in the forest and wood products industry
- communicate and interact effectively in the forest and wood products industry
- apply safety, health and environmental requirements in forest and wood products operations
- use hand-held tools
- apply knowledge of timber properties, sawmill operations, and sawmilling equipment
- apply quality and product care procedures in forest and wood products operations
- produce patterns and templates.

Elective units:

Electives are grouped into specific categories to provide individuals with a range of skills relevant to the sawmilling and processing sector. The elective units are to be chosen as follows:

- a minimum of 8 units from Group A (Operating timber processing machines)
- a minimum of 4 units from Group B (Grinding and maintaining cutting tools)
- remaining units can be selected from Group A, B, C, and/or D, and may include up to 2 units from any currently endorsed Training Package or accredited course.

Specialisations and elective groupings:

- Group A – Operating timber processing machines: Involves tasks related to operating various timber processing machines.
- Group B – Grinding and maintaining cutting tools: Focuses on skills related to grinding and maintaining cutting tools used in wood machining.
- Group C – Grading and testing timber: Covers skills in grading and testing timber products.

- Group D – General electives: Offers a variety of skills including tailing out timber products, applying principles of timber and process optimisation, taking off material quantities, creating drawings using computer-aided design software, contributing to energy efficiency, conducting equipment maintenance, and applying problem-solving tools and statistical methods to operational processes.

This qualification does not have specific entry requirements, making it accessible to individuals interested in pursuing a career in wood machining. Additionally, there are no licensing, legislative, or certification requirements at the time of publication. The qualification aims to ensure individuals gain industry-relevant skills, contributing to a valid vocational outcome in the forest and wood products industry.

This qualification is designed for individuals working in or seeking a career in wood machining, specifically those in sawmills or timber processing roles. Wood machinists, through this qualification, gain proficiency in operating and maintaining a range of processing machines, contributing to the efficient production of timber products. The elective groups cater to various aspects of wood machining, including operating machines, grinding and maintaining cutting tools, grading and testing timber. As a result, the qualification is relevant for individuals pursuing roles such as wood machinists, sawmill operators, and timber processing technicians. The skills acquired through this qualification enable graduates to work effectively and safely in the forest and wood products industry, aligning with industry standards and contributing to the production of high-quality timber products.

Appendix 3 – Comparison charts

Certificate III in Cabinet Making and Timber Technology and MSF 30313 Certificate III in Timber and Composites Machining

<p>MSF30322 Cert III in Cabinet Making and Timber Technology</p> <p>TOTAL UNITS - 25 8 core and 17 electives</p>	<p>Skill</p>	<p>MSF30313 Cert III in Timber and Composites Machining</p> <p>TOTAL UNITS - 27 11 core and 16 electives</p>
<p>MSFFM2013 Use furniture making hand and power tools</p> <p><i>Relevant to performing common furniture making tasks such as cutting, joining, planning and sanding wood and other materials. It includes tool safety and basic tool sharpening.</i></p>	<p>Use hand and power tools</p>	<p>MSFFM2001 Use furniture making sector hand and power tools</p> <p><i>Relevant to using hand and power tools in applications relating to furniture making.</i></p> <p><i>This unit has been superseded and is equivalent to MSFFM2013 Use furniture making hand and power tools</i></p>
<p>MSFFM3030 Produce manual and computer-aided production drawings</p> <p><i>Relevant to making manual and computer-aided drawings to support manufacture and assembly in cabinet and furniture making, wood machining and other industries.</i></p>	<p>Produce manual and computer-aided production drawings</p>	<p>MSFFM3009 Produce manual and computer-aided production drawings</p> <p><i>Relevant to making manual and computer-aided drawings to support manufacture and assembly in cabinet and furniture making, wood machining and other industries.</i></p> <p><i>Now superseded and equivalent to MSFFM3030</i></p>
<p>MSFFM3031 Prepare cutting lists from design and production documentation</p> <p><i>Relevant to interpreting various types of design and production documentation to prepare cutting lists for processing operations in industries such as cabinet and furniture making and wood machining.</i></p>	<p>Cutting</p>	<p>MSFFM3010 Prepare cutting list from plans and job specifications</p> <p><i>Relevant to reading plans and job specifications to prepare cutting lists and providing data for subsequent processing operations.</i></p> <p><i>Superseded by and equivalent to MSFFM3031</i></p>
<p>MSFGN3006 Estimate and cost job</p>	<p>Job estimating and costing</p>	<p>MSFGN3002 Estimate and cost job</p>

MSF30322 Cert III in Cabinet Making and Timber Technology		MSF30313 Cert III in Timber and Composites Machining
<p><i>Relevant to costing jobs for customers on-site and off-site using discretion, judgement and specialised industry knowledge in line with established costing procedures. Elective unit</i></p>		<p><i>Relevant to obtaining job information, estimating the net cost of providing products and services, and calculating the final cost to the customer. It includes developing customer quotations. Core unit. This unit has been superseded by and is equivalent to MSFGN3006</i></p>
<p>MSFGN2001 Make measurements and calculations</p> <p><i>Relevant to individuals identifying the measuring equipment required in work tasks, and making and recording accurate measurements and calculations</i></p>	<p>Make measurements and calculations</p>	<p>MSFGN2001 Make measurements and calculations</p> <p><i>Relevant to individuals identifying the measuring equipment required in work tasks, and making and recording accurate measurements and calculations</i></p>
<p>MSFGN3005 Read and interpret work documents</p> <p><i>Relevant to those individuals who identify types of work document, understand their purpose, interpret them, and plan work based on the information they contain.</i></p>	<p>Read and interpret work documents</p>	<p>MSFGN3001 Read and interpret work documents</p> <p><i>Relevant to identifying the type and purpose of work documentation, reading and interpreting the document, and planning work in response. It also includes the handling and management of documentation.</i></p> <p><i>Superseded by and equivalent to MSFGN3005</i></p>
<p>MSMENV272 Participate in environmentally sustainable work practices</p> <p><i>Relevant to operators and team members who are required to follow procedures to work in an environmentally sustainable manner.</i></p>	<p>Sustainable work practices</p>	<p>MSMENV272 Participate in environmentally sustainable work practices</p> <p><i>Relevant to operators and team members who are required to follow procedures to work in an environmentally sustainable manner.</i></p>
<p>MSMSUP102 Communicate in the workplace</p> <p><i>Relevant to those who are required to receive, relay and record written and oral messages and to provide relevant information in response to requests within timelines.</i></p>	<p>Workplace communication</p>	<p>MSMSUP102 Communicate in the workplace</p> <p><i>Relevant to those who are required to receive, relay and record written and oral messages and to provide relevant information in response to requests within timelines.</i></p>

MSF30322 Cert III in Cabinet Making and Timber Technology		MSF30313 Cert III in Timber and Composites Machining
<p>MSMSUP106 Work in a team</p> <p><i>Relevant to those who are required to organise own activities within a team to fit with work schedules and to meet operational guidelines.</i></p>	<p>Teamwork</p>	<p>MSMSUP106 Work in a team</p> <p><i>Relevant to those who are required to organise own activities within a team to fit with work schedules and to meet operational guidelines.</i></p>
<p>MSMWHS200 Work safely</p> <p>CPCWHS1001 Prepare to work safely in the construction industry</p> <p>CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry</p> <p><i>Relevant to workers who apply workplace policies and procedures to maintain a safe work environment for self and others. It includes identifying work health and safety (WHS) hazards, assessing risk and following safety procedures in the workplace.</i></p> <p><i>The units referring to the construction industry are also relevant to those individuals who may work on- or off-site construction workplaces.</i></p>	<p>Health and Safety in the workplace</p>	<p>MSMWHS200 Work safely</p> <p><i>Relevant to workers who apply workplace policies and procedures to maintain a safe work environment for self and others. It includes identifying work health and safety (WHS) hazards, assessing risk and following safety procedures in the workplace.</i></p>
<p>MSFFM3029 Select timbers for furniture production</p> <p><i>Relevant to workers who determine timber requirements and evaluate the suitability of different timbers against those requirements.</i></p>	<p>Timber identification and timber properties</p>	<p>MSFFM3008 Select timbers for furniture production</p> <p><i>Relevant to selecting suitable timbers for use in production by applying knowledge of timber technology.</i></p> <p><i>Superseded by and equivalent to MSFFM3029</i></p>
<p>MSFFM2018 Operate basic static machines safely</p> <p>MSFFM3037 Set up, operate and maintain routing and shaping machines</p>	<p>Machinery operation and maintenance</p>	<p>MSFFM2010 Set up and operate basic static machines</p> <p><i>Relevant to operating and maintaining basic static machines used for sawing, planing, sanding and drilling in the production of furniture.</i></p>

MSF30322 Cert III in Cabinet Making and Timber Technology		MSF30313 Cert III in Timber and Composites Machining
<p style="text-align: center;">MSFFM3035 Set up, operate and maintain planing and finishing machines</p> <p><i>The above units are relevant to those individuals who specialise in wood machining in a manufacturing and/or product installation environment. Products include furniture and cabinetry, made from timber and other materials.</i></p>		<p><i>Was superseded by MSFFM2018 - Operate basic static machines safely</i></p> <p>MSFFM3015 Set up, operate and maintain planing and finishing machines</p> <p><i>Relevant to those individuals who set up, operate and maintain planing and finishing machines in the production of furniture.</i></p> <p><i>Was superseded and is equivalent to MSFFM3035</i></p>
<p>MSFFM2016 - Join solid timber MSFFM3034-Set up, operate and maintain joining machines</p> <p style="text-align: center;">MSFFM3034 Set up, operate and maintain joining machines</p> <p><i>Relevant to workers who are required to make timber joints using hand and portable power tools in industries such as furniture and cabinet making.</i></p>	<p>Timber joinery</p>	<p>MSFFM2005 Join solid timber</p> <p>MSFFM3014 Set up, operate and maintain joining machines</p> <p><i>Relevant to joining solid timber required for the manufacture of solid timber flat surfaces.</i></p> <p><i>Relevant to setting up, operating and maintaining joining machines using their full potential and capacities in the production of furniture.</i></p> <p><i>Superseded by and equivalent to MSFFM3034</i></p>
<p style="text-align: center;">MSFFM3045 Set up, operate and maintain computer numerically controlled (CNC) machining and processing centres</p> <p><i>Relevant to workers who are required to set up, operate and maintain CNC machining and processing centres to manufacture products.</i></p>	<p>Computer Numerical Control (CNC) machining</p>	<p>MSFFM3022 Set up, operate and maintain computer numerically controlled (CNC) machining and processing centres</p> <p><i>Relevant to setting up, operating and maintaining CNC machining and processing centres to produce furniture or components.</i></p> <p><i>Superseded by and equivalent to MSFFM3045</i></p>
<p>MSFFM3044</p>	<p>CNC Sizing</p>	<p>MSFFM3044</p>

MSF30322 Cert III in Cabinet Making and Timber Technology		MSF30313 Cert III in Timber and Composites Machining
<p>Set up, operate and maintain computer numerically controlled (CNC) sizing machines</p> <p><i>Relevant to workers who are required to set up, operate and maintain CNC sizing machines for the manufacture of products.</i></p>		<p>Set up, operate and maintain computer numerically controlled (CNC) sizing machines</p> <p><i>Relevant to workers who are required to set up, operate and maintain CNC sizing machines for the manufacture of products.</i></p>
<p>MSFFM3032 Set up, operate and maintain sawing machines</p> <p><i>Relevant to workers who set up, operate and maintain sawing machines using their full technical potential and capacities to complete tasks such as cutting freehand curves and simple and compound angles and undertaking deep, freehand and off-fence ripping.</i></p>	<p>Sawing</p>	<p>MSFFM3012 Set up, operate and maintain sawing machines</p> <p><i>Relevant to setting up, operating and maintaining sawing machines using their full technical potential and capacities.</i></p> <p><i>Superseded by and equivalent to MSFFM3032</i></p>

Comparison of MSF30322 Certificate III in Cabinet Making and Timber Technology and FWP31121 Certificate III in Wood Machining

<p>MSF30322 Certificate III in Cabinet Making and Timber Technology</p> <p>TOTAL UNITS - 25 8 core and 17 electives</p>	<p>Skill</p>	<p>FWP31121 Certificate III in Wood Machining</p> <p>TOTAL UNITS - 27 8 core units and 19 electives</p>
<p>MSFFM2013 Use furniture making hand and power tools</p> <p><i>Relevant to performing common furniture making tasks such as cutting, joining, planning and sanding wood and other materials. It includes tool safety and basic tool sharpening.</i></p>	<p>Use hand and power tools</p>	<p>FWPCOT2257 Use hand-held tools</p> <p><i>Relevant to production workers, manufacturing assistants, timber manufacturing workers and sawmill workers who use a variety of manual and powered hand-held tools for various tasks and complete basic non-specialist maintenance.</i></p>
<p>MSFFM3030 Produce manual and computer-aided production drawings</p> <p><i>Relevant to making manual and computer-aided drawings to support manufacture and assembly in cabinet and furniture making, wood machining and other industries.</i></p>	<p>Produce manual and computer-aided production drawings</p>	<p>FWPCOT3307 Create drawings using computer aided design software</p> <p><i>Relevant to timber truss or frame fabricators and engineered timber product technicians who produce various types of drawings using computer aided design software. It includes producing plans, diagrams, component details and linked materials lists.</i></p>
<p>MSFFM3031 Prepare cutting lists from design and production documentation</p> <p><i>Relevant to interpreting various types of design and production documentation to prepare cutting lists for processing operations in industries such as cabinet and furniture making and wood machining.</i></p>	<p>Cutting</p>	<p>FWPCOT3271 Hand sharpen knives and blades for commercial and domestic cutting services</p> <p><i>Relevant to individuals who sharpen machine knives and blades in a saw technician workshop or sawmill facility. They hand sharpen knives and blades using files and grinders for a range of commercial and domestic services that use hand drill bits, hand chainsaw, scissors, wood chisels, garden tools and other cutting tools.</i></p>

MSF30322 Certificate III in Cabinet Making and Timber Technology		FWP31121 Certificate III in Wood Machining
<p>MSFDN4003 Produce patterns and templates</p> <p><i>Relevant to developing patterns and/or templates for production processes by hand, by using appropriate tools and equipment, and by computer-assisted production.</i></p>	<p>Produce patterns and templates</p>	<p>MSFDN4003 Produce patterns and templates</p> <p><i>Relevant to developing patterns and/or templates for production processes by hand, by using appropriate tools and equipment, and by computer-assisted production.</i></p>
<p>MSFGN2001 Make measurements and calculations</p> <p><i>Relevant to individuals identifying the measuring equipment required in work tasks, and making and recording accurate measurements and calculations</i></p>	<p>Make measurements and calculations</p>	<p>No specific unit of competency however, most units in this qualification require measuring and calculating</p>
<p>MSFGN3005 Read and interpret work documents</p> <p><i>Relevant to those individuals who identify types of work document, understand their purpose, interpret them, and plan work based on the information they contain.</i></p>	<p>Read and interpret work documents</p>	<p>FWPCOT3349 Assess timber against quality requirements and specifications</p> <p><i>Relevant to those individuals who evaluate and select timber in a timber processing or manufacturing facility</i></p>
<p>MSMENV272 Participate in environmentally sustainable work practices</p> <p><i>Relevant to operators and team members who are required to follow procedures to work in an environmentally sustainable manner</i></p>	<p>Participate in environmentally sustainable work practices</p>	<p>FWPCOR3205 Apply safety, health and environmental requirements in forest and wood products operations</p> <p><i>Relevant to those who work in a broad range of roles and operations in the forest and wood products industry and are required to apply safety and environmental care procedures in forest and wood products work settings.</i></p>
<p>MSMSUP102 Communicate in the workplace</p> <p><i>Relevant to those who are required to receive, relay and record written and oral messages and to provide relevant information in response to requests within timelines.</i></p>	<p>Communicate in the workplace</p>	<p>FWPCOR2208 Communicate and interact effectively in the forest and wood products industry</p> <p><i>Relevant to those who are required to receive, relay and record written and oral messages and to provide relevant</i></p>

<p>MSF30322 Certificate III in Cabinet Making and Timber Technology</p>		<p>FWP31121 Certificate III in Wood Machining</p>
		<p>information in response to requests within timelines.</p>
<p>MSMSUP106 Work in a team <i>Relevant to those who are required to organise own activities within a team to fit with work schedules and to meet operational guidelines.</i></p>	<p>Teamwork</p>	<p>BSBTWK201 Work effectively with others <i>Relevant to those who are required to work cooperatively with others and deal effectively with issues, problems and conflict.</i></p>
<p>MSMWHS200 Work safely</p> <p>CPCWHS1001 Prepare to work safely in the construction industry</p> <p>CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry</p> <p><i>Relevant to workers who apply workplace policies and procedures to maintain a safe work environment for self and others. It includes identifying work health and safety (WHS) hazards, assessing risk and following safety procedures in the workplace.</i></p> <p><i>The units referring to the construction industry are also relevant to those individuals who may work on- or off-site construction workplaces.</i></p>	<p>Health and Safety in the workplace</p>	<p>FWPCOR3205 Apply safety, health and environmental requirements in forest and wood products operations</p> <p><i>Relevant to those workers whose roles and operations in the forest and wood products industry are required to apply safety and environmental care procedures.</i></p>
<p>MSFFM3029 Select timbers for furniture production</p> <p><i>Relevant to workers who determine timber requirements and evaluate the suitability of different timbers against those requirements.</i></p>	<p>Timber identification and timber properties</p>	<p>FWPCOT3290 Apply knowledge of timber properties, sawmill operations and sawmilling equipment</p> <p><i>Relevant to the application of knowledge to identify the products, work processes and equipment in an operational sawmill. It includes identifying timber properties and defects and how these impact on sawing operations, timber volume and value recovery, process flow through a sawmill, quality requirements, the types, functions and capabilities of sawing</i></p>

<p align="center">MSF30322 Certificate III in Cabinet Making and Timber Technology</p>		<p align="center">FWP31121 Certificate III in Wood Machining</p>
		<p><i>machines and the regulatory arrangements that apply to sawmill operations.</i></p>
<p align="center">MSFFM2018 Operate basic static machines safely</p> <p align="center">MSFFM3037 Set up, operate and maintain routing and shaping machines</p> <p align="center">MSFFM3035 Set up, operate and maintain planing and finishing machines</p> <p><i>The above units are relevant to those individuals who specialise in wood machining in a manufacturing and/or product installation environment. Products include furniture and cabinetry, made from timber and other materials.</i></p>	<p align="center">Machinery operation and maintenance</p>	<p align="center">MSFFM3037 Set up, operate and maintain routing and shaping machines</p> <p align="center">FWPCOT2244 Operate and maintain a thicknesser</p> <p><i>Relevant to the application of knowledge to identify the products, work processes and equipment in an operational sawmill.</i></p> <p><i>It includes identifying timber properties and defects and how these impact on sawing operations, timber volume and value recovery, process flow through a sawmill, quality requirements, the types, functions and capabilities of sawing machines and the regulatory arrangements that apply to sawmill operations.</i></p>
<p align="center">MSFFM2016 - Join solid timber</p> <p align="center">MSFFM3034-Set up, operate and maintain joining machines</p> <p align="center">MSFFM3034 Set up, operate and maintain joining machines</p> <p><i>Relevant to workers who are required to make timber joints using hand and portable power tools in industries such as furniture and cabinet making.</i></p>	<p align="center">Timber joinery</p>	<p align="center">FWPCOT3336 Coordinate set up and operation of timber finger jointing line</p> <p align="center">FWPCOT3337 Operate timber finger jointing line</p> <p><i>Relevant to workers who coordinate and operate machinery in the production of finger jointed timber in a timber processing or manufacturing facility</i></p>
<p align="center">MSFFM3045 Set up, operate and maintain computer numerically controlled (CNC) machining and processing centres</p> <p><i>Relevant to workers who are required to set up, operate and maintain CNC</i></p>	<p align="center">CNC Machining</p>	<p align="center">FWPCOT3289 Load and prove operating program for CNC machine</p> <p align="center">FWPCOT3332 Machine timber or engineered wood products using CNC machining and processing centres</p>

<p>MSF30322 Certificate III in Cabinet Making and Timber Technology</p>		<p>FWP31121 Certificate III in Wood Machining</p>
<p><i>machining and processing centres to manufacture products.</i></p>		<p><i>These units are relevant to individuals who operate, load and prove programs for CNC machines in a timber processing and manufacturing facility.</i></p>
<p>MSFFM3044 Set up, operate and maintain computer numerically controlled (CNC) sizing machines</p> <p><i>Relevant to workers who are required to set up, operate and maintain CNC sizing machines for the manufacture of products.</i></p>	<p>CNC Sizing</p>	<p>MSFFM3044 Set up, operate and maintain computer numerically controlled (CNC) sizing machines</p> <p><i>Relevant to workers who are required to set up, operate and maintain CNC sizing machines for the manufacture of products.</i></p>
<p>MSFFM3032 Set up, operate and maintain sawing machines</p> <p><i>Relevant to workers who set up, operate and maintain sawing machines using their full technical potential and capacities to complete tasks such as cutting freehand curves and simple and compound angles and undertaking deep, freehand and off-fence ripping.</i></p>	<p>Sawing</p>	<p>MSFFM3012 Set up, operate and maintain sawing machines</p> <p>FWPCOT2269 Operate and maintain a table saw</p> <p><i>Relevant to workers who set up, operate and maintain sawing machines using their full technical potential and capacities to complete tasks such as cutting freehand curves and simple and compound angles and undertaking deep, freehand and off-fence ripping.</i></p> <p><i>They may also use a table saw to cut timber or engineered wood products. This activity includes assessing sawing conditions and adjusting feed rate and sawing equipment to maximise product quality.</i></p>
<p>There is no specific unit of competency relevant to quality control in this qualification</p>	<p>Quality control</p>	<p>FWPCOT3322 Apply quality and product care procedures in forest and wood products operations</p> <p><i>Relevant to those working in a broad range of roles and operations in the forest and wood products industry in which there is a focus on applying quality procedures and monitoring product care.</i></p>

Appendix 4 – Enrolment statistics

Qualification	2018	2019	2020	2021	2022
FWP30816 Certificate III in Woodmachining	36	41	37	21	0
				27	53
				0	3
FWP31121 Certificate III in Wood Machining				(48)	(56)
MSF30213 Certificate III in Furniture Making	122	133	130	154	151
MSF30313 Certificate III in Timber and Composites Machining	129	117	106	130	133
MSF31113 Certificate III in Cabinet Making	4988	4855	4773	5441	5893
Total	5275	5146	5009	5779	6233

Appendix 5 – Recognition of wood machining in Australian states and territories

Queensland

The Department of Youth Justice, Employment, Small Business and Training plays a crucial role in recognising trades in Queensland. Wood machining is a recognised trade in Queensland, and this is described as the manufacture and/or installation of products, including furniture and cabinetry. Skills of wood machinists according to the Queensland Training Information Service (QTIS) website include manufacture and/or installation of products, including furniture and cabinetry. The trade can be undertaken through full time, part time or school-based apprenticeship arrangements. In Queensland, MSF30322 Certificate III in Cabinet Making and Timber Technology is listed and funded as formal apprenticeships for 48 months. FWP31121 Certificate III in Wood Machining is also funded under the Queensland apprenticeship system, but for approximately 66% of the rate provided for cabinet making and timber technology.

New South Wales

The New South Wales Department of Education is a key player in determining recognised trades. Wood machining is considered a recognised trade, separate from cabinet making and a Certificate of Proficiency in Wood Machining is a valid documentation of being a qualified tradesperson. In NSW, MSF30322 Certificate III in Cabinet Making and Timber Technology and FWP31121 Certificate III in Wood Machining are both funded as formal apprenticeships for 48 months.

Victoria

The Victorian Registration and Qualifications Authority (VRQA) is responsible for overseeing the apprenticeship and trade education system in this state. The VRQA issues trade papers to apprentices who complete their qualifications, but wood machining is not listed as a separate trade and does not appear on the skills priority list. In Victoria, MSF30322 Certificate III in Cabinet Making and Timber Technology and FWP31121 Certificate III in Wood Machining are both funded as formal apprenticeships, the former for 48 months and the latter for 36.

Western Australia

Trades recognition in Western Australia is managed by the Department of Training and Workforce Development. Wood machining is recognised as a distinct trade in WA, and the MSF30322 Certificate III in Cabinet Making and Timber Technology is approved as a recognised apprenticeship. Achieving a recognised trade qualification in WA qualifies apprentices to receive a WA Trade Certificate.

South Australia

In South Australia, the Training and Skills Commission recognises wood machining as a separate trade and subsidises the forestry and wood processing qualification of wood machining for sawmills: FWP31121 Certificate III in Wood Machining. MSF30322 Certificate III in Cabinet Making and Timber Technology is also funded as an apprenticeship or traineeship and can be

delivered as a school-based apprenticeship. The SA government issues a trade certificate after an apprentice completes their training contract.

Tasmania

Skills Tasmania is the Tasmanian government agency that recognises and regulates trades. Wood machining is not a recognised separate trade in Tasmania, but the Certificate III in Cabinet Making and Timber Technology is listed on their skills priority lists as cabinet makers are in demand. The Tasmanian government subsidises apprenticeships in the timber industry wood machining occupation FWP31121 Certificate III in Wood Machining, as well as MSF30322 Certificate III in Cabinet Making and Timber Technology. This can also be delivered as a school-based apprenticeship.

Australian Capital Territory

In the ACT, Skills Canberra oversees the apprenticeship system and determines which occupations are recognised trades. Wood machining is not listed as a separate trade and does not appear on the Skills Priority List. The Certificate III in Cabinet Making and Timber Technology is listed on their skills priority lists as cabinet makers are in demand.

Northern Territory

In the Northern Territory, the Department of Industry, Tourism and Trade, Business and Workforce is involved in recognising trade qualifications. Wood machining is not listed as a priority skill or as a separate trade. MSF30322 Certificate III in Cabinet Making and Timber Technology is approved as an apprenticeship over 48 months and is also available as a school-based apprenticeship. There are currently no Territory-based training providers offering this qualification but at least one interstate RTO (TasTAFE) travels to the NT to train and assess apprentice cabinetmakers.

Appendix 6 – Stakeholders

Organisations and their representatives consulted and interviewed directly throughout this research project include, but is not limited to the following:

- Andrew Hanrahan – TAFE Queensland
- Brian Willmott – Onsite Assessing Pty Ltd, Queensland
- Bronwyn Foord – Window and Door Industry Council (WADIC) and Fewings Joinery, NSW
- Christina Bradley – TAFE Queensland, SkillsTech
- Clarissa Brandt – Timber Queensland
- Craig Bennett – TAFE NSW
- Dale Lait – Gumnut Timber Products, Queensland
- Dan La Franchi – Australian Furniture Association
- Darren Connelly – CFMEU Manufacturing Division (Vic)
- Dave Kirner - CFMEU Manufacturing Division (SA)
- Elizabeth Jansz – Holmesglen Institute, Victoria
- Georgiana Daian – ForestWorks
- Greg Warren – Manufacturing and Engineering Skills Advisory Board (MESAB)
- Ian Haines – DTM Timber, Maryborough Queensland
- Jimmy Chand – Baywood Timber, Maryborough, Queensland
- John Waters – Box Hill Institute, Victoria
- Jon O’Neill – TAFE NSW
- Kerri-Ann Bilson – Trendset Cabinets, Warrnambool Victoria
- Kerry Fullarton – South + Central Queensland Regional Forestry Hub Manager
- Louise Kinloch – National Timber and Hardware Assoc., NSW
- Malcolm Kernke – Hyne Timber, Maryborough, Queensland
- Mark Costoloe – Highland Pine Products/AKD Timber -Colac, Victoria
- Matt Ryan – TAFE NSW
- Natalie Reynolds – General Manager of the Australian Timber Importers Federation, NSW
- Nathan Jaryus – Hyne Timber, Maryborough, Queensland
- Neil Griffiths – TAFE NSW
- Oliver Hawkins – Box Hill Institute, Victoria

- Richard Snook – South West TAFE, Warrnambool, Victoria
- Rob Rule – Timber Training Creswick, Victoria
- Rob Watson – TAFE NSW Lidcombe
- Ross Giorgio – IJF Australia, Adelaide
- Sherie Rudolph - Baywood Timber, Maryborough, Queensland
- Simon Quinter – Highland Pine Products/AKD Timber, NSW
- Steve Abboushi - CFMEU Manufacturing Division (Vic)
- Steve Hope – South West TAFE, Victoria
- Tim Cleary – ForestWorks
- Tony Aloisi – Duraform Products, Adelaide
- Vicki Hinton – Bedford Group Inc. Adelaide