

## **POLYTECHNIC FORESTRY STUDENTS (1989-1998)** **Their Workforce Experience**

**Tina Cummins**  
**Janelle Byers**

PROPERTY OF  
**NATIONAL FORESTRY  
LIBRARY**



Liro Limited  
1998

Tina Cummins and Janelle Byers  
Human Factors Researchers

**POLYTECHNIC FORESTRY STUDENTS  
1989-1998  
THEIR WORKFORCE EXPERIENCE  
Project Report 69  
1998**

Liro Limited  
P. O. Box 2244  
Rotorua  
NEW ZEALAND

**Copyright © 1998 by Liro Limited**

The form and content of this Project Report are copyright. No material, information or inclusions appearing in this Project Report may be used for advertising or other sales promotion purposes without prior written permission.

This Project Report is confidential to members and may not be communicated to non-members except with written permission of the Chief Executive Officer of Liro Limited.

For information, please contact Liro Limited, P.O. Box 2244, Rotorua, New Zealand.

# TABLE OF CONTENTS

	<b>Page</b>
<b>List of Tables</b>	<b>4</b>
<b>List of Figures</b>	<b>4</b>
<b>Executive Summary</b>	<b>5</b>
<b>1 INTRODUCTION</b>	<b>6</b>
<b>2 ACKNOWLEDGMENTS</b>	<b>7</b>
<b>3 METHOD</b>	<b>8</b>
<b>4 RESULTS AND DISCUSSION</b>	<b>8</b>
Ethnicity	8
Time to find a job	9
First job	9
Job in 1998	10
Why did you leave the forest industry?	10
Time with current crew	10
Number of crews worked in	11
Motivators to change crews	12
FIRS Attainment	13
Accidents	14
Comments on the polytechnic training	15
Use of skills at work	15
Most valuable skill obtained at polytechnic	16
Additional skills desired	17
Would the students do the course again?	19
<b>4 CONCLUSIONS</b>	<b>20</b>
<b>5 REFERENCES</b>	<b>21</b>
<b>6 APPENDIX 1:</b> Polytechnic follow up survey	<b>23</b>
<b>APPENDIX 2:</b> Student comments on why they had chosen to leave the forest industry	<b>27</b>
<b>APPENDIX 3:</b> Student comments on the most valuable skill they had learned during their training	<b>28</b>

## LIST OF TABLES

Table		Page
1	Response rate by polytechnic	8
2	Time to obtain first job	9
3	Career movements of polytechnic students by number	10
4	Most valuable skills learned at polytechnic	16

## LIST OF FIGURES

Figure		Page
1	Location of polytechnics included in study	7
2	Where are you currently working?	9
3	Number of crews students had worked in	11
4	Which of the following factors made you choose to shift crews?	12
5	How well did the course prepare you for your job?	15
6	Use of skills in current job	17
7	Who provided later training?	18

## EXECUTIVE SUMMARY

Students who had successfully completed practical forestry courses run by Nelson Polytechnic, Eastern Institute of Technology (Hawke's Bay), Aoraki Polytechnic (Waimate), Manawatu Polytechnic (Palmerston North), Tairāwhiti Polytechnic (Gisborne), Telford Polytechnic (Balclutha) and Taratahi Polytechnic (Masterton), between 1989 and 1995, were recontacted in 1998. Information was collected on workforce movements, injuries, turnover and training. The students also commented on the usefulness of their course in providing useful skills for working in the forest industry.

- Just over half (55%) were still working in the forest industry in 1988 at the time of the follow-up study, in logging (35%) and silviculture (20%).
- Most (69%) of the polytechnic-trained students had obtained a job in the forest industry within a week of finishing their course.
- Most (89%) of the students obtained their first job in the forest industry. By the time of the follow-up study, the number of students working in the forest industry had dropped to 55%. The reduction in numbers was due to several factors including dissatisfaction with pay, boredom, and a downturn in the forestry market at the time of the study.
- Fewer Maori had attended polytechnic forestry training courses than European. However, this is likely to reflect the geographic location of the polytechnics included in the study.
- Polytechnic-trained silviculture workers and loggers tended to experience less turnover than that shown by similar workers in a previous study.
- Pay was the main reason for turnover, with 29% of students quoting a dissatisfaction with pay.
- Most students had continued their training after gaining employment in the industry, with 68% having obtained additional modules since completing the course.
- Most (90%) of the students thought their course had prepared them well for entry into the forest industry.
- An awareness of safe and correct work habits was the most valued skill provided by the training. The most sought after skill was for machine operation and maintenance.
- In hindsight, 73% said they would choose to undertake polytechnic training again.
- After completing the polytechnic training, any further training was mainly carried out by workmates.
- The students used the polytechnic-learned skills a lot in their work.

## INTRODUCTION

Forestry is one of New Zealand's major growth industries, and the third largest export earner behind dairy products and meat (New Zealand Year Book, 1996). Production is expected to increase by more than 60% over the period until 2003, with enough raw material coming on stream to create up to 30 000 new jobs (Rooney, 1998). Maintaining a competitive edge in the export market demands a skilled and educated workforce, capable of responding to changing demands and new technologies. Training has been established as a pre-requisite for a skilled forest workforce (Gaskin et. al., 1989).

The potentially hazardous nature of forest work, combined with the high accident rate of the forest workforce, means that training has a vital role to play in the forest industry. Training is also important because the success of the industry is largely dependent on the skills and knowledge of the workforce (Probine, Grayburn and Cooper, 1987). The importance of training the forest workforce has been recognised by the New Zealand Forest Owners' Association (NZFOA) who, in their 1993 Health and Safety Strategy, stated that one of their main objectives was to ensure that:

***"100% of people working in the forest are qualified or in training for the work they are undertaking by 1st January 1996".***

A 1994 NZFOA Workforce census found that 58% of silviculture workers and 76% of logging workers held at least one Forest Industry Record of Skills (FIRS) module (Byers, 1995). This study showed that the level of training was gradually improving throughout the workforce, but there was still some way to go to attain the desired 100%. In 1997, 80% of the 10 000 strong

forest workforce (harvesting and silviculture) had skills recognised through the national qualifications system (NZPI, 1997), making New Zealand's forest workforce well qualified by world standards.

In many cases, the responsibility for training of new entrants to the forest industry begins at a polytechnic level. Students are taught the importance of safe yet efficient work techniques, and often leave the course with one or more recognised FIRS modules. Graduates of polytechnic courses then have the opportunity to obtain additional modules once employed in the forest workforce.

Training has also been associated with reduced turnover, which is a major problem in the forest industry. A study by Bomford and Gaskin (1988) found that loggers with certification were more likely to remain in logging than those without certification. The study also found that the turnover rate for new recruits was highest in the first six months of starting work in the forest. Adams (1993) found during a seven year study that the turnover of non-certified loggers was consistently higher than the turnover of certified loggers.

Several studies have linked inexperience in forest work to an increased accident rate. Gibson (1994) found that younger workers had been involved in more accidents, suggesting that those workers with less experience have a greater propensity for accidents. Parker (1995) reported on the accident statistics for silvicultural work, and found that those workers with less experience were injured more frequently. Parker (1995) also noted that workers were at the highest risk of an injury in their first year of work in the forest. Parker and Kirk (1993) found that inexperienced loggers with less than one year felling experience, were exposed to

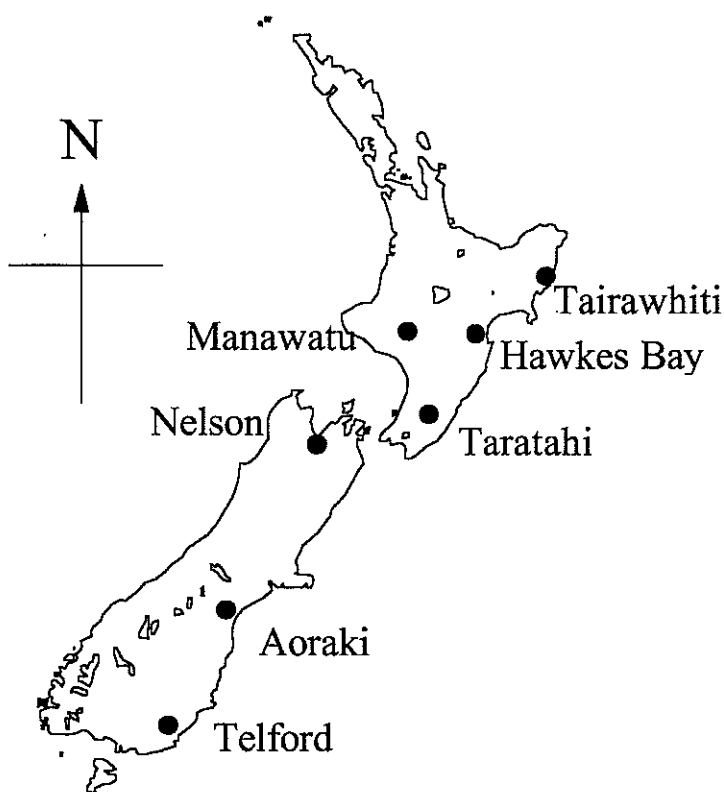
significantly more hazards than experienced loggers (more than five years felling).

This suggests that those workers who have some previous training and knowledge of the forest industry, before they begin working in the forest, may experience a reduced accident rate (particularly in their first year) and may also have a lower turnover rate.

### **Polytechnic Training**

Several New Zealand polytechnics offer full-time one year forestry/logging

courses. These courses are becoming an increasingly common mode of entry into the forest industry, enabling students to obtain (among others) the basic FIRS entry module of General Requirements (1.1). This report focuses on those students who completed practical forestry courses at seven different New Zealand polytechnics between 1989 and 1995. Each student would have had the opportunity to have worked a minimum of three years by the time the final survey was conducted. Figure 1 shows the location of the polytechnics included in the study.



*Figure 1 - Location of polytechnics included in study*

### **Acknowledgments**

*Liro Limited would like to thank staff and forestry tutors from the following polytechnics who assisted with the study: Nelson, Hawke's Bay (now Eastern Institute of Technology), Aoraki*

*(Waimate), Manawatu, Tairāwhiti (Gisborne), Telford (Balclutha), Tararua (Masterton).*

*The assistance of their former students is also gratefully acknowledged.*



METHOD

Polytechnic students enrolled in practical forestry courses were contacted while undergoing training. To maintain contact with these students, they were recontacted every three to six months - usually by telephone. Due to (often) multiple changes of address and job, it was not possible to maintain contact with all of the students. However, a final survey sent to the same group of students in 1998, achieved a response rate of 43% (Table 1). The survey was posted out with a post-paid envelope to encourage their response. The study initially included students from Nelson and Tairāwhiti Polytechnics, and was later extended to other polytechnics to achieve a wider sample size.

Polytechnic	1998 Survey Response Rate (%)
Nelson	36
Hawke's Bay	36
Aoraki	65
Manawatu	10
Tairāwhiti	32
Telford	52
Taratahi	33
All	43

Table 1 - Response rate by polytechnic

RESULTS

ETHNICITY

Only 11% said they were New Zealand Maori. This is low in comparison to the forest industry average of 45% Maori (Byers, 1995), but comparable to the 9% Maori identified in a previous study of polytechnic students (Byers, 1994). Recent research on university students also showed a low representation of Maori (1%) in degree-level programmes, though this trend may be changing. It may have been more common for Maori to go straight to work in the forest, rather than initially undertake polytechnic training.

This theory is supported by a previous study which showed most loggers had acquired their first job in the bush through a friend or relative (Gaskin et al., 1989). This is significant, as the New Zealand logging workforce was shown to comprise 41% Maori (Byers, 1995).

Most (84%) of those now logging said they were New Zealand European, the remainder (16%) were Maori. New Zealand European also dominated silviculture (92%), but for this group, the remaining 8% indicated “other” for ethnicity, choosing not to clarify this choice. Those students now working in silviculture had completed the forestry courses at Nelson, Hawke’s Bay, Aoraki and Telford Polytechnics, regions previously shown to have lower populations of Maori forest workers than European (Byers, 1995).



“ Manawatu Polytechnic student  
- planting training”



### TIME TO FIND A JOB

All of the students had obtained a job within six months of finishing the polytechnic course. Nearly half (42%) of the students had a job to go to as soon as they finished their training (Table 2). The

increased exposure to production crews while undergoing training gave students the opportunity to make contact with potential employers. Students commented later in the survey that this had been one of the benefits of the course.

Time to obtain first job	Number of Students	Percent
Had job by end of course	29	42
< 1 week after finishing	19	27
< 1 month	12	17
1 - 6 months	10	14
<b>TOTAL</b>	<b>70</b>	<b>100</b>

Table 2 - Time to obtain first job

### FIRST JOB

The success rate of the polytechnic courses in developing suitable workers for the forest industry is highlighted by the 89% of students whose first job after leaving the course was in the forest industry. Most (59%) of these students had

moved straight into a logging job, carrying out a range of tasks which usually included breaking out, logmaking and skidwork. Fewer (30%) had taken on a job in silviculture. The 8% who had found work outside the forest industry were working in agriculture, meat inspection, and pest control.

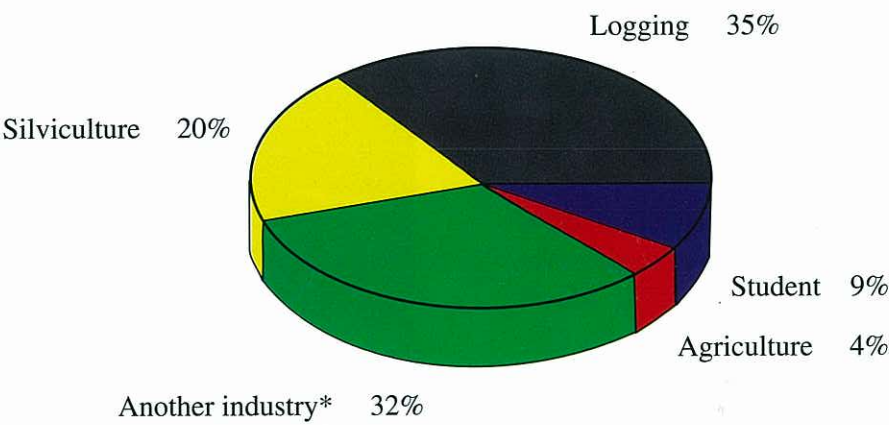


Figure 2 - Where are your currently working?

*\*another industry includes: fishing, meat works, construction, hotel industry, shearing, bricklayer, skifield*

## JOB IN 1998

Over half (55%) of the polytechnic students recontacted in 1998 had remained within the forest industry since completing their training, working in either logging or silviculture (Figure 2) when recontacted. Some (9%) had decided to continue their forestry education at a higher level, and had enrolled in a university or more

It should be of concern to the industry that although 89% had moved directly into silviculture or logging after finishing their polytechnic training, over the period of the study to when the students were recontacted, the number remaining in the industry had dropped to just over half. The career movements of the polytechnic students is shown in Table 3, with reasons for leaving the industry discussed in the

	AREAS STUDENTS WERE WORKING IN							
	Logging (n)		Silviculture (n)		Agriculture (n)		Other (n)	
	First job	Job now	First job	Job now	First job	Job now	First job	Job now
Polytechnic								
Nelson	21	15	4	3	0	0	0	7
Hawkes Bay	5	1	2	2	0	0	2	6
Aoraki	0	0	10	7	0	0	3	5
Manawatu	0	0	1	0	0	1	-	-
Tairāwhiti	6	5	-	-	-	-	0	1
Telford	7	4	3	2	3	3	0	6
Taratahi	-	-	2	0	-	-	0	2

*Table 3 - Career movements of polytechnic students by number*

## WHY DID YOU LEAVE THE FOREST INDUSTRY?

Of those students who had left their logging or silviculture job, most had moved outside of the forest industry. There were a number of factors contributing to the students' decision. An improvement in pay for easier work was the most common reason (29%), but issues of safety (16%), continuing education (10%), and a desire for change (23%) had also influenced the students. A depressed forestry market, and the resulting effect on labour demands, was responsible for 22% of job losses. Dissatisfaction with pay was a factor noted in the 1989 Logger survey (Gaskin et al., 1989).

It was encouraging to note that over half (55%) of those who had left, said they would still like to work in the industry. However, of this group, only 13% had actually applied for a forestry job.

Comments from students no longer working in the forest industry are separated by course and shown in no order of preference as Appendix 2.

## TIME WITH CURRENT CREW

The students had spent an average 2.4 years (range one month to eight years) working with their current crew. Polytechnic-trained loggers had spent three years on average with their current crew, while for silviculture the average was somewhat less at 1.8 years.





“Harvesting tutor demonstrating tree felling practices”

An earlier study by Gaskin et al. (1989), showed loggers had spent an average of 1.8 years with their current crew. By 1994, the average for loggers had increased to two years, although silvicultural workers were still leaving their crews six months earlier than loggers (Gibson, 1994). One year later, Byers found forest workers were staying with their crews for longer periods, loggers staying three years on average with the one crew, and silviculture workers 1.8 years (Byers, 1995). These results indicate increasing stability in the forest workforce. It is

surprising to find in the current study, that the average time students had spent with their current crew had not increased beyond the 1995 study results, given that training has been previously shown to be associated with reduced turnover (Bomford and Gaskin, 1989; Adams, 1993). This may be a reflection of improved training within the forest industry, and preparation for the 1995 NZFOA requirement for everyone working in the forest to be either trained or in training for the job being undertaken.

### NUMBER OF CREWS WORKED IN

Overall, 80% of the students had worked in three or less crews. Polytechnic trained silviculture workers showed a greater tendency than loggers to stay with the one crew (Figure 3). One logger had worked part-time for nine different logging crews.

Those students who had moved into the logging sector had worked in an average of 2.6 logging crews. Only 16% had worked in more than three crews. In a study of the Otago/Southland forest workforce logging workers could be expected to have worked in 1.4 crews, and 25% of the workforce had worked in more than three crews (Byers and Adams, 1995).

Percent

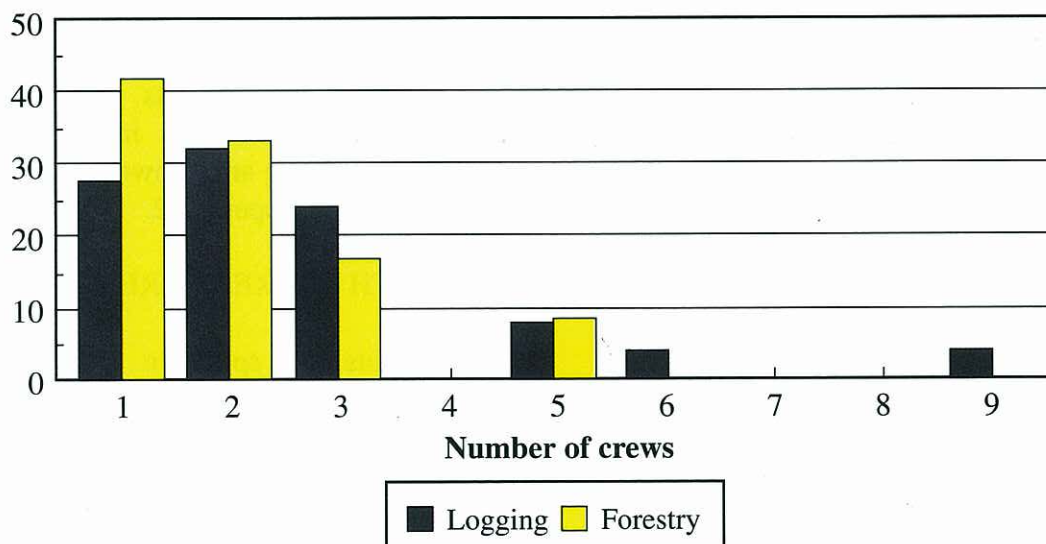


Figure 3 - Number of crews students had worked in



The pattern was similar for silviculture. These students had worked in an average of two crews, with only eight percent shifting between more than three crews. In the 1995 study, silviculture workers had worked in 1.1 crews on average, and 15% had worked in more than three crews (Byers and Adams, 1995). These results show that those polytechnic trained students who had remained in the industry, had moved around fewer crews than their Otago counterparts, resulting in reduced turnover rates and improved workforce stability.

The rate of turnover in the forest industry is of concern, for with every departing worker goes the investment the contractor has made into training that person. The level of safety associated with experience is also likely to be lost from the crew. The stability and internal dynamics of the crew may be compromised, and existing crew members may face an increased workload while a replacement worker is being trained. While exit interviews are rarely conducted in the forest environment, this study has provided an opportunity to determine why people choose to leave their crew (Figure 4).

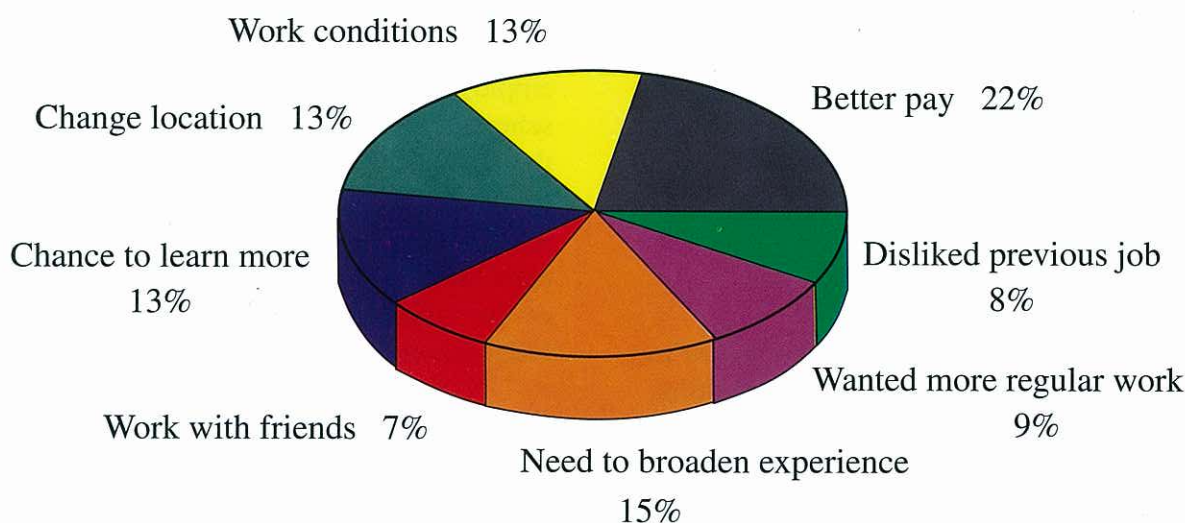


Figure 4 - Which of the following factors made you shift crews?

## MOTIVATORS TO CHANGE CREWS

In addition to a series of suggestions sourced from a previous study, the students were provided with the opportunity to identify other factors culminating in their decision to leave their crew (Cottel, 1974). A significant number (41%) of those who provided comment said their crew had either run out of work, been closed down, or been laid off. A depressed forestry market may have had some influence on what had happened to these crews, as well as changes to the

company-contractor employment structures which were being implemented at the time.

While each of the factors had some influence on the students' decision to shift crews, pay was the most common reason provided. This is consistent with the 22% of students who had decided to leave the forest industry for reasons of pay alone. This should be of concern to an industry seeking to retain a skilled workforce, especially in light of a comment by one student who felt that he was "getting





*"Nelson Polytechnic class of 1994"*

ripped off by the boss". This is not a new trend, highlighted by results from one regional study which showed silvicultural workers were taking home less than \$200 a fortnight, somewhat less than the New Zealand national average for that time of \$1308 (Cummins and Byers, 1996).

#### FIRS ATTAINMENT

One of the objectives of this study was to determine whether pre-entry training encourages forest workers to continue to obtain modules from the Forest Industry Record of Skills (FIRS) system, after completing pre-entry polytechnic training.

Polytechnics offer a range of documents to verify the completion of a course and skill attainment. Most (93%) of the students said they had received one or more qualifications at the completion of their course, including attendance certificates (58%) and unit standards (32%). Many (63%) of the students said they had obtained FIRS modules from their polytechnic training. While the FIRS system recognises skills obtained within the forest industry, it is only available to employees actually working in the forest industry. The educational equivalent is the unit standard system. Students obtain unit standards in recognition of polytechnic

training, and these units are registered on the New Zealand Qualifications Authority (NZQA) framework. Once the student is employed and registered under the FIRS scheme, the units are then transferred to the equivalent FIRS module. Although the students thought they had obtained FIRS modules at polytechnic, they would not have held them until gaining employment in the industry and registering under the FIRS scheme.

Many of the students had continued to obtain FIRS modules after finishing their polytechnic training. Three-quarters of those working in silviculture had obtained FIRS modules (average 2.2 modules per person). For logging the figure was slightly higher, with 88% obtaining additional modules (average 4.9 modules per person). The information provided by students was not verified against industry records. It should be noted that the structure of the polytechnic course and the length of time the students had to work in the industry may have affected the number of modules obtained. These figures can be compared with results from the NZFOA workforce census, which showed 58% of silviculture workers and 76% of loggers held a FIRS module (Byers, 1995). Silviculture workers held an average 1.7 modules each, and loggers had 3.1



modules on average. This indicates that forest workers who have undergone pre-employment training appear more likely to continue training once in the workforce. The gap between logging and silviculture FIRS attainment was also illustrated, supporting an observation previously made by Byers (1995).

## ACCIDENTS

The survey asked the students how many accidents they had experienced since working in forestry, and how many days were lost as a result of the accidents. Relating these figures to the total years the students had worked in the forest industry, reveals an injury rate of 14% per annum (Total injuries/total years worked). This rate is slightly lower than the 16% per annum found by Gibson (1994). These rates are comparable as they have both been calculated from information provided by survey responses. Therefore, it appears that the polytechnic training has resulted in a slightly reduced incidence of injury. In another study on rehabilitation in the forestry sector, an injury rate of 10% per annum was calculated using information from the Forest industry Accident Reporting Scheme (ARS) (Sullman, 1998). While this figure appears

to undermine the impact of training in reducing injury, it must be noted that the figure has been obtained from an objective database which is reliant on information being reported to it for inclusion. As Gibson (1994) states, the difference in lost time injury (LTI) rates (between surveys and the ARS) appears to indicate some degree of under-reporting.

Those students working in logging operations had experienced injuries which resulted in an average of 4.8 days off per injury, while for silviculture the average was higher at 9.6 days per injury (Total days off/total number injuries). Results from the 1996 forest industry ARS for logging reveal a severity rate of 13 days off per injury (Parker, 1997a). For silviculture the rate was somewhat less, with 5.2 days lost per injury (Byers and Parker, 1997). Therefore, although the severity rate for logging was considerably lower than the data contained in the ARS, the severity data for silviculture was much higher. The higher rate for silviculture could be explained by two bad accidents which both resulted in the person taking 20 or more days off work.



“Tairawhiti Polytechnic forestry class 1994”

COMMENTS ON THE  
POLYTECHNIC TRAINING

The success of a course can be proven in part by its ability to prepare a person for the workplace. An overwhelming number

(90%) thought that doing the course had helped them to get a forestry job. The students were asked to rate on a scale of “excellent” to “not at all”, how well the course had prepared them for their job (Figure 5)

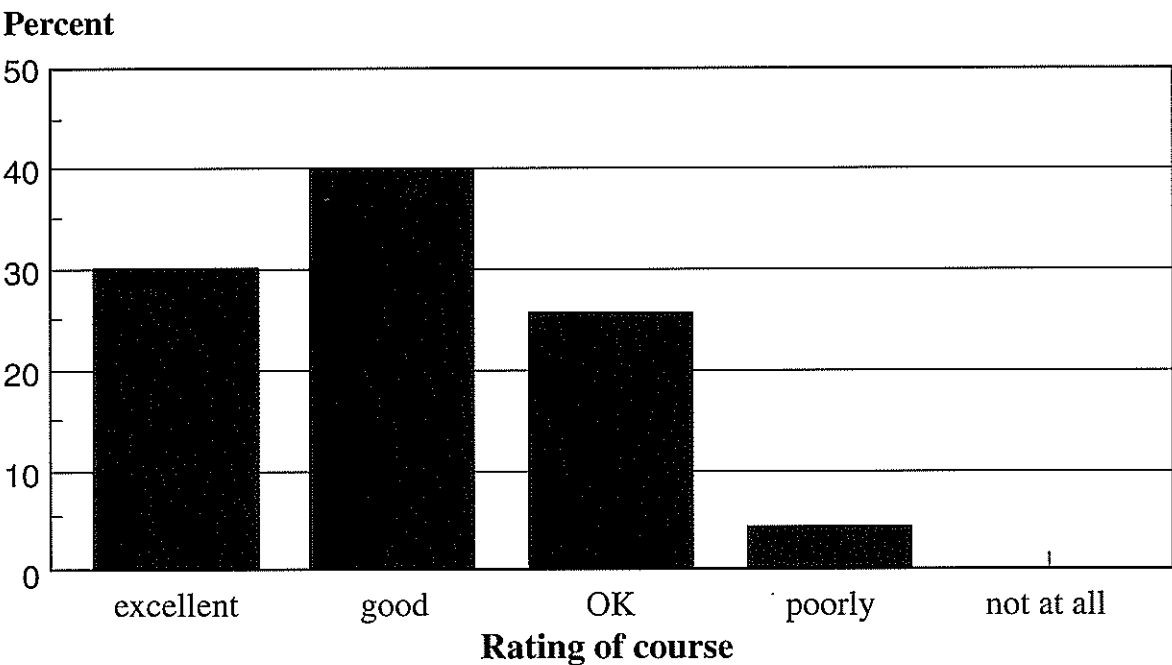


Figure 5 - How well did the course prepare you for your job?

It was encouraging to find that the majority of students were positive about the ability of the course to prepare them for work in the forest. This indicates that the courses are fulfilling their role of educating newcomers to the industry, to the level where they can effectively enter the forest workforce as a member of a forest crew. In another study, university forestry graduates were not as satisfied with their training in preparing them for work (Cummins, 1998). This could reflect the practical nature of polytechnic training, where the focus is on skill rather than academic development.

USE OF SKILLS AT WORK

To determine the lasting ability of skills learned at polytechnic, students were

asked to rate how often they used the polytechnic-learned skills, in their current job (Figure 6). Only those students who were working in the forest industry were included in this section.

While the ratings for this question were spread along the scale, they were skewed in a positive manner, indicating that most students made some use of the practical skills gained at polytechnic. This is a good result, given that the courses aim to provide basic skills which can be further developed in the workplace. It was encouraging to see that so many still used the basic skills they had first learned at polytechnic, further developing these basic skills once employed in the industry.



MOST VALUABLE SKILL OBTAINED  
AT POLYTECHNIC

An awareness of safety was the most valuable skill students had gained through their training, a positive result in view of the importance of safety and the Health and Safety in Employment Act (1992). Students commented that they had left their training with the attitude of “do it right the first time, be safe, and think”.

Correct use and maintenance of a chainsaw was the next most valued skill identified by the students, followed by personal skill development including the ability to work hard and as part of a team. Table 4 shows other skills that the students thought had provided a valuable part of their education.

Valued Skill	Percent
Safety awareness	30
Chainsaw operation and maintenance	23
Attitude / motivation/teamwork/how to work hard	19
Practical logging skills - general	14
Practical forestry skills - general	10
First aid	3

Table 4 - Most valuable skills obtained at polytechnic

Opportunity was provided for the students to comment on the least valuable skill they had learned. This produced a wide range of comments from “too much paperwork” to “picking grapes and cutting firewood”. However, tree biology was most commonly (12%) identified as a skill the students had no use for. Seven percent made the comment that everything they had learned was relevant.

Comments from students are separated by course and provided as Appendix 3.



“Learning the skill of pruning”

ADDITIONAL SKILLS DESIRED

The students provided a wide range of answers when asked what skills they would like to have had included in their course (Appendix 2). However, the most common response (18%) was for more training in machinery operation and maintenance.

With increasing mechanisation of the New Zealand forest industry, polytechnics have the opportunity to progress with the industry and incorporate mechanised training into their courses of instruction. A concern of 14% of the students was that their training had failed to provide them with the opportunity to work at production speed. This may have had an impact on the way they did their job once in a production situation. Production speed and the work quality of newly-qualified trainees were two factors causing concern

to contractors in a previous study (Rowsell, 1997).

This study highlighted the conflict for polytechnic tutors in balancing industry needs and norms against the requirements set down by the Education Training and Support Agency (ETSA) for courses being funded.

It is common sense that skill development continues with workforce exposure and working in a production situation. Most (80%) of the students who said they wanted more skills included, said they had learned these same skills once at work. In most cases, a contractor who was certified as a trainer had been responsible for provision of training (Figure 7).

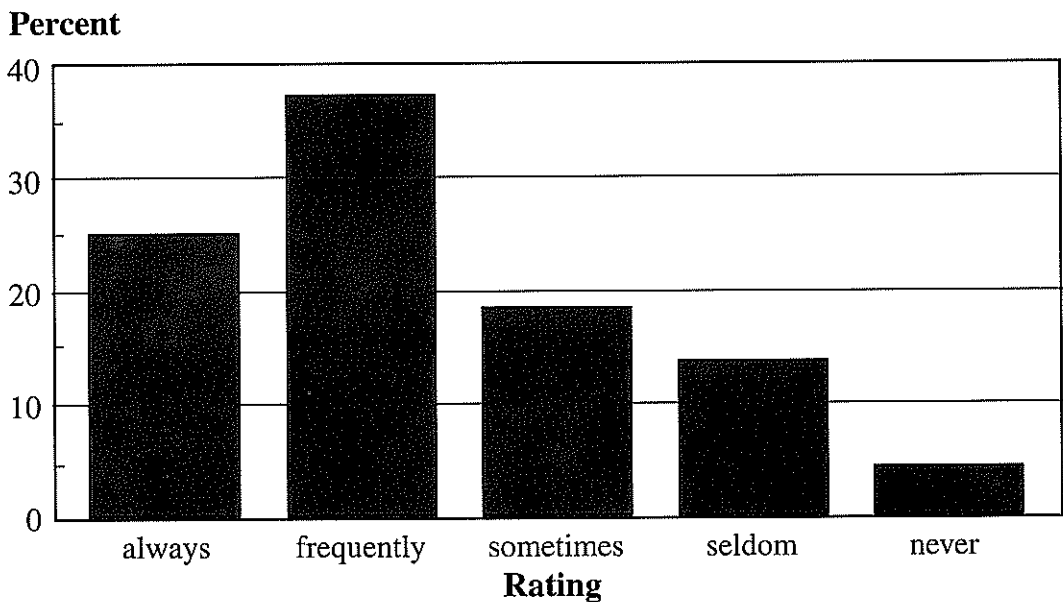
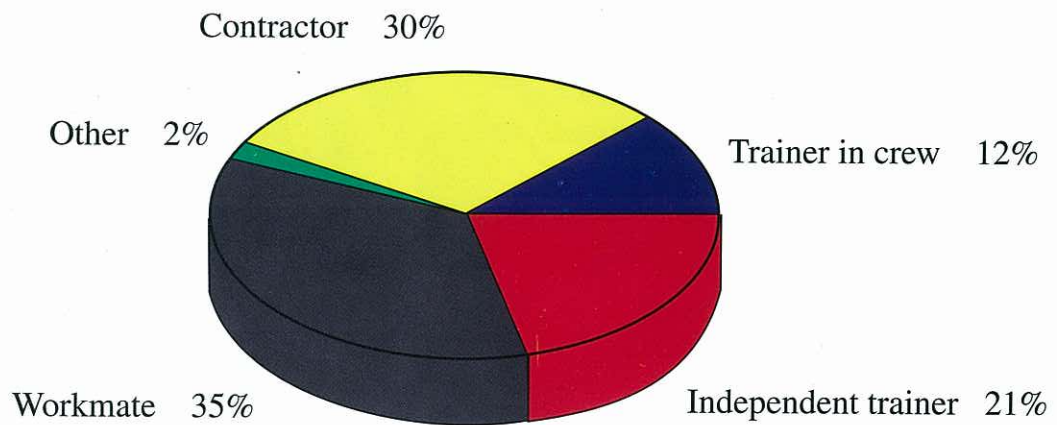


Figure 6 - Use of skills in current job,





*Figure 7 : Who provided later training?*

Although 33% of the students continued their training through a certified trainer, more (67%) were taught additional skills

through an uncertified source, commonly a contractor or workmate.



*“Nelson Polytechnic logging trainee learning to fell - watched by tutor”*





*“Logging trainees from Manawatu Polytechnic”*

#### WOULD THE STUDENTS DO THE COURSE AGAIN?

The group was asked the hypothetical question whether if given the choice again, would they still choose to do the course, or would they choose to go straight to work in a crew. A judgement on the success of these forestry courses can be made from the response to this

question. Overwhelmingly, 73% said they would choose to do their course again. This is a positive indicator of the success of these courses, considering that only 55% of this group was actually working in the forest industry. This is valuable feedback, indicating that polytechnic training of forestry workers is successful in meeting the needs of new entrants to the forest industry.



*“Silviculture award to a top student:  
Shane Hindmarsh receiving the Levin Sawmakers trophy while course director  
Rick McAslan, looks on”*

## CONCLUSIONS

- Just over half (55%) were still working in the forest industry in 1988 at the time of the follow-up study, in logging (35%) and silviculture (20%).
- Most (69%) of the polytechnic trained students had obtained a job in the forest industry within a week of finishing their course.
- Most (89%) of the students obtained their first job in the forest industry. By the time of the follow-up study, this number had reduced to 55%. The reduction in numbers was due to several factors including dissatisfaction with pay, boredom, and a downturn in the forestry market at the time of the study.
- Fewer Maori had attended polytechnic forestry training courses than European. However, this is likely to reflect the geographic location of the polytechnics included in the study.
- Polytechnic trained silviculture workers and loggers tended to experience less turnover than that shown by similar workers in a previous study.
- Level of income was the main reason for turnover, with 29% of students quoting a dissatisfaction with their pay.
- Most students had continued their training after gaining employment in the industry, with 68% having obtained additional modules since completing the course.
- Most (90%) of the students thought their course had prepared them well for entry into the forest industry.
- An awareness of safe and correct work habits was the most valued skill provided by the training. The most sought after skill was for machine operation and maintenance.
- In hindsight, 73% said they would choose to undertake polytechnic training again.
- After completing the polytechnic training, any further training was mainly carried out by workmates.
- The students frequently used the skills they had learned at polytechnic in their current work.

## REFERENCES

- Adams, D. (1993): Labour Movement in the Logging Industry - One Region's Experience. LIRO Report Vol 18, No. 4.
- Bomford, D. and Gaskin, J. (1988): "Turnover in Logging", LIRA Report Vol. 13 No. 9.
- Byers, J. (1994): Career Aspirations and Industry Perceptions of Polytechnic Forestry Students - A Pilot Study. LIRO Report Vol, 19 No. 12.
- Byers, J. (1995): Forestry Workforce Census 1994. LIRO Project Report No. 57.
- Byers J. and D. Adams (1995): Otago Southland Forest Workforce - Five Years Later. LIRO Project Report No. 58.
- Byers, J. and Parker, R (1997): Lost time injuries in forest silviculture - 1996. Liro Limited report Vol 22, No 15.
- Cottel, Philip (1974): Occupational choice and employment stability among forest workers. Yale University: School of Forestry and Environmental Studies, Bulletin Number 82.
- Cummins, T. (1998): Forestry sector university degrees: Their impact on graduate employment (1994 - 1998). Liro Project Report 68.
- Cummins, T. and Byers, J (1996): East Coast Silviculture Workforce 1996. Liro Project Report 64.
- Gaskin, J., Smith, B., and Wilson, P. (1989): "The New Zealand Logging Worker - A Profile", LIRA Project Report 44.
- Gibson, R. (1994): Attitudes Towards Safety in the New Zealand Forest Industry. LIRO Project Report No. 53.
- New Zealand Forest Owners Association (1993): Occupational Safety and Health Strategy. NZFOA: Wellington.
- New Zealand Pine International (1997): Growing the people. November/December edition, pp 18-20.
- Parker, R. (1995): Lost Time Accidents in Forestry - 1994. LIRO Report Vol. 20, No. 13.
- Parker, R. (1997) (a): Analysis of lost time injuries - 1996 Logging. Liro Limited report Vol. 22, No 19.
- Parker, R and Kirk, P (1993): Felling and delimbing hazards. Liro report Vol. 18, No 22.
- Probine, M., Grayburn, A. and Cooper, A. (1987): "Report of the Review Committee on Education and Training in the Forestry Industry". Ministry of Forestry, Wellington.



Rooney, D (1998): Hell or paradise for future forestry. *In* Christchurch Press, February 20, 1998.

Rowsell, S. (1997): Survey of opinions of training and safety in forestry. Report prepared for Forest Industries Training and Education Council, February 1997.

Sullman, M (1998): Role conflict and role ambiguity in the logging industry - a pilot study. Liro Limited report, *In print*.



*"Class of 1995 - Telford Polytechnic"*

## ***POLYTECHNIC FORESTRY STUDENT FOLLOW-UP***

This is the final part of a polytechnic study which is tracking the workforce movements of forestry students.

**Please complete the following questions to your best ability and return to Liro Ltd in the accompanying pre-paid envelope**

**All answers are treated as confidential**

---

Polytechnic attended:.....

Length of course:.....

Year attended course:.....

*Please circle or tick the answer that applies to you.*

Ethnicity: NZ European, NZ Maori, Other (please specify).....

### **Part 1: WORK SINCE COMPLETING COURSE**

- 1 How long did it take to find a job after finishing the course?**  
.....days .....months

**What was your first job?**.....

- 2 Where are you currently working?**

☐Logging                      ☐Silviculture

☐Horticulture                ☐Agriculture

☐Another industry (Please specify).....

- 2a If you are not working in the forest industry, why did you choose to leave?**

.....



**3 If you do not currently have a job or are working outside the forest industry,**

Do you still want to work in the forest industry?

Yes/No

Have you applied for any forestry jobs?

Yes/No

**4 How long have you been at your current crew?**

.....years .....months

**5 What tasks do you normally do in your current job? (please specify)**

.....

**6 How many forestry or logging crews have you worked in since finishing the polytechnic course?.....**

**7 If more than one crew, tick all the following reasons you chose to move crews:**

☐ Pay

☐ Work conditions

☐ Location

☐ Chance to learn more

☐ Working with friends

☐ Needed to broaden experience

☐ Regular work

☐ Disliked previous job

Other reasons

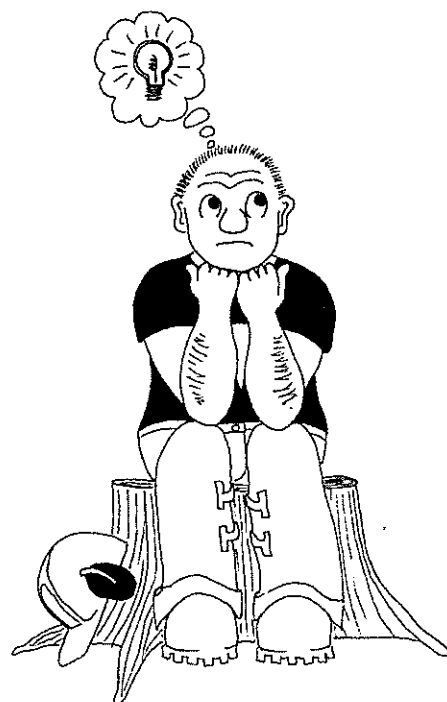
(specify).....

**8 What qualifications did you obtain at polytechnic?**

(a)unit Standards (b)FIRS (c)attendance certificate

(d)other (specify).....

**9 How many FIRS modules have you gained since finishing the course?.....**



## Part 2: WHAT YOU THOUGHT OF THE POLYTECHNIC COURSE

- 10 Do you think doing the course helped you to get a forestry job?  
Yes/No  
Why?.....  
.....

- 11 How well do you think the course prepared you for your job?

excellent      good      OK      poorly      not at all

--	--	--	--	--

- 12 How often do you use the skills you learned at polytechnic in your current job?

always      frequently      sometimes      seldom      never

--	--	--	--	--

- 13 What was the most valuable skill the polytechnic course taught you?.....  
What was the least valuable skill?.....

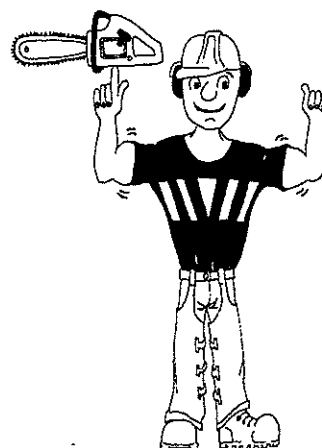
- 14 Please tell us what **additional skills you would like to have had** for your job but weren't given in the polytechnic course

.....  
.....

- 15 Were these skills provided later at your job?  
Yes/No

- 16 If yes, Who **trained** you in these skills?

contractor - uncertified as trainer	
contractor - certified as trainer	
independent trainer	
workmate	
certified trainer in crew	
other (who?)	



- 17 If you had the choice, would you still do the polytechnic course first, or would you go straight to work in a crew?

☐ Would do polytechnic course first    ☐ Straight to work in a crew

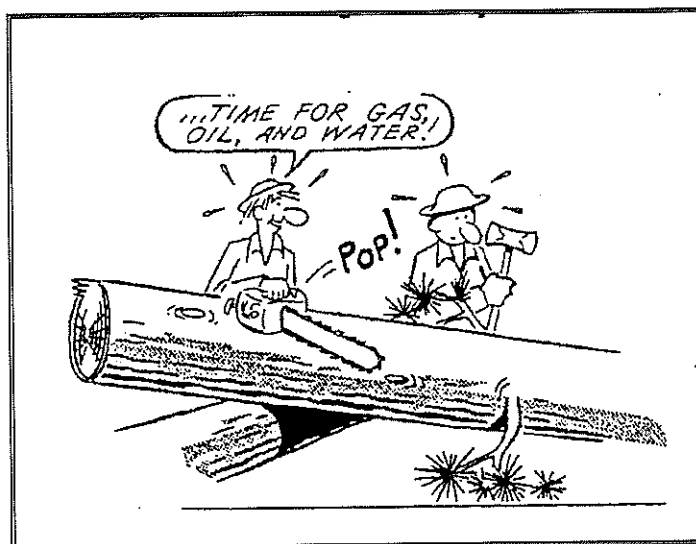
- 18 How many accidents have you had since starting forestry work?.....

How long were you off work for in total?

.....days .....weeks

---

Thank you for helping us with our study  
The results from this will be used to improve polytechnic training for new forestry students.



## **APPENDIX 2:**

Student comments on why they had chosen to leave the forest industry

### **Nelson Polytechnic**

Had an accident, never be able to work in bush again  
Sick of working guts out for minimum wage  
Easier work for better money  
Lack of employment  
Could travel overseas with current work  
Left to do Diploma in forestry  
Laid off due to market

### **Hawkes Bay Polytechnic (EIT)**

Left pruning gang as rate per tree too low, now prune farm blocks  
Wanted change of scenery  
Don't have to travel, and get better pay  
Laid off due to Asian crisis  
Better job offer with more job security  
Left to further education  
Further education-forestry commerce degree

### **Aoraki Polytechnic**

Had to leave district to pay mortgage on house  
Found had other skills could draw on  
Got sick of the industry  
Wanted to live in town (urban dwell?)  
Bosses business went under

### **Manawatu polytechnic**

Better income from agriculture

### **Tairāwhiti Polytechnic**

Crew laid off due to loss of sale market for logs

### **Telford Polytechnic**

High physical input for small pay  
Lack of work due to market collapse  
Better money  
Too dangerous, a few close calls, working all weather conditions  
Strained back while delimbing, doctor advised to have a break  
Wanted to try something else  
Couldn't see self working in logging all of life  
Health not satisfactory

### **Taratahi Polytechnic**

Body only lasts so long in the bush  
Fed up with an inconsistent income

### **APPENDIX 3:**

Student comments on the most valuable skill they had learned during their training

#### **Nelson polytechnic**

The safe way to do things  
Experience in logging ops  
Chainsaw work  
Overall industry understanding  
Safety  
Safe operation of a chainsaw  
Ability to work safe and correctly  
Chainsaw maintenance  
How to work hard and be enthusiastic  
Safety and all round intro to forestry skills  
To develop the right attitude  
Use of a chainsaw  
Saw sharpening, safety awareness, first aid  
Basic felling cuts  
Work attitude, saw sharpening  
Safety  
How to work hard  
To work hard  
Chainsaw operation & maintenance  
Hazard awareness  
Determination to finish the day  
Chainsaw maintenance, felling, cross cutting  
Safety first, don't take shortcuts  
Lateral thinking, keeping safe  
Think safety

#### **Manawatu polytechnic**

Discipline and motivation

#### **Aoraki Polytechnic**

Chainsaw operation and safety  
How not to fall off the ladder  
Techniques in all areas of forestry  
Pruning technique  
Silvi skills  
Pruning  
Correct use of a chainsaw  
Pruning  
Prune, plant, spray  
Thinning  
Pruning

#### **Taratahi Polytechnic**

How to use a chainsaw

**Tairāwhiti Polytechnic**

Improve interpersonal relationships  
Chainsaw maintenance  
Chainsaw maintenance  
Gear maintenance  
First aid  
Responsibility and motivation  
Safety and proper work habits

**Telford Polytechnic**

Logging  
Chainsaw use  
Wire rope splicing  
Safety awareness  
Thinning  
Felling & tree selection, chainsaw maint, site prep, fire  
Fighting  
Safety  
Safety first  
Do it right the first time, be safe, think!  
Safety  
Chainsaw skills and maintenance  
Teamwork  
Working together as a team

**Hawkes Bay Polytechnic (EIT)**

Maintaining a saw  
Chainsaw skills  
Good basic knowledge to begin forest work  
To respect a chainsaw (safety)  
Safe use of a chainsaw  
That proper training and perseverance produces  
Production  
Working as a team  
To always check what the tutor says  
Practical skills in all sectors