University education and the impact on employment in the forest industry
Tina Cummins

Abstract

The impact of holding a forestry-focused degree on obtaining employment in the forest industry was observed through a longitudinal study. Undergraduate students from three New Zealand universities which include forestry in their curriculum, were recruited for the study during the first semester of the 1994 study year, and recontacted by post in 1998. Over half of the graduates had a job by the time they graduated. Half of the graduates surveyed had been employed by a forest company; the remainder were employed by consultants, in sawmills, and logging crews. Some had found employment outside of the forest sector. Over half (57%) of graduates thought that their degree was essential to obtaining their first job. Nearly half (44%) of all graduates thought their degree needed more industry contact, with course material updated to reflect current industry practices.

Key words: training and education, New Zealand, forestry, graduate employment

Introduction

In an earlier survey of graduate employment (NZED, 1974), employer interest in graduates was predominantly for vocational fields, and commerce graduates were the group most employed. The same study found that forestry graduates were mostly employed in occupations which directly used their specialist qualification. The study found 75% of employers of all university graduates considered the degree content of direct relevance to the occupation for which they had been employed, indicating the relevance of the degree as a major factor in graduate selection. In a 1990 survey of graduates (Cox and Pollock, 1997), a significant minority of graduates (9.4%) were working in areas which did not require them to have a tertiary qualification. Within this group, the Humanities and Education graduates had remained in this position five years after graduation.

The increasing importance of forestry in New Zealand as a growth industry and media portrayal of plantation forestry as a generator of income and employment led to increasing numbers of students choosing to take forestry courses or options as part of their tertiary study. A 1994 review of forestry education found there was a need to further develop communication skills of forestry graduates, and a need for greater constructive communication between industry and the universities (Deloitte Touche Tohmatsu, 1994). Developments in university curricula have led to the expansion of forestry education to the point where three New Zealand universities offer degrees which include forestry in their curriculum, producing graduates who (mainly) seek jobs within the forestry sector: the BForSci degree, taught by the School of Forestry at the University of Canterbury; the Bachelor of Forest Engineering (BEng) degree taught by the School of Forestry in conjunction with the University of Canterbury School of Engineering; the Bachelor of Commerce (Forestry) (BCommFor) degree, a commerce rather than science-based course which emphasises the economics of forestry; offered by Lincoln University and the Bachelor of Science (Technology) (BSCTech), a forestry option offered within a technical degree taught at Waikato University, combining forestry science, technology and business management courses with forest industry work experience.

The range of forestry-focused degree courses and options currently available suggests a wide range of career options. Cox and Pollock (1996) found that forestry graduates were as successful as dentistry and medicine in gaining employment, with 80% or more obtaining full-time work in the year after graduation, and 100% employed in full-time positions five years after graduation.

A 1996 study of forest company management staff identified the most common tertiary qualification as a Bachelor of Forestry Science (BForSci) from the University of Canterbury (Byers, 1996). Until the demise of the New Zealand Forest Service in 1987, specialised forest industry qualifications comprised Woodsman and Ranger certificates, New Zealand Certificate in Forestry (NZCF), and the BForSci. In Byers (1996) study, 54% of the management staff held a forestry qualification of this type. A specialised forestry degree was held by 37% of management staff, including BForSci, Bachelor of Engineering (Forestry) (BEngie), and Master of Forestry Science (MForSci). However, 9% of management staff held a general degree, including a Bachelor of Science (BSc), Master of Science (MSc) and Bachelor of Commerce (BComm). Management
staff holding New Zealand Forest Service qualifications exhibited higher median ages (38.5, 43, 38.5, 34) than those holding university forestry degrees (29.5, 39, 23.5), leading to Byers (1996) finding that with the dismantling of the New Zealand Forest Service Training System, a university qualification will become the dominant qualification within the management sector. However, little is currently known about the relevance of university forestry degree options in preparing graduates for employment within the forest industry.

**Method**

One hundred and eight undergraduate students present for lectures in years one to four of the forestry-sector degree programmes offered by the University of Canterbury, Lincoln University and Waikato University, were recruited for the study in the first semester of the 1994 study year, under a total enumeration sampling procedure.

The original subjects were recontacted by post four years later for the main 1998 study, and asked to complete a self-administered written questionnaire (Cummins, 1998). A reply-paid envelope was included with the written questionnaire. Fifty-one of the original 108 subjects completed the questionnaire and returned it to the researcher, resulting in a response rate of 47%. The questionnaire was designed to identify the effectiveness of the qualification in assisting graduates to obtain employment within the forestry sector, and to ascertain whether the subjects had remained in the forest industry.

**Results**

Graduates of the University of Canterbury BForSci degree comprised the greatest portion of the sample for both parts of the study (Table 1).

<table>
<thead>
<tr>
<th>University Programme</th>
<th>Number sampled</th>
<th>1994</th>
<th>1998</th>
<th>Response rate by course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canterbury BForSci</td>
<td>75</td>
<td>40</td>
<td>53%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lincoln BSComm (For)</td>
<td>17</td>
<td>3</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waikato BSc (Tech)</td>
<td>13</td>
<td>5</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>108</td>
<td>51</td>
<td>47%</td>
<td></td>
</tr>
</tbody>
</table>

**Table 1: Response rate by university degree programme**

**Demographics**

Age

The mean age of the students surveyed at university was 22 years (range 18 to 38 years (male) and 18 to 23 years (female)).

Sex

The majority of students recruited during 1994 were male (84%); females comprised only 16% of the respondents. The ratio was similar for the main 1998 study (80% male, 20% female).

**Ethnicity**

The recruited students were mainly European (94%). Five percent who identified as "other" were from Canada and Fiji. One percent of the recruitment sample were Maori. All subjects able to be recontacted for the main study were European.

**Time to obtain first job after graduating**

Over half (58%) of the graduates who were employed in the forest industry at the time of the survey had a job to go to as soon as they had graduated. All of the group working in forestry at the time of the survey, had obtained employment within 12 months of graduating (Table 2). On average, it had taken graduates 1.7 months (approximately seven weeks) to obtain a job.

<table>
<thead>
<tr>
<th>TIME TO OBTAIN FIRST JOB</th>
<th>FREQUENCY</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had job at graduation</td>
<td>25</td>
<td>58</td>
</tr>
<tr>
<td>&lt; 1 month</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>1 - 6 months</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>6 months - 1 year</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>TOTAL</td>
<td>43</td>
<td>100</td>
</tr>
</tbody>
</table>

**Table 2: How long did it take to obtain a job after graduating?**

**Where employed at time of second survey**

Half of the graduates had been employed by a forest company. Other employers were forest consultants (17%), sawmills (8%), and logging crews (2%). Four percent had chosen to continue their studies. Four percent were still looking for work at the time of the survey (Figure 1).

Some graduates (15%) had found employment outside the immediate forest industry, in research, council, agriculture and a farm park. Seventy-five percent of this group said they would still like to work in forestry. The remaining 25% said they had either changed career direction, had no further interest in the forest industry, or believed there were no jobs available within the forest industry.

Graduates had been employed in the forest sector a mean of 2.6 years (range 0.5 to 21 years). These graduates had spent a mean of 1.7 years in their first position (range six weeks to four years) before moving to their second job. Graduates had worked a mean of one year (range six weeks to two years) at their second position. Being
"headhunted" by company recruitment personnel was the most common method (34%) by which graduates had obtained their first job, followed by a response to an advertised position (30%). Other recruitment methods included internal appointment (14%), word of mouth (9%), personal inquiry (7%), advice from a friend (2%). Four percent were self-employed.

Importance of having a forestry degree to obtaining first job

A Likert Scale was employed to identify graduate impressions of the significance of their degree in obtaining their first graduate position. Over half (57%) of the graduates regarded their degree as essential in assisting them to obtain their first job (Figure 2).

Composition of degree

A Likert Scale was utilised to disclose graduate perception of the composition of the degree programme (Figure 2). As the majority of respondents (79%) had graduated from the University of Canterbury BForSci, a comparison has been made between this and other degree programmes. While the number of respondents from other degrees was too small to draw valid conclusions, Figure 3 indicates a general satisfaction with the course structures. BForSci graduates showed the strongest opinions on the structure of the course, with several graduates commenting that the course needed closer links to the forest industry.

Skill development

The most valued skill the graduates had obtained through their education was reported to be generic use of a computer. Graduates identified a number of skill areas they perceived as lacking in the degree programme they had studied. Personnel management skills were identified by 23% of graduates, followed by use of specialist forestry software programs such as MARVL, FOLPI and STANDPAK (20%). Eleven percent said they would have liked more practical forestry skills to be included in the degree. A greater emphasis on financial skills such as forestry taxation and budgeting was reported by 10% of graduates.

Improving the structure of the degree: A graduate perspective

Comments from graduates reveal nearly half (44%) thought the degree they had studied needed more industry contact, with course material updated to more accurately reflect current forest industry practices. Eighteen percent of graduates thought a greater practical component would make the degree more useful, especially when moving into a supervisory role. The remainder of comments were related to a wide range of topics.

Discussion

A significant number (81%) of graduates had been employed within six months of completing their education, indicating the success of specialised forestry degree options in assisting graduates obtain employment within the forest industry. Representatives from forest companies will often visit the university campus to meet the graduating year of students, offering positions directly to graduates. Over half (58%) of graduates had a job to go to as soon as

Students enjoy industry contact.
as they had graduated, a reflection of the industry practice of “headhunting”, or recruiting directly from the university, supporting Cox and Pollock’s five-year graduate survey finding (1997) that forestry graduates showed high placement (80%) immediately after graduation. Cox and Pollock (1997) also found that graduates of

Forestry education provides a broad knowledge base.

generalist courses including Biological, Physical, Consumer and Applied Sciences and Maths/Statistics/Operations Research, had low placement in full-time work after graduation, supporting the finding from an earlier study that employers recruited in the graduate field primarily for specialist knowledge (NZED, 1974).

Forestry education aims to provide a broad knowledge base for future employees of the forest industry, with many specific skills being learned once employed. The skills nominated by graduates as being most useful to their work in the industry, were usually generic skills which related to the collation and presentation of information. This is not surprising, given the strong role of the computer in forestry applications and the need for a basic foundation knowledge of computer use. While comments from recent graduates indicate skills in the use of forestry software programmes are now taught as part of the degree programme, Cox and Pollock (1997) found graduates would like to have received further generic skills such as time management, negotiation skills, better written and spoken communication skills, for their subsequent employment, indicating that these skills are not emphasised sufficiently during degree courses.

Nearly half (44%) of the forestry course graduates thought the degree they had studied needed more industry contact, with course material updated to more accurately reflect current forest industry practices. Eighteen percent of graduates thought a greater practical component would make the degree more useful. These comments support findings from a Ministry of Forestry Education Review (Probine et al., 1987) and Cox and Pollock’s (1997) graduate survey, where recommendations for course improvement related to offering greater practical content or a work experience component, and having more direct industry or professional input into the courses. The earlier Forestry Education Review (1994) also concluded there should be greater constructive communication between industry and universities, with the direct involvement of industry representatives in shaping the course content. The forestry degree options of this current study, seek to address the practical component through a requirement for practical work experience during semester breaks (BForSci), or an industry placement component under supervision (BScTech). This encourages students to relate the theoretical component of their education to practical workplace situations. Graduates from the three universities studied, indicated they were generally satisfied with the composition of their degree. A significant number said that having the degree was essential to their gaining employment. It appears from findings of this study and previous research, that a specialised forestry degree option is necessary to employment within the forest industry, but there needs to be continual communication between educators and the industry in determining what is taught.

Note: It is possible that by the time this report is published, changes have been made to the curriculum studied by the students in this study.

References:


