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TAFE IT GRADUATES: THE PUZZLE OF POOR EMPLOYMENT OUTCOMES

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Recent surveys of the employment status of TAFE IT graduates show a high proportion are unemployed six months after completing their course. Unemployment rates are particularly high for graduates without previous work experience. This is a puzzling outcome given employer complaints about shortages of IT specialists. This article explores the causes of this situation and offers some policy responses.

Previous studies have found that TAFE IT graduates had surprisingly poor employment outcomes in the latter half of the 1990s when demand for IT skills generally was high. These studies include several by this author and a major IT study by the South Australia Centre for Economic Studies (SACES) for the Federal Department of Education, Training and Youth Affairs.[1]

The studies were based mainly on data from the national TAFE *Student Outcomes Survey* or its predecessor, the TAFE *Graduate Destination Survey*. These surveys are conducted by the National Centre for Vocational Education Research (NCVER) in May each year of graduates from the previous year and are similar to the Graduate Destination Surveys in the higher education sector. The surveys of TAFE graduates (from courses of 200 hours or more) in 1997 and 1999 found that:

- TAFE IT graduates had higher rates of post-course unemployment than the national average for all TAFE graduates, from all fields of study (24 per cent compared to 18 per cent in 1999).
- the major problem area was TAFE IT graduates who had not been working (in any kind of job) in the six months before starting their TAFE course. These TAFE IT graduates had a post-course unemployment rate of around 50 per cent, much more than the rate for all TAFE graduates with this same lack of work history before starting their course (35 per cent).
- TAFE IT graduates at all qualification levels had above average unemployment rates, including at the more advanced levels such as Diploma and Certificate IV in the new Australian Qualifications Framework (or AQF system)
- the majority of unemployed TAFE IT graduates were in the capital cities where most IT jobs were located.

For this report, unpublished data from the May 2000 national TAFE *Student Outcomes Survey* (released in December 2000) were first examined. The aim was to see whether employment outcomes had improved for TAFE IT graduates, especially those with no work history before their course, in a period when the IT job market was booming. In May 2000, the 'dot.com' technology sector was still buoyant and there was continuing strong demand for IT workers like computer help desk staff and entry level jobs in organizations large and small across all sectors of the economy.

TAFE IT GRADUATE UNEMPLOYMENT IN MAY 2000

There would have been around 9,400 TAFE IT graduates from 1999 courses and around 7,500 would have been in the workforce in May 2000. This includes

graduates from courses in three TAFE fields of study identified as 'IT courses': Computer science, information systems; Data processing/business administration; and Electronic engineering.[2]

In the May 2000 Student Outcomes Survey, however, it was possible to identify only around 60 per cent of all these TAFE IT graduates. This is because less detailed course data were collected in 2000 than in previous graduate surveys. In the May 2000 survey, only graduates from one group of courses could be identified: computer science, information systems, hereafter designated 'computer science graduates'. Despite the higher priority being given to IT skills training, no information is now available at a national level on the employment outcomes of a substantial number of TAFE IT graduates from courses in Data processing/business administration and Electronic engineering.

There were 5,800 TAFE computer science graduates from 1999 courses in the May 2000 survey, of whom 42 per cent (2,480) were graduates with no pre-course work history (not working in the six months before starting their TAFE course). Computer science graduates made up six per cent of all 1999 TAFE graduates from courses of 200 hours or more in Australia.

Surprisingly, the May 2000 employment outcomes for these TAFE IT graduates were virtually unchanged from 1999 as shown in Table 1.

- Graduates from TAFE courses in computer science still had a higher rate of unemployment (23 per cent) than all TAFE graduates (14 per cent).
- Again, unemployment among those computer science graduates with no work history before starting their TAFE course was a very high 50 per cent, well above the average for all TAFE graduates with this same background (35 per cent).
- Post-course unemployment rates for computer science graduates who had a job before starting their TAFE course were practically the same as the national TAFE average.

Note that these percentages measure graduate unemployment as a proportion of graduates in the labour force (the standard labour market definition of an unemployment rate), and do not include graduates who were not working or looking for work. But even when all graduates are considered, TAFE computer science

Table 1: TAFE IT (computer science) and all TAFE graduates: post- course unemployment rates, May 1999 and May 2000

	Unemployment rate *after* course [a] per cent					
	Graduates with no pre-course work history [b]		Graduates employed pre-course [c]		All graduates [d]	
	1999	2000	1999	2000	1999	2000
Computer science [e]	54	50	10	9	24	23
All TAFE courses	37	35	6	6	15	14

Source: NCVER, *Student Outcomes Survey, 2000*, (unpublished weighted data)

[a] Unemployed graduates as a percentage of all graduates in the labour force (employed plus unemployed). Excludes graduates not in the labour force.

[b] Did not have ajob in the six months before starting their TAFE course (that is, were either unemployed or not in the labour force).

[c] Were employed (in any job) in the six months before starting their TAFE course

[d] Graduates with and without a pre-course work history

[e] Computer science, information systems (field of study 0909)

graduates had a higher proportion unemployed (19 per cent) than the average for all TAFE graduates (12 per cent); and similarly, among those graduates with no pre-course work history, more IT graduates were unemployed (33 per cent versus 25 per cent).

Other data (not shown in tables) reveal that unemployment among TAFE computer science graduates in May 2000 was again concentrated in the capital cites (67 per cent of all unemployed graduates); and unemployment rates were again high among graduates at all levels including the more advanced courses (25 per cent at the Diploma/Advanced Diploma and Certificate IV level versus 21 per cent at lower levels).

WHY DO TAFE IT GRADUATES WITH NO PRE-COURSE WORK HISTORY HAVE RELATIVELY HIGHER UNEMPLOYMENT RATES?

This issue was examined using May 1999 survey data, not the more recent May 2000 survey, due to the limitations of latest TAFE IT graduate survey data noted earlier.[3]

In the May 1999 survey, the total number of TAFE IT graduates (as defined) was 9,150 or eight per cent of all TAFE graduates nationally (weighted data). Some 40 per cent of all TAFE IT graduates from 1998 had no pre-course work history and, of these, 2,300 were in the labour force in May 1999. The unemployment rate in this group in 1999 was 49 per cent compared to only 37 per cent for all TAFE graduates with no previous work history, a difference of 12 percentage points (Table 2).

There are some differences in the composition by age of TAFE IT graduates with no pre-course work history and all TAFE graduates with this same background who are in the labour force. As shown in the age distributions in Table 2, there are relatively fewer 15-24 year olds and relatively more aged 25-44 years in the IT group. Half of all TAFE graduates with no pre-course work history are aged 15-24 years, whereas this age group forms 41 per cent of IT graduates. The 25-44 year olds make up the largest group of the IT graduates.

Analysis of the unemployment rates by age group shows that the TAFE IT graduates (who were not working before they started their TAFE course) consistently had higher unemployment rates. However, these rates varied much more by age group for all graduates than for IT graduates. There are two unexpected results. Table 2 shows that:

- in the 15-24 year age group, the rate of unemployment is much higher among the IT graduates (44 per cent) than among all TAFE graduates with no pre-course work history (26 per cent) — a difference of 18 percentage points. aged 25-44 years, TAFE IT graduates also have a higher unemployment rate; and

Table 2: **TAFE graduates with no pre-course work history, [a] post-course labour force [b] size and unemployment rates by age group, 1999**

	It graduates [c]		All graduates	
	Age distribution of labour force	Unemployment rate	Age distribution of labour force	Unemployment rate
15-24	41	44	50	26
25-44	45	50	36	46
45+	10	60	11	54
not stated	4	50	3	40
Total	100	49	100	37
Number	2,257		26,407	

[a] Did not have a job in the six months before starting their TAFE course (that is, were either unemployed or not in the labour force).

[b] Employed and unemployed in May 1999. Excludes graduates not in the labour force.

[c] Broader definition than Table 1 and includes courses from three fields of study: Computer sciences, information systems (0902); Business/administration data processing (040205); and Electronic engineering (050206).

- in the other major age group, those ages 25-44 years, TAFE IT graduates also have a higher unemployment rate than all TAFE graduates with no pre-course work history, although the difference is less than in the under 25 year age group (50 per cent versus 46 per cent)

One of the main contributors to the less successful overall labour-market outcomes of the IT graduates is that the IT graduates aged 15-24 years had markedly less success in finding work than all 15-24 year old TAFE graduates. The better performance of the latter group, combined with the very large relative size of this group kept down the unemployment rate for TAFE graduates overall.

Although the difference in unemployment rates of the 25-44 year olds is not as marked as that of the 15-24 year olds, the relatively larger size of the IT graduate group aged 25-44 also contributes to the overall difference.[4]

In terms of employment outcomes of TAFE IT graduates, the key outcomes to be explained are:

- the much higher rates of post-course unemployment among the IT graduates aged 15-24 with no pre-course work history relative to all TAFE graduates with this same background; and
- the particularly high unemployment rates in the 25-44 year age group of IT graduates (50 per cent).

CHARACTERISTICS OF UNEMPLOYED TAFE IT GRADUATES WITH NO PRE-COURSE WORK HISTORY

The TAFE *Student Outcomes Survey* provides information on some characteristics of this group (shown in Table 3).

Compared to the national TAFE average, TAFE IT graduates with no pre-course work history and who were unemployed after completing their TAFE course were much more likely to be male (69 per cent versus 31 per cent) and slightly more likely to be NESB and to have reported that they had a disability.

But these unemployed IT graduates also appear to be *more* highly qualified in terms of their educational profile: they

Table 3: TAFE graduates not working pre-course [a] and unemployed post course in May 1999; selected characteristics (estimates), per cent

Characteristics	IT graduates [b] n = 1,137	All TAFE graduates n = 10,248	Difference
Sex			
Male	69	39	30
Female	31	61	-30
Region			
Capital cities	60	59	1
All other regions	40	41	-1
Equity groups			
Non-English Speaking Background (NESB)	47	44	3
Disability[c]	12	8	4
Educational profile			
Before starting TAFE course -			
Completed year 12 or equivalent	65	52	13
Had post-secondary qualifications [d]	64	49	15
Since completing TAFE course -			
Enrolled in further study [e]	65	53	13

Source: NCVER, *Student Outcomes Survey*, *1999*, (unpublished weighted data).

[a] Did not have a job in the six months before starting their TAFE course (that is, were either unemployed or not in the labour force).

[b] From three fields of study: Computer sciences, information systems (0902); Business/administration data processing (040205); and Electronic engineering (050206).

[c] Respondents considered they have a 'permanent and significant disability' (self reported)

[d] Includes Bachelor degree or higher, and other post-school educational qualification.

[e] Any course leading to educational/trade qualification. Includes cancelled or respondent withdrew.

are more likely to have completed year 12 at school (65 per cent versus 52 per cent), to have already acquired a post secondary educational qualification before they started their TAFE course (64 per cent versus 49 per cent), and to have enrolled in further study since completing their TAFE course (65 per cent versus 53 per cent). This suggests that their level of formal education is not the reason for their lack of success in the IT job market.

COMMENT

This brief analysis can only suggest tentative conclusions. The main ones are first that there needs to be much greater priority given to providing practical industry experience as part of TAFE IT programs, to improve employment outcomes. Second, TAFE and the IT industry should adopt a cautious approach to promoting expan-sion of TAFE IT training to those with no previous work history, especially the under 25 age group but also those aged 25-44 years, until current problems are resolved.

TAFE IT graduates aged 15-24 (and not working before their course) had a post-course unemployment rate of 44 per

cent, much higher than the post-course unemployment rate for all TAFE graduates under 25 and with this same background (26 per cent). TAFE IT graduates aged 25-44 (and not working before their course) also had a higher unemployment rate than all TAFE graduates with that background (50 per cent versus 46 per cent).

On the face of it, these are puzzling findings given the claims of strong and growing demand for IT skills at all levels. In May 2001, the IT & T industry released findings of a major survey of IT & T skills needs over 2000 to 2002. This concluded that while there was 'no apparent shortfall for VET qualifications' (unlike the outlook for university-level graduates), the IT skills mismatch was such that:

> '….in the short term, the IT & T industry and user industries will have to employ people with a lower level of skills than they would prefer if positions are to be filled. For example, employers may need to fill positions for which they prefer a university graduate with those who hold VET, commercial or industry qualifications'.[5]

The findings in this present report suggest that employers in the IT-skills labour market demand more experience (or higher initial productivity standards) than employers generally, and that inexperienced TAFE IT graduates are not equipped for competing in this market. The fact that those over age 25 also have trouble in this job market suggests that it is specifically IT experience rather than just work experience generally that employers look for. This also appears to be borne out by the IT & T skills survey cited above which found that 'lack of experience is the main barrier to filling vacant positions'.

TAFE has been trying to include more practical industry experience and work placements in its IT training programs but has been somewhat frustrated, according to the 2001 SACES study. Setting up these work experience components is time-consuming for TAFE instructors, the work is often unremunerated and most importantly, TAFE has reportedly found it difficult to attract enough employers willing to become involved and provide this industry experience training.[6]

The need for TAFE IT programs to provide more practical experience components seems clear. But a more concerted effort and more incentives are needed to increase the number of participating employers offering work experience of real value to students lacking experience.

One option for achieving this on the scale needed is for the Federal government to encourage or require employers benefiting from Australia's liberal immigration rules on temporary skilled labour to help provide more practical work experience opportunities for TAFE IT students and graduates.

Currently around 19,000 visas are issued each year for skilled foreign labour to work for up to four years in Australian-based businesses under Australia's skilled temporary migration program (the 457 visa program). Australia's IT & T industry recognizes that it is one of the most important beneficiaries of this program which has been designed largely around its needs. Around 25 per cent of all skilled workers (under the 457 visa program) are computer professionals or other skilled IT workers approved to work in Australia.

Under the current temporary skilled migration arrangements employers who are approved to sponsor foreign workers to Australia are not required to enter into

undertakings to employ and train Australians in return for sponsorship approval, although they are meant to have a satisfactory training record or commitment to training.

But it would surely be a most appropriate use of these migration arrangements to secure greater industry commitment to providing more 'entry level' work experience places to TAFE IT students, in return for sponsorship approval. It would address a real and demonstrated training need (identified by industry) that only industry can provide; employers approved for migration sponsorship should be reputable and 'best practice' employers; and it is a legitimate, fair and not particularly onerous commitment for these employers to be asked to make.

The mechanism for achieving this would probably be a negotiated agreement between the Federal government and the IT & T industry, in conjunction with State TAFE and VET authorities. At the Federal level, the Departments normally involved in negotiating agreements of this kind are Immigration and Multicultural Affairs (DIMA) and Employment, Workplace Relations and Small Business (DEWRSB). The Federal Department of Education, Training and Youth Affairs (DETYA) has a major role in national IT skills initiatives and would also need to be closely involved.

The work experience issue needs immediate and focused attention, but the reasons for the relatively poorer employment outcomes for TAFE IT graduates need to be fully understood and addressed. Until then, TAFE IT courses should be promoted with great care to those under age 25 with no work experience and indeed all people not already working in IT before starting their TAFE course. It should be a priority to ensure potential course entrants are better informed about their job prospects, not least because TAFE IT graduates themselves have rated 'the information available about jobs and careers' as below average.[7]

The issue is important because there is very strong demand for TAFE IT courses. According to the SACES study for DETYA, there were over 9,000 qualified persons who wanted to enroll in TAFE IT courses[8] in 2000 Australia-wide but could not be accommodated; and this unmet demand is likely to be weighted towards the more advanced courses such as Diplomas and Advanced Diplomas. As well, a major element in the push to address IT skills shortages at all levels is to encourage more females into IT training including TAFE courses. The findings in this note suggest that if more women with no previous work history (both young and mature age) are encouraged into TAFE IT courses, then the results could be disappointing for them.

There are relatively more TAFE IT graduates going onto further study but that should not by itself mean relatively poorer employment outcomes for the IT graduates. Combining work and further study is standard practice for TAFE graduates and over half of employed IT graduates are also enrolled in further study, as would be expected in a fast moving field like IT.

Finally, this note has focused on TAFE IT courses because publically-funded national surveys provide comprehensive data on the employment outcomes of TAFE graduates. There is also a very large amount of IT training delivered by private VET providers in Australia (for sometimes substantial fees) but there is no comparable data on their employment outcomes. It would be important to see whether the employment

outcomes for young people and others with no previous work history are any better from these private IT courses.

References

1. South Australian Centre for Economic Studies, *Education and Skill Formation: Unmet Demand for Information Technology and Telecommunications Courses,* Report prepared for the Department of Education, Training and Youth Affairs, 2001; Kinnaird & Associates Pty Ltd, *TAFE IT Graduates — Employment Outcomes 1999*, Report to the NSW Communications ITAB,2000, B. Kinnaird, Report to the Communications ITAB (NSW) VET data analysis, 1998
2. By the national ITAB responsible for IT training, in 1998.
3. The 1999 *Student Outcomes Survey* allows the larger group of TAFE IT graduates to be identified from all three course area classified as 'IT': Computer science information systems (field of study 0902), Business/administration data processing (040205) and Electronic engineering (060206). As well, the 1999 survey (weighted) data is more statistically robust for this type of analysis, but also has its limitations due to the relatively small numbers involved in IT.
4. This suggests that post-course unemployment rates for these TAFE IT graduates will continue to be higher than the national average for all TAFE graduates, so long as TAFE IT courses attract relatively more 25-44 year olds with no pre-course work history than TAFE courses generally. But the issue is why the IT graduate outcomes are not better than the national average for all TAFE graduates.
5. IT Skills Hub, *Market for Australian IT & T Skills 2000-2002, Executive Summary*, 2001 www.itskillshub.com.au
6. South Australian Centre for Economic Studies, 2001, op. cit.
7. Unpublished data from the 1999 TAFE *Student Outcomes Survey* show TAFE IT graduates with no pre-course work history gave a lower rating to the course feature 'Information about careers and jobs available to you' than did all TAFE graduates with this background (mean score of 5.5 vs 6.4).
8. All courses, including those under 200 hours in length as well as those 200 hours or more.