

Attitudes to ICT careers and study among 17–19 year old Victorians

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Foreword



The State of Victoria has a dynamic, globally focused information and communication technology (ICT) industry that employs more than 60,000 people and accounts for 33 per cent of the Australian industry. Victoria's high quality multicultural and multilingual workforce is a major driver of ICT industry growth and the attraction of international business investment. We produce the largest number of computing IT and engineering graduates of any Australian State and are internationally recognised for the quality of our training institutions.

Making sure we continue to attract the brightest and best people to ICT careers and courses has been one of the priorities of this government, but it is not a task we can undertake alone.

Over the past few years we have focused on ICT careers awareness with the *New Realities* initiative delivered directly to 15–17-year-old secondary students throughout Victoria. *New Realities* came from the Government's *Skills x Knowledge = Growth* policy statement. Ensuring the rapidly expanding and changing ICT industry has the right people with the necessary skills now and into the future will require the collaboration of all the major players.

This is why I'm delighted to be releasing this report. It presents a unique view into the influences and motivations that sway 17–19 year olds as they make decisions about further studies and future careers. In particular it provides unprecedented information about their attitudes to ICT careers and studies.

Some of the key findings in the report are surprising, especially the fact that young people have not been turned away from ICT careers by the recent downturn in the industry. The report also identifies a key

group of Year 12 students, with the right skills, who could be attracted into ICT careers if they had more detailed information about such careers and the courses that lead to them.

The Government specifically commissioned this research to help the industry and education sector to better understand the views of the people they want to encourage into ICT as a career. I hope that this information will be useful to them as they develop new strategies and approaches to attracting people to ICT.

I look forward to working with you all in facing the challenges of this report.

A handwritten signature in black ink that reads "Marsha Thomson". The signature is fluid and cursive, with a long, sweeping underline.

Marsha Thomson
Minister for Information and
Communication Technology
Minister for Small Business

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Background

In the 1990s 'dotcom' boom, the ICT sector emerged as a fast-growing, glamour industry in Australia and around the globe. Possibilities in the sector seemed limitless and IT jobs abounded. The 'tech-wreck' bust that soon followed was accompanied by a myriad of headlines proclaiming the volatile sector would never recover.

Ten years on, the concerns of the 'doomsayers' have not eventuated and ICT remains an exciting, rapidly expanding and vital industry in Australia. The Whitehorse Strategic Group estimates total ICT industry revenues of \$65.7 billion, or 8.7 per cent of GDP (\$755 billion). Victoria is currently Australia's second largest provider of ICT skills and home to 33 per cent of the Australian ICT workforce.

Ensuring that the Victorian ICT industry continues to have a steady supply of quality, skilled and innovative people is one of the key focuses of the State Government's 10-year ICT industry plan, *Growing Tomorrow's Industries Today*.

In recent years, flagging enrolments at university ICT courses suggest that this supply is not assured. While Victorian ICT enrolments increased 12.4 per cent between 2002 and 2003, much of this rise was driven by overseas students. Indeed, education providers argue that Victorian ICT enrolments are actually in decline. Meanwhile, trends in ICT employment highlight the potential for a serious shortage of experience and skills in the next few years. This warning comes as ICT job vacancies are rapidly increasing (up by 60.5 per cent in the year to May 2004).

In 2000, the Victorian Government established an ICT skills policy framework for building Victoria's ICT skills and knowledge base – *skills x knowledge =*

growth. One of the first initiatives flowing from this policy was a study into young people's attitudes to technology skills. Released early in 2001, *Reality Bytes* revealed that young people thought learning ICT skills would hinder, rather than help, their career prospects. It also revealed strong negative stereotypes associated with ICT, especially among girls.

In response to this research, the Government's *New Realities* ICT career awareness campaign was launched to persuade secondary students, in Years 9 and 10, that technology skills could increase rather than decrease career options in almost all fields of employment.

Following the initial *New Realities* campaign phase in 2001–02, independent research found increasingly positive attitudes toward IT skills. A substantial 79 per cent of students believed IT skills would be useful in careers across a wide range of industries. However, the negative stereotype of ICT being nerdy, boring and only for men remained and students were still confused about the type of ICT jobs available. Girls were far less likely than boys to consider an ICT career.

In 2003, Phase 2 of the *New Realities* campaign sought to increase awareness about ICT jobs and their training pathways. This phase focused on girls in Years 9 and 10, together with the parents of all students in this age group, who were seen to have demonstrable influence on career choice.

An evaluation of the 2003 *New Realities* campaign showed that, while greater awareness of ICT careers had been achieved, this was unlikely to influence the eventual career choices of students. It appeared from the research that students in Years 9 and 10 were simply

If you are qualified in IT you can work in just about any industry there is.

research participant

unwilling or unready to commit to a particular career direction. The negative ICT stereotype remained entrenched especially among young girls. Following this evaluation, the Government concluded that its focus needed to shift to young people closer to making career or study choices and that more work needed to be done to understand their attitudes to ICT careers.

Independent research was commissioned in June 2004 to conduct a comprehensive survey of attitudes to ICT careers among current and recently graduated Year 12 students, aged 17–19. This report summarises the findings from that study.

Key findings

This report summarises the results of research into the attitudes of 17–19 year olds to ICT careers and study. This group included a representative sample of current Year 12 students and those who graduated from Year 12 in 2003.

The key findings have provided a valuable insight into what motivates young people when planning for their future. Conversely, it also provides an insight into the key inhibitors to a career and study in ICT. The following results reflect the latest attitudes of young people in these key areas.

Attitudes to ICT careers and the ICT industry

In general, most respondents spoke positively about the ICT industry. Young women, however, projected negative perceptions about ICT careers. Findings include:

- > 86 per cent agreed that 'specialising in ICT opens windows to careers in many types of industries or businesses'
- > 81 per cent agreed that 'there are a wide variety of ICT careers to choose from'
- > 77 per cent agreed/strongly agreed that there were 'lots of job opportunities', 13 per cent were neutral, 8 per cent disagreed and

2 per cent strongly disagreed. This indicates that the majority of young people are not focusing on any downturn or plateauing in the ICT industry

- > 68 per cent agreed that they didn't know enough about the types of ICT jobs available;
- > 59 per cent agreed that 'an ICT career means sitting in front of a computer all day'
- > 51 per cent agreed that 'an ICT career would be very boring'
- > in general, fun, security, variety and interaction with others rated as the most important aspects of any career to this group, while young women placed the greatest emphasis on creativity, human interaction and job security
- > of those interested in ICT, aspects such as innovation and invention, money, being your own boss, and upward career opportunities were of importance, whereas those less interested in ICT were motivated by helping others, travel and personal interaction
- > only 12 per cent believed they had a clear understanding about ICT career opportunities, 57 per cent had some understanding and 30 per cent had no understanding at all

Drivers at a glance

Overall, the research revealed positive attitudes to ICT careers. The young people surveyed believed that ICT careers offer the ability to earn good money and that it's a growing industry with many jobs. They think it would be exciting to be involved with advanced technology in a stimulating industry that is always changing. Of the participants, 86 per cent agreed that, 'Specialising in IT opens windows to careers in many types of industries or businesses' and 85 per cent of Year 12 students were planning to do further education. Eighty-one per cent agreed that, 'There are a wide variety of IT careers to choose from' and 77 per cent agreed that, 'There are a lot of job opportunities in IT.'

- > the single greatest inhibitor to an interest in an ICT career is the lack of knowledge about the types of jobs available
- > when questioned about the level of interest in an ICT career, 10 per cent had a strong interest (3 per cent were female), 40 per cent had some interest and 50 per cent had no interest at all
- > 60 per cent of those who studied ICT at school expressed some interest in an ICT career, compared to 29 per cent of those who did not.

Attitudes to ICT post-compulsory study

- > 85 per cent of students in Year 12 were planning tertiary education and a clear majority of those who had completed Year 12 were studying (41 per cent at university and 28 per cent at TAFE, etc.).
- > When asked about their interest in studying ICT at a tertiary level, 7 per cent revealed a strong interest, 34 per cent have some interest, 55 per cent have no real interest, and 4 per cent were already studying ICT.
- > 72 per cent agreed that they 'didn't know very much about ICT courses at university or other colleges'.

Attitudes to ICT in secondary school

The qualitative research suggests that how ICT is taught at school has had a negative impact on young people's image of ICT. Findings include:

- > Close to 40 per cent rated ICT classes as 'excellent' or 'very good' and a further 34 per cent as 'good'. Some 27 per cent rated their classes as 'fair' or 'poor'.
- > 54 per cent agreed 'ICT subjects taught at school do not inspire you to consider a career in ICT'

Barriers at a glance

A lack of knowledge about the different types of ICT jobs and courses available presents the greatest barrier to a career in the area. The age group involved in the research was not sure where qualifications in ICT would take it. A perception also existed that ICT careers were boring and involved sitting in front of a computer all day without human interaction – a particular turn-off for young women. The other main barrier related to how ICT was taught in schools and the limited subject choice available.

- > 51 per cent agreed 'the subjects at school do not inspire you to continue further ICT study'
- > 55 per cent agreed that 'there is not enough ICT subject choice'
- > 55 per cent agreed that 'IT subjects are boring'
- > 58 per cent agreed that the teachers who teach ICT are 'highly qualified to do so' and 28 per cent disagreed with this statement
- > maths was the most popular subject because it was something that was important 'for the future'.

Influences in the decision-making process

- > In order of the level of influence: word of mouth, parents, teachers, careers advisers, friends, TAFE and university open days, careers expos, and the VTAC guide.

Ideas on ICT careers promotion to young people

When asked about the best methods to promote ICT careers to young people:

- > 94 per cent considered work placements or job experience in an ICT company would be effective
- > 90 per cent considered schools visits and information sessions by young people who have been successful in ICT would be effective

- > 90 per cent considered competitions sponsored by ICT companies to encourage innovation and technology in school or universities would be effective.

Moving forward

The research findings in this report identify specific areas in which the ICT industry and education sectors can work in partnership – supported by government – to provide targeted information about ICT careers and courses to young people.

Findings in detail

1. Career interest and understanding

We tend to only see the stereotyped worker sitting at a computer. I would like to see what other career paths there are as I am sure there are some very interesting ones...

research participant

The research clearly shows the relationship between level of interest in an ICT career and level of understanding of ICT career opportunities.

Key groups

Based on perceptions of, and attitudes toward ICT careers, interviewees were categorised into five groups:

- > ICT prospects
- > OK – but not for me
- > Interested but unaware
- > No strong views
- > No chance.

The **ICT prospects** (23 per cent) had the strongest interest in an ICT career. Their attitudes revealed positive perceptions of an ICT career – particularly in terms of the potential to gain work in a wide variety of industries. Close to 30 per cent described themselves as having a clear understanding of ICT career options.

They were likely to be male and to have attended a government school where they studied ICT.

ICT prospects were looking for a career at the leading edge of innovation and invention. They would like a secure job with the chance to earn good money and opportunities to be creative.

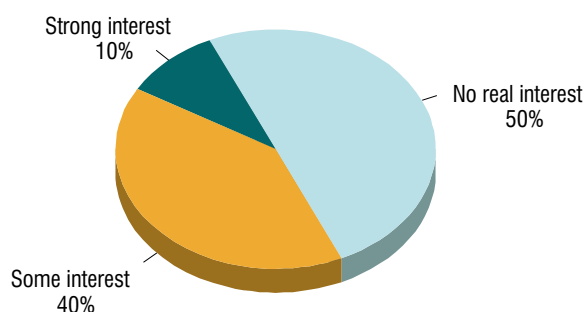
Members of this group clearly have the highest potential to take up an ICT career. Indeed, 19 per cent (versus 6 per cent overall) spontaneously nominated ICT as their likely career path.

The **Interested but unaware** group represent 18 per cent of participants. These were the next best prospects for future ICT workers.

A high 60 per cent showed at least some interest in ICT occupations. While their attitudes towards an ICT career were almost as positive as the **ICT prospects**, they were substantially more likely to believe that they didn't know enough about ICT jobs and careers and express concern that it was hard to find a job in the area.

Chart 1. Level of interest in an IT career

Q. How much interest do you have in a career in IT? Do you have...?



Interested but unaware people were likely to be working; could be male or female; and were a little more likely than average to have studied ICT at school. Almost 33 per cent of this group lived in non-metropolitan areas.

Providing members of this group with greater information about the benefits of ICT training and the range of career paths available could prove extremely fruitful – particularly given they have the right educational background, and had studied maths, science, ICT or design/graphics.

In the **No strong views** group, 45 per cent of participants expressed some interest in an ICT career – but their attitudes revealed little enthusiasm for such a move. For example, they were less likely than average to believe that an ICT career opens up many job opportunities. On the other hand, they rarely had strong negative attitudes to the industry (although 30 per cent see ICT as boring). This group were most likely to be at university and to live in Melbourne.

Table 1. Profile of key groups

Proportion who agree strongly	Total %	IT prospects %	Interested but unaware %	No strong views %	OK – but not for me %	No way %
	Male	51	68	53	48	41
Female	49	32	47	52	59	56
Still at school	54	56	53	48	55	61
At uni or other tertiary	34	30	29	41	34	37
At work/looking for work	12	14	18	11	9	2
Private school	39	32	42	41	42	56
Government school	61	68	58	59	58	44
Studied IT	65	85	71	65	53	46
Did not study IT	35	15	29	35	47	54
Metro	81	82	68	92	82	80
Non-metro	19	18	32	8	18	20
Clearly understand IT careers	12	27	10	13	4	5
Some understanding	58	66	56	63	60	29
No understanding	30	8	35	24	36	66

Chart 2. Perceived level of understanding

Q. Overall, how well do you feel you understand about the career opportunities in IT in Australia?

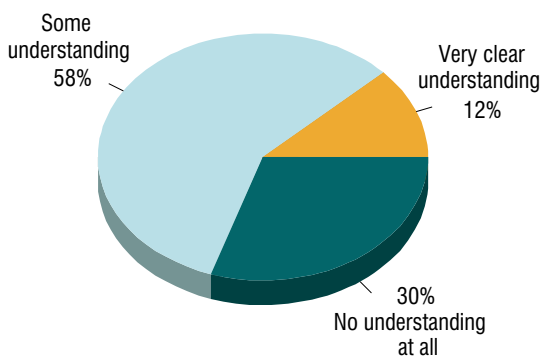
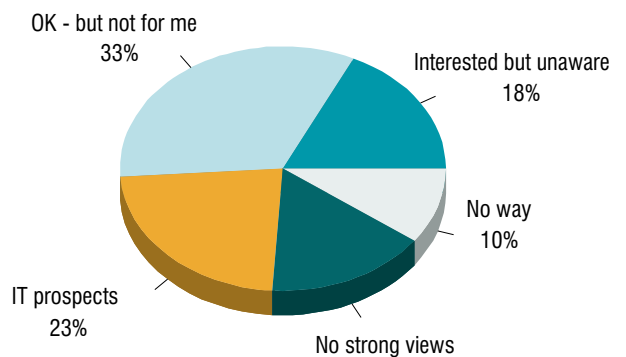


Chart 3. The segments



Findings in detail

1. Career interest versus understanding

Table 2. Attitudes to an IT career by gender

Proportion who agree strongly	Total %	Male %	Female %
Specialising in IT opens windows to careers in many types of industries or businesses	40	40	40
There are a wide variety of IT careers to choose from	40	47	33
There are a lot of job opportunities in IT	38	41	35
If you are qualified in IT you can work in just about any industry there is	17	16	18
I don't know enough about the jobs in IT	28	21	35
An IT career means sitting in front of a computer all day	22	17	26
A career in IT would be very boring	22	19	24
It's hard to find out about what an IT career can offer	11	10	13
To work in IT you need to be much brighter than average	6	7	5
There is no prestige associated with working in IT	6	6	5
There are too few opportunities for a career in IT in this country	6	5	6
Only computer 'geeks' or 'nerds' work in IT	3	4	2

The **OK but not for me** segment held positive attitudes towards ICT careers and clearly recognised that such a career opens up opportunities in many industries. However, such a career is not for them as only 30 per cent showed any interest. Members of this group were frequently female and it is highly likely they didn't study ICT at school.

The final group was the **No way** segment. These people harboured extremely negative views of careers in ICT, believing the industry to be boring and populated by 'computer geeks'. Very few admitted to an interest in an ICT career. The **No way** group were likely to be female and to have attended a non-government school.

Table 3. Attitudes of key groups

Proportion who agree strongly	IT prospects %	Interested but unaware %	No strong views %	OK – but not for me %	No way %
Specialising in IT opens windows to careers in many types of industries or businesses	48	51	14	51	2
There are a wide variety of IT careers to choose from	61	47	8	40	29
There are a lot of job opportunities in IT	46	40	5	53	20
I don't know enough about the jobs in IT	3	46	19	33	49
An IT career means sitting in front of a computer all day	4	13	27	29	44
It's hard to find out about what an IT career can offer	2	26	14	6	17
Only computer 'geeks' or 'nerds' work in IT	2	3	0	1	17
If you are qualified in IT you can work in just about any industry there is	23	24	2	20	10
There is no prestige associated with working in IT	3	3	10	5	12
There are too few opportunities for a career in IT in this country	3	11	11	3	2
A career in IT would be very boring	9	6	30	27	51
To work in IT you need to be much brighter than average	3	15	3	5	5

Findings in detail

2. ICT at school

The qualitative study made it clear that the closer students get to the end of their schooling, the more their choice of subjects is influenced by thoughts about the future. About 65 per cent reported that they studied ICT at school, with males (71 per cent) more likely to have done so than females (59 per cent).

All of those expressing a strong interest in an ICT career had studied the subject at school and 74 per cent of those with some interest had done so. Of those with no interest in ICT, 51 per cent had studied the subject.

Reasons for not studying ICT related to **personal preference** as opposed to **opportunity**. A simple lack of interest (53 per cent) was the main reason.

The classroom experience

All respondents (whether they studied ICT or not) were asked how well they felt ICT was taught at their school.

You might not know what you want to do...so you choose subjects that keep your doors open.

research participant

Males were more likely to be critical of ICT education at school. Those still at school were a little more positive than those who had left.

Those who studied ICT had similar views to those who had not – suggesting that the **quality** of ICT education is not a major factor in the decision not to study the subject.

ICT teachers

Those rating the quality of ICT education as 'good' or better, often cited the quality of the teachers as the reason.

Table 5. IT education in detail

	Excellent/ very good %	Good %	Fair/ Poor %
Total	39	34	27
Male	37	29	34
Female	40	40	20
Still at school	43	32	25
At uni or other tertiary	33	36	31
At work/looking for work	35	35	30
Private school	38	33	29
Government school	39	35	26
Studied IT	39	32	29
Did not study IT	38	37	25
IT prospects	45	27	28
Interested but unaware	39	43	18
No strong views	35	33	32
OK - but not for me	39	38	23
No way	27	22	51

Table 4. Was IT studied at school?

Q. I'd like you to think about how IT is taught at school. Particularly in Years 10, 11 and 12. Firstly, did you personally study IT at school?

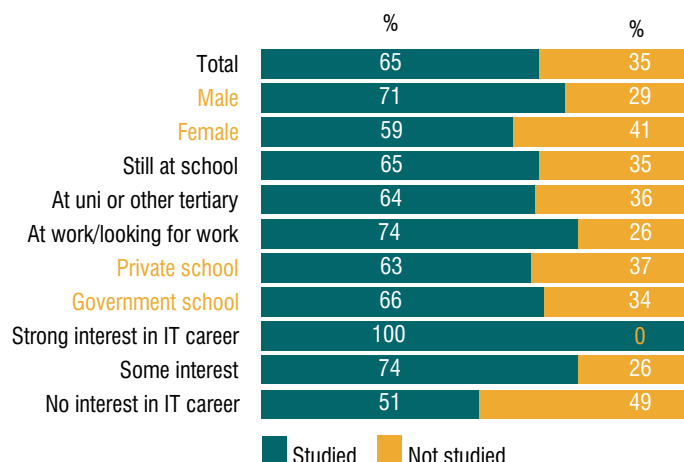
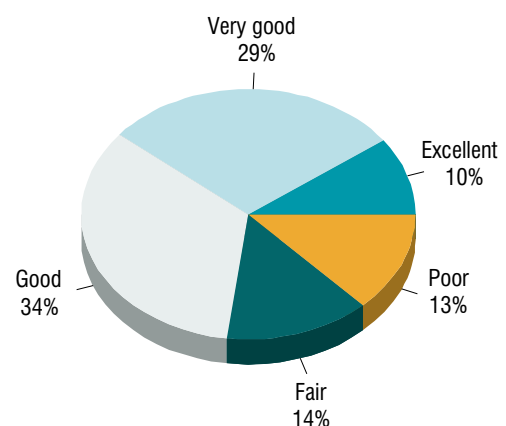


Chart 4. Perceptions of IT education at school

Q. Overall, how well would you say IT was taught at your school? Would you say the standard of education in IT was...?



Findings in detail

2. ICT at school

IT at school just suddenly got a lot harder and a lot more boring. It went from being an all right subject to just sitting there plugging in data or codes. It was so boring I just stopped doing it the first chance I got.

research participant

Those rating as 'fair' or 'poor' also tended to rate the teaching staff as the reason. Twenty-five per cent felt that the teachers could or should have done a better job. Close to 20 per cent expressed a perception that the teachers were not qualified.

Attitudes

Respondents were asked the extent to which they agreed or disagreed with a series of 12 statements on ICT teaching at school.

While 58 per cent agreed that 'teachers who teach ICT are highly qualified to do so', 28 per cent disagreed – including 9 per cent who disagreed strongly.

There is majority agreement that 'ICT subjects at school do not inspire you to consider a career in ICT' (54 per cent) and that 'ICT subjects at school do not inspire you to continue further ICT study' (51 per cent).

Fifty-five per cent agreed that ICT subjects were boring and that there weren't enough ICT subjects to choose from (55 per cent).

Those who had received some ICT education were more likely than average to believe that learning ICT at school did nothing to equip them for a good university place (28 per cent) and that no one at their school provided information on the benefits of ICT training or careers (24 per cent).

Table 4. Attitudes to IT teaching at school

Q. Still thinking about the ways that IT is taught at your school, express how you feel.

Proportion who agree strongly	Agree	Agree	Neutral	Disagree	Disagree
	strongly	somewhat		somewhat	strongly
	%	%	%	%	%
The teachers who teach IT are highly qualified to do so	28	30	14	19	9
The IT subjects at school do not inspire you to consider a career in IT	25	29	10	23	13
The IT subjects at school do not inspire you to continue further IT study	23	28	12	24	13
The IT subjects at school are boring	22	33	11	22	12
There isn't enough subject choice in the IT field	21	34	9	23	13
The standard of teaching IT subjects was as good as more traditional subjects	19	29	14	26	12
IT is a very low priority to our school	9	22	13	33	23
Learning IT at school does nothing to equip you for a good university place	8	20	7	42	23
No one at our school provided the benefits of IT training or careers	7	17	11	39	26
Learning IT at school does nothing to equip you for an interesting career	5	18	10	45	22
Our school does not have the resources, such as computers, to teach IT properly	4	8	1	28	59
The IT subjects at school are far too difficult	3	9	10	41	37

IT doesn't matter about anything like money or success. If you don't like what you are doing and don't enjoy it, you won't be successful or have lots of money anyway. It's better to enjoy what you do and be happy and the rest will follow.

research participant

Table 7. Attitudes to IT teaching at school by experience

Proportion who agree	Total %	Studied IT %	Did not study IT %
The teachers who teach IT are highly qualified to do so	58	58	59
There isn't enough subject choice in the IT field	55	56	52
The IT subjects at school are boring	54	50	61
The IT subjects at school do not inspire you to consider a career in IT	54	50	59
The IT subjects at school do not inspire you to continue further IT study	51	50	53
The standard of teaching IT subjects was as good as more traditional subjects	48	49	46
IT is a very low priority to our school	31	29	33
Learning IT at school does nothing to equip you for a good university place	28	30	22
No one at our school provided the benefits of IT training or careers	24	26	19
Learning IT at school does nothing to equip you for an interesting career	23	22	24
Our school does not have the resources, such as computers, to teach IT properly	12	10	14
The IT subjects at school are far too difficult	12	14	9

Table 8. Attitudes to IT teaching at school by gender

Proportion who agree	Total %	Male %	Female %
The teachers who teach IT are highly qualified to do so	58	56	60
There isn't enough subject choice in the IT field	55	57	52
The IT subjects at school are boring	54	50	59
The IT subjects at school do not inspire you to consider a career in IT	54	47	60
The IT subjects at school do not inspire you to continue further IT study	51	43	59
The standard of teaching IT subjects was as good as more traditional subjects	48	44	52
IT is a very low priority to our school	31	27	35
Learning IT at school does nothing to equip you for a good university place	28	33	22
No one at our school provided the benefits of IT training or careers	24	20	27
Learning IT at school does nothing to equip you for an interesting career	23	22	24
Our school does not have the resources, such as computers, to teach IT properly	12	10	13
The IT subjects at school are far too difficult	12	11	13

Table 9. Reasons for a positive percentage

Q. Why do you feel that way?

All other answers 3% or less. Base : Rate as good or better.



Table 10. Reasons for a negative percentage

Q. Why do you feel that way?

All other answers 3% or less. Base : Rate as good or better.



Findings in detail

2. ICT at school

Females tended to hold more negative views than males. Private school students are slightly more negative about their ICT education than those from government schools.

Career advice at school

While 53 per cent felt that the information provided about ICT careers was adequate or more than adequate, a sizeable proportion felt it to be less than adequate.

Reasons for rating ICT career information as below adequate included insufficient promotion of the material (32 per cent), 'didn't get any info' (30 per cent) and 'didn't talk about ICT as a career' (17 per cent).

Looking ahead

A clear majority (72 per cent) of Year 12 students intended to go to university. A further 13 per cent planned to continue their education elsewhere. Fewer than one in 10 saw a job as their next step.

ICT study intentions

Only 6 per cent of the Year 12 students spontaneously nominated ICT as the course they intended to study.

Thirteen per cent of males intending to go on to tertiary education nominated ICT as a course they wanted to study – but no females.

Those who went to government schools demonstrated a stronger interest, as did those who intended to pursue their tertiary education at a place other than university.

Only 9 per cent of those who studied ICT at school (but none who did not) indicated an interest in continuing with ICT studies at a tertiary level.

That said, IT rated higher than medicine and science. The second most common response was 'don't know'.

Chart 5. Perceptions of IT career information at school

Q. Still thinking about IT at school, would you say the information you were given on IT as a career choice was:

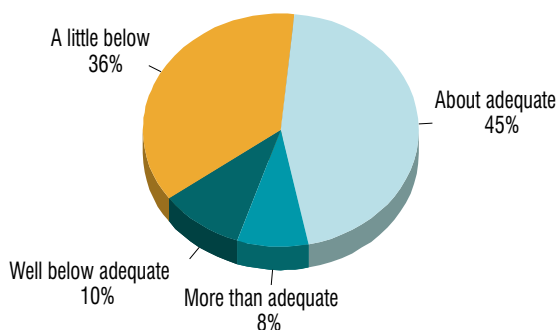
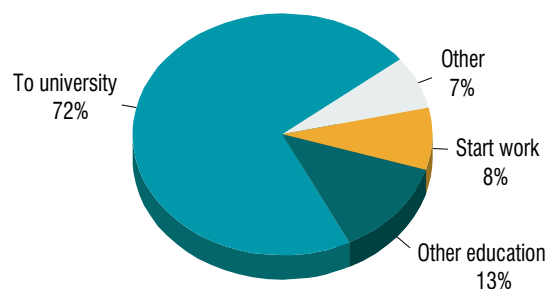


Chart 6. Year 12s – future intentions

Q. When you complete Year 12, where are you planning to go:

Base : In year 12 (217)



Subjects at school

When asked about subjects at school, maths ranked at the top because it was:

- > a pre-requisite for some courses
- > some students find maths easy, and can get good marks without too much effort or study
- > some maths subjects, particularly maths methods, are things that a variety of courses and future jobs require you to have – you have to do them to keep as many doors open as possible for the future.

Few discussed the subject as being 'enjoyable' – rather, it was something that was important 'for the future'.

You look at your grandparents sometimes and they have no idea how to use a computer. They are missing out on so much and I just look at them and think 'I don't want to be like that'. You want to make sure that you are up to date and know how to work technology. It's going to be so important in the future.

research participant

Table 11. Proportion who mentioned IT in detail

Base : Intend to study (154). All other answers 1% or less.

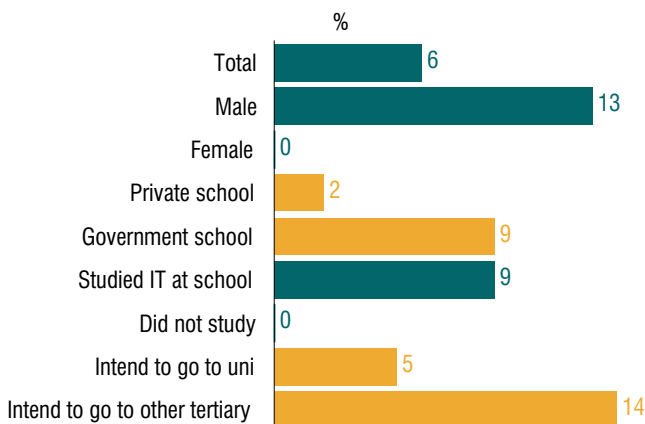
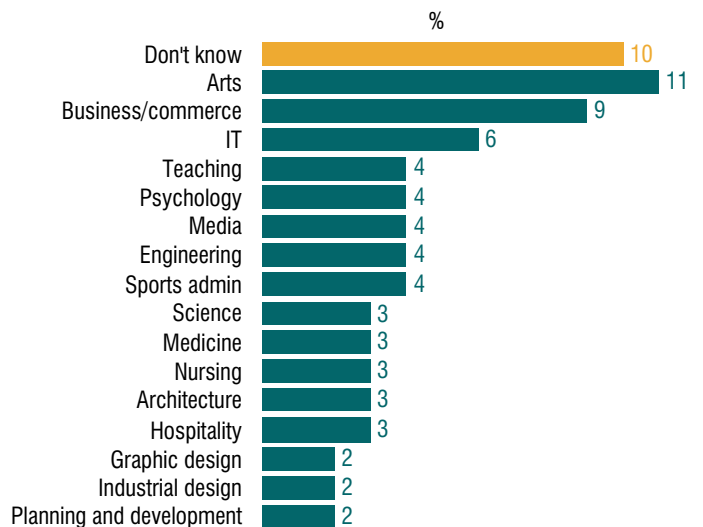


Table 12. Year 12s – study intentions

Q. What course do you intend to study?

Base : Intend to study (154). All other answers 1% or less.



Findings in detail

3. Year 12 graduates

The majority of those interviewed post Year 12 have gone on to university (41 per cent) or are studying at some other education provider (28 per cent). Just under 25 per cent were working.

Among those currently studying, 2 per cent were doing an ICT course at university and 4 per cent were studying ICT elsewhere.

Even at university, many young people were leaving their options open about future careers. 'An interest in the field' was the main reason given for selecting a tertiary course (55 per cent), followed by 'good career opportunities' (18 per cent), but many wished to study something they enjoyed until they were ready to decide upon a career path.

Interest in studying ICT

A total of 11 per cent of the VCE graduates had a strong interest in studying ICT (7 per cent), or were already doing so

(4 per cent). An additional 34 per cent had some interest in doing so in the future.

Males currently at a tertiary institution, who studied ICT at school, all showed an above-average enthusiasm for studying the subject at university or elsewhere.

Members of the **ICT prospect** category were also likely to express a strong interest in furthering their ICT studies.

The main reason given for not wishing to study ICT was a simple lack of interest (53 per cent) - although the stigma of it being boring (16 per cent) was also a factor.

Attitudes to tertiary ICT courses

Challenges to the post-compulsory education sector appear to lie in promoting the range and quality of courses available. As the tables opposite show, there was widespread agreement with the statement:

Chart 7. Post year 12s - current status

Q. What are you currently doing?

Base : Post year 12 (196)

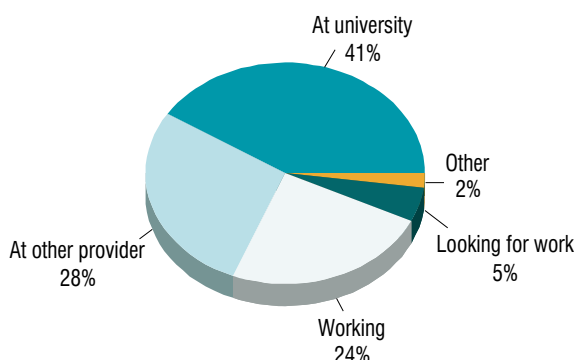
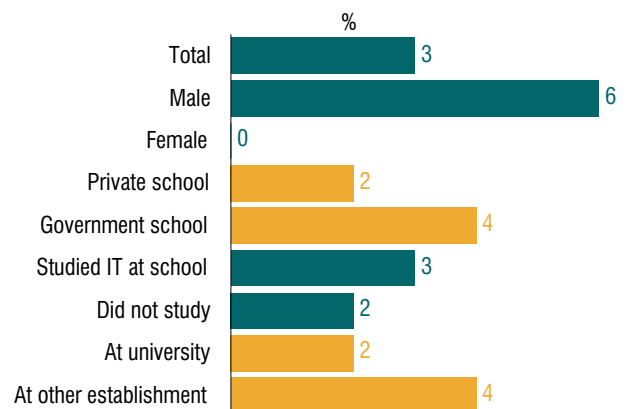


Table 13. Proportion who are studying IT in detail

Base : Currently studying (154)



'I don't know very much about ICT courses at university or other colleges.'

In addition, 25 per cent did not feel able to respond to:

'Our universities and colleges run excellent ICT courses.'

Views were polarised on the issue of whether ICT tertiary courses would be boring – 32 per cent agreed that they

would be and 39 per cent disagreed; females were more likely to agree.

A substantial 84 per cent disagreed with the statement that:

'Studying ICT at university or college limits your career choice opportunities.'

Table 14. Attitudes to IT tertiary education

	Agree strongly %	Agree somewhat %	Neutral %	Disagree somewhat %	Disagree strongly %	Don't know %
I don't know very much about IT courses at university or other colleges	38	33	5	16	9	0
Our universities and colleges run excellent IT courses	16	38	15	4	2	25
The people I would be studying with if I took an IT course wouldn't be my kind of people at all	12	19	10	33	24	4
IT subjects at university or college are boring	9	23	11	27	12	18
It's hard to find out about IT courses at university or college	8	13	7	44	25	4
It's too difficult to get into a good IT course	5	18	10	37	17	14
IT subjects at university or college are too difficult for most students	2	15	13	47	12	11
Studying IT at university or college limits your career choice opportunities	2	10	4	48	35	1

Table 15. Attitudes to tertiary education by gender

Proportion who agree	Total %	Male %	Female %
I don't know very much about IT courses at university or other colleges	71	62	80
Our universities and colleges run excellent IT courses	54	58	50
The people I would be studying with if I took an IT course wouldn't be my kind of people at all	30	33	27
IT subjects at university or college are boring	32	27	38
It's hard to find out about IT courses at university or college	21	17	26
It's too difficult to get into a good IT course	23	25	21
IT subjects at university or college are too difficult for most students	17	18	16
Studying IT at university or college limits your career choice opportunities	12	13	12

Table 16. Interest in detail

	*Strong interest %	Some interest %	No interest %
Total	11	34	55
Male	19	42	39
Female	3	26	71
Still at school	8	36	56
At uni or other tertiary	17	31	52
At work/looking for work	7	37	56
Private school	11	31	58
Government school	12	36	52
Studied IT at school	15	42	43
Did not study IT at school	4	20	76
Strong interest in IT career	72	28	0
Some interest	8	69	23
No interest in IT career	1	8	91
IT prospects	26	47	27
Interested but unaware	10	46	44
No strong views	8	27	65
OK - but not for me	5	25	69
No way	2	24	76

* includes 'already doing'

Findings in detail

4. Choosing a career

The qualitative research revealed that students consulted a range of information sources before deciding upon a course or career. Word of mouth from friends and family, particularly those who may already have work experience, was critical.

Key considerations

From the qualitative research, a list of influences on career choice was developed. Interviewees were asked

to rate the importance of each aspect on a 10-point scale. Average 'scores' are shown on the second chart on this page.

Two aspects topped the list – **fun** and **security**. On the next level **variety**, **human interaction** and **the opportunity to move up the career ladder** were also of high importance.

The chance to earn good money followed only half way down the hierarchy – along with the opportunity **to help others**.

Males attached somewhat greater importance to outdoor work (although this was still a low priority), and the chance to be their own boss and to innovation/invention.

Females placed greater emphasis on the human side of careers – opportunities to help and interact with others. What is clear is that providing young people with credible information on the factors for career preferences may prove influential during the decision-making process.

Chart 8. Career influences

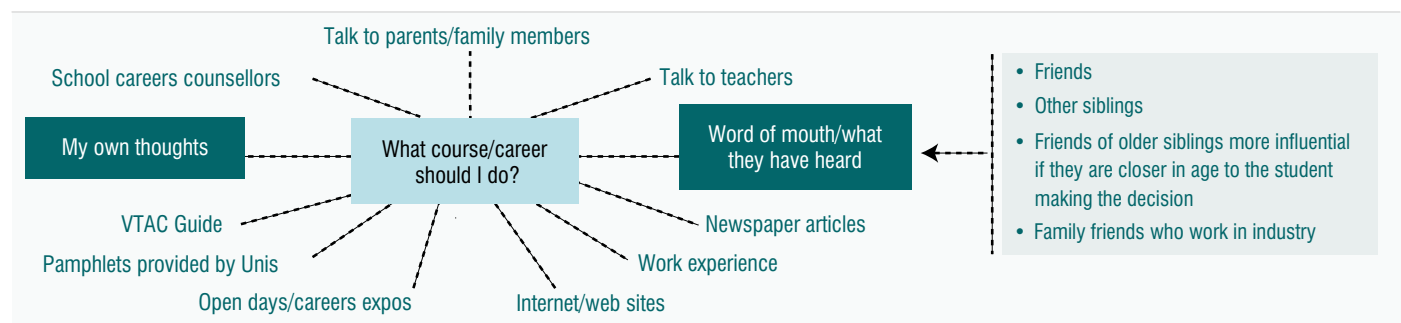


Table 17. Aspects of importance in career choice by gender

Mean score on 10 point scale	Total	Male	Female	Difference
Being able to work outdoors	5.8	6	5.5	0.5
A chance to be your own boss	7	7.2	6.8	0.4
At the leading edge of innovation and invention	6.2	6.4	6	0.4
The chance to earn good money	7.8	7.9	7.7	0.2
A job with low stress levels	7.3	7.4	7.2	0.2
Lots of opportunity to move up the career ladder	8	8	8	0
A job where you can work nine to five	6	6	6	0
A job with lots of travel opportunities	6.9	6.9	7.1	-0.2
A job where you can have a lot of fun	8.7	8.6	8.8	-0.2
A job with plenty of variety	8.1	7.9	8.2	-0.3
A secure job	8.5	8.3	8.7	-0.4
Being able to be creative	7.5	7.3	7.7	-0.4
Where you interact with lots of different people	8.1	7.8	8.4	-0.6
A job where you help others	7.8	7.4	8.3	-0.9

Table 18. Perceptions of an IT career (average rating on 10-point scale)

Q. I'm going to read out the same statements I read out before. This time, please tell me how strongly you believe these statements apply to a career in IT in a range of 1–10 where 10 is the strongest.

At the leading edge of innovation and invention	8.4
The chance to earn good money	8.3
Lots of opportunity to move up the career ladder	7.9
A secure job	7.6
A job where you can work nine to five	7.4
A chance to be your own boss	7.2
Being able to be creative	7.1
A job with plenty of variety	6.5
A job where you help others	6.5
A job with low stress levels	6.4
A job where you can have a lot of fun	6.3
A job with lots of travel opportunities	6.2
Where you interact with lots of different people	6.1
Being able to work outdoors	3.4

Findings in detail

5. Perceptions of IT careers

Positives

A substantial 84 per cent were able to nominate at least one positive aspect of an ICT career. A strong selling point was the chance to 'work with the latest technology', which was mentioned by more than four out of 10 participants.

Perceptions of a growth industry, job opportunities and good pay also emerged.

Those with a strong interest in ICT were more likely to believe that the industry is in a growth phase and, predictably, that ICT represents an interesting career option.

Negatives

The perception of being 'stuck in front of a computer screen all day' is seen as the main downside to an ICT career.

In a similar vein, many see ICT careers as boring, indoor work with minimal human interaction and variety.

Some respondents expressed concern about long hours and the frustration of system crashes.

Interestingly, those with a strong interest in an ICT career were much more likely than average to believe that obtaining work would be difficult.

Chart 9 shows a cross-analysis of the image/importance data.

Aspects in the lower right-hand quadrant represent dimensions which are of high importance but where ICT has a relatively poor image – perceptions the industry may wish to tackle.

Table 19. What is good about an IT career

	Total %	Strong interest %	Some interest %	No interest %
Working with latest technology	41	38	42	41
Growing industry/in demand	16	26	20	11
Job opportunities	15	15	15	15
Well paid	12	8	10	14
Way of the future	8	3	10	7
Interesting	7	23	10	1
A sit down job	7	8	8	5
A secure job	5	8	4	5
Fun	4	5	6	2
Nothing/Don't know	16	5	11	23

Table 20. Attitudes to IT career - the positives

Q. To what extent do you agree or disagree with the following statements about a career in IT.

	Agree strongly %	Agree somewhat %	Neutral %	Disagree somewhat %	Disagree strongly %
Specialising in IT opens windows to careers in many types of industries or businesses	40	46	7	6	1
There are a wide variety of IT careers to choose from	40	41	11	7	1
There are a lot of job opportunities in IT	38	39	13	8	2
If you are qualified in IT you can work in just about any industry there is	17	48	10	17	8

Table 21. Attitudes to IT career - the negatives

	Agree strongly %	Agree somewhat %	Neutral %	Disagree somewhat %	Disagree strongly %
I don't know enough about the jobs in IT	28	40	10	13	9
An IT career means sitting in front of a computer all day	22	37	7	24	10
A career in IT would be very boring	22	29	8	27	14
It's hard to find out about what an IT career can offer	11	32	9	33	15
To work in IT you need to be much brighter than average	6	24	10	45	15
There is no prestige associated with working in IT	6	21	19	38	16
There are too few opportunities for a career in IT in this country	6	18	16	39	21
Only computer 'geeks' or 'nerds' work in IT	3	11	6	34	46

Findings in detail

5. Perceptions of IT careers

Promoting ICT careers

The qualitative phase of the research revealed that the most significant inhibitor to interest in an ICT career was a lack of knowledge about the jobs available or, in more basic terms, an answer to the question, 'If I do an ICT course, where will that lead me?'

Suggestions for increasing an understanding of ICT careers included providing lists of jobs, information on the typical wages and examples of how ICT is used. The most preferred means of communicating this information were work placements and job experience opportunities at ICT companies.

Table 22. Means of promoting an IT career

Q. If the IT industry were to promote careers in IT to young people, how effective would the following means of promotion be?	Extremely effective %	Quite effective %	Not effective %
Work placements or job experience at IT companies	44	50	5
School or uni visits and information sessions by younger people who have been successful in IT	37	53	9
Competitions sponsored by IT companies to encourage innovation and technology in schools or universities	35	55	9
Student visits and information sessions at IT businesses	25	61	14

Table 23. What isn't so good about an IT career

	Total %	Strong interest %	Some interest %	No interest %
Stuck in front of screen all day	22	13	23	23
Boring	17	0	8	27
Stuck indoors	13	13	10	16
Lack of human interaction	13	5	11	16
Not enough variety	9	0	6	13
Hard to get a job	6	18	6	4
Long hours/hard work	5	5	6	4
No interest in computers	5	0	4	6
System crashes/losing info	5	5	9	1
Need to regularly update skills	4	3	6	3
Nothing/Don't know	12	16	16	9

Chart 9. Perceptions of an IT career by level of importance in a career choice

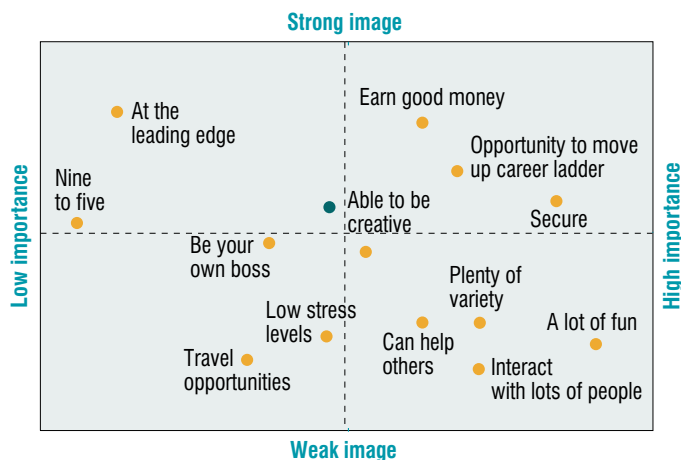


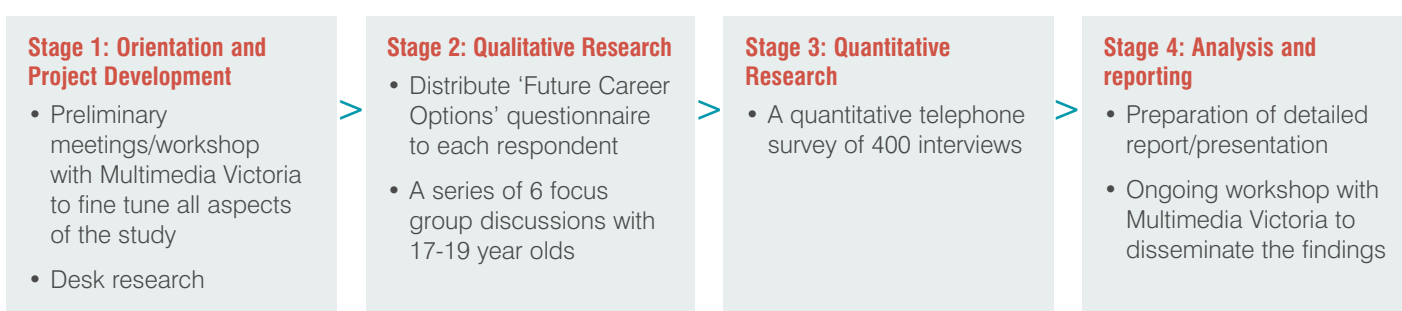
Table 24. Attitudes to an IT career by gender

Proportion who agree strongly	Total %	Male %	Female %
Specialising in IT opens windows to careers in many types of industries or businesses	40	40	40
There are a wide variety of IT careers to choose from	40	47	33
There are a lot of job opportunities in It	38	41	35
If you are qualified in IT you can work in just about any industry there is	17	16	18
I don't know enough about the jobs in IT	28	21	35
An IT career means sitting in front of a computer all day	22	17	26
A career in IT would be very boring	22	19	24
It's hard to find out about what an IT career can offer	11	10	13
To work in IT you need to be much brighter than average	6	7	5
There is no prestige associated with working in IT	6	6	5
There are too few opportunities for a career in IT in this country	6	5	6
Only computer 'geeks' or 'nerds' work in IT	3	4	2

Findings in detail

6. Methodology

Chart 10. Methodology



The research program undertaken by Sweeney Research involved four stages including a qualitative study consisting of six focus group discussions, and a 400-interview quantitative telephone survey.

The 'Future Careers Options' questionnaire (Stage 2) asked people to write about their day-to-day work, study and recreational interests, along with personal goals for the next five years and beyond. The questionnaire also asked about intended careers and the level of interest in working in ICT.

Year 12 students surveyed comprised a mix of private and public school students who would consider or had considered doing an ICT course, and were studying one of more of the following subjects: maths, science, ICT, design/graphics.

The Year 12 graduates comprised a mix of students at tertiary institutions and in the workforce, who were studying one of more of the following subjects: maths, science, ICT, design/graphics.

The Stage 3 telephone survey entailed quotas for education status, gender and location. The four groups were: Males in Year 12; Females in Year 12; Males who completed Year 12 in 2003; and Females who completed Year 12 in 2003. In each group, 80 subjects were from Melbourne and 20 from other Victorian regions. Year 12 graduates were required to be studying or contemplating further studies.

Table 25: Focus group subjects

	Locations
Girls in Year 12	Melbourne
Boys in Year 12	Melbourne
Girls who completed Year 12 in 2003	Melbourne
Boys who completed Year 12 in 2003	Melbourne
Boys/Girls in Year 12	Ballarat
Boys/Girls who completed Year 12 in 2003	Ballarat

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skills x knowledge = growth
(Victorian Government, November 2000)

More information
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