

# **High School Psychology and its Impact on University Psychology Performance: Some Early Data**

**John Reece**

**Discipline of Psychology**

**School of Health Sciences**

# Impetus for This Research

- “Oh, can you study psychology in high school?”
- Well, yes, you can!
- Final year high school psychology is well-established and popular in several Australian states, most notably Victoria and Tasmania.
- In Victoria, 15,000 students study psychology in their final year of high school (Year 12).
- In 2009, Psychology was the third most popular subject for Year 12 students (after English and general maths).
- In Victoria, Psychology is classified as a science, along with physics, chemistry, biology, etc.

# Impetus for This Research

- Why is Psychology so popular:
  - Perceived as an easy science option
  - Popular with girls: two-thirds of enrolled students are girls, the highest proportion for any science subject, by far
  - Intuitively appealing for teenagers
- Poor understanding and awareness of high school psychology among university academics
- Little appreciation of the impact of high school psychology on students' learning experience of university psychology

# The VCE Psychology Program

- The VCE (Victorian Certificate of Education) comprises the last two years of high school, Years 11 and 12.
- Most subjects, Psychology included, are divided into four units of study.
- Most common pathway is to complete Units 1 and 2 in Year 11 and Units 3 and 4 in Year 12.
- Only Units 3 and 4 are externally examined and contribute to the ENTER score, which is the main criterion for university entry.
- Been around since 1991, when the VCE started.

# The VCE Psychology Program

- Assessment consists of school-based assessments (33%) and two externally set and administered exams (66%) made up of multiple choice and short answer questions.
- Exam setting process very rigorous, time consuming.
- Marking is carefully moderated, and performance is analysed in detail.
- **Unit 3:**
  - States of consciousness
  - Visual perception
  - Brain and behaviour
- **Unit 4:**
  - Learning
  - Memory
  - Research methods
- What does that list of topics remind you of?

# The Impact of VCE Psychology on University Psychology

- 15,000 students are completing Year 12 psychology, many are heading for university, many are headed for psychology at university
- At RMIT, 9 out of 10 students enrolled in a standard psychology major degree have completed Year 12 Psychology
- The vast majority of students attending first-year university classes have two years of upper high school psychology under their belts
- They *know* what psychology *is* and what psychology *isn't*
- They have a familiarity with the language and methods of psychology
- They have knowledge of several important theoretical concepts in psychology; for example, classical and operant learning; sensory, short-term and long-term memory; independent groups and repeated measures research designs, etc.

# The Response of Victorian University Psychology Departments to the Impact of VCE Psychology

# The Response of APAC to High School Psychology

# **The Relationship Between High School Psychology Teachers and University Psychology Departments in Victoria**

# Questions...

- Other subjects channel students at university according to their high school experience (e.g., maths and languages). Why not psychology?
- In the spirit of evidence-based practice: Is there any evidence that completing VCE Psychology has some impact on university performance in terms of academic achievement? Are students who completed the VCE program at an advantage at university?
- How do students who completed VCE Psychology perceive their university experience, particularly at first-year? What's their attitudes toward their university experience?
- Do students who did **not** complete the VCE Psychology program perceive themselves to be at a *disadvantage*? How do they see themselves by comparison with their peers who did complete the Year 12 program?

# Related Research

- High school academic achievement is a predictor of university performance
  - Measured by:
    - High School Grade Point Average (GPA)
    - ENTER score
- High school academic achievement predicts university psychology performance
- High school academic achievement predicts university performance in latter years
- Australian study (Roodenrys, 2008)
  - High school academic achievement and:
    - First year university psychology performance ( $r = .47$ )
    - Second year university psychology performance ( $r = .49$ )
    - Third year university psychology performance ( $r = .42$ )

# Related Research

- University performance is influenced by:
  - High school academic achievement
  - Student effort
  - Student motivation
  - Student interest
  - Student opportunity
  - Availability of time and resources
  - Course involvement
  - Non academic activities
  - Prior knowledge of course material

(Roodenrys, 2008; Thompson & Zamboanga, 2003; Woehr & Cavell, 1993; Zamboanga, Padilla-Walker, Hardy, Thompson & Wang, 2007).
- Prior knowledge of psychology
  - University psychology students have prior knowledge of psychology that can predict variance in university psychology exam performance
- Does this prior knowledge of psychology result from participating in a high school psychology course?

# Literature Review

- Are students at an advantage at university if they completed a high school psychology course?
  - Students who have participated in a high school psychology program have
    - Greater advantage on topic covered in high school psychology
    - Higher knowledge about psychology and psychological topics
    - Higher midterm results
    - No advantage on final grades
- However Hardy, Zamboanga, Thompson and Reay (2003) found that having taken a past psychology course is positively and significantly associated to university psychology exam performance
- Mainly US university studies
- Limited Australian studies
- Studies have examined random types of high school psychology programs
- Victoria provides a good case study

Table 5

*Performance Measures for Students Who Had and Had Not Completed VCE Psychology*

	Completed VCE Psychology			Not Completed VCE Psychology		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
ENTER Score	80	78.20	11.43	23	85.38	11.63
Principles of Psychology	56	69.25	8.87	15	69.27	10.24
Foundations of Psychology	56	72.59	8.23	15	72.40	8.02
Research methods in Psychology	40	68.80	8.31	8	74.75	8.12
Developmental Psychology	52	65.79	6.70	13	69.54	7.20
Cognitive Psychology	44	69.11	7.38	12	72.17	9.46
Biological Psychology	43	67.05	8.40	13	71.54	9.38
Social Psychology	37	66.70	7.98	11	67.91	7.83
Philosophy and Methodology of Psychology	31	65.77	10.10	10	67.50	8.92
Psychological Assessment and Individual Differences	34	67.85	9.03	12	71.25	7.64

# Aims

1. To examine the influences of previous academic ability and prior knowledge on university psychology performance
2. To investigate the relationship between high school and university psychology

# Hypotheses

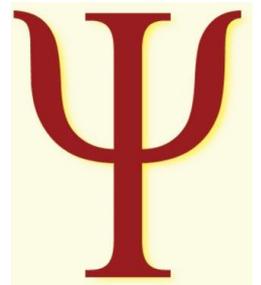
1. A positive relationship between previous academic ability (as measured by overall high school performance, ENTER score) and university psychology exam performance
2. The relationship in hypothesis one will decrease over the course of a student's university career
3. Participating in VCE psychology will influence a student's university psychology exam performance
4. Having studied VCE psychology will be a predictor of university psychology exam performance, over and above previous academic ability.

# Method

- Participants
  - RMIT psychology students
  - First, second, third and fourth year students
- Materials
  - Previous academic ability = overall high school performance measured by ENTER score
  - University psychology performance = measured using students' end of semester exam results, across their university career
  - Self-report questionnaire
  - Focus group discussion
- Procedure
  - Voluntary participation
  - Project information sheets and informed consent forms distributed
  - Confidentiality using code numbers
  - Questionnaire taking 10 minutes

# Results

- Descriptive Statistics
  - Sample size  $n = 117$
  - Completed VCE Psychology = 74%
  - Not completed VCE Psychology = 26%
  - 1<sup>st</sup> year = 24%
  - 2<sup>nd</sup> year = 23%
  - 3<sup>rd</sup> year = 39%
  - 4<sup>th</sup> year = 14%
  - Males = 13%
  - Females = 87%



# Descriptive Survey Results

## Students who have completed VCE psychology

Survey Questions	Means
1. University psychology content is a repetition of high school psychology	4.36
2. High school psychology has made it easier to learn psychological theories and concepts	4.30
3. High school psychology has been helpful at university	4.30
15. High school psychology has taught me to think scientifically on psychological issues	2.90
16. High school psychology has not been helpful at university	1.59
17. High school psychology has made it difficult to understand psychological theories and concepts	1.53

5 = strongly agree to 1 = strongly disagree

# Descriptive Survey Results

Psychological Topics	Means
Introduction to Psychology	4.54
Personality	3.71
Cognitive Psychology	3.55
Social Psychology	3.54
Biological Psychology	3.53
Cross Cultural Psychology	2.09
Organisational Psychology	1.96
Advanced Topics in Psychology eg. Forensic psychology	1.89

5 = strongly agree to 1 = strongly disagree

Students who had completed VCE psychology, the knowledge gained in VCE psychology was most helpful in.....

# Descriptive Survey Results

## Students who did not complete VCE psychology

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Survey Questions	Means
1. Completing high school psychology would have made it easier to understand course work	3.27
2. Completing high school psychology would have been helpful in university psychology	3.23
3. Completing high school psychology would have made it easier to learn psychological theories	3.20
10. Students that have not completed high school psychology are at a disadvantage in university	2.87
11. Students that have completed high school psychology are at an advantage on psychology exams	2.83
12. Completing high school psychology would have not been helpful in university psychology	2.27

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5 = strongly agree to 1 = strongly disagree

# Focus Group Discussion

- Students who completed VCE psychology had an advantage on.....“the exam like, preparation and learning week to week of material.”
- “People who did do psychology in high school they picked up things a lot quicker, in first year compared to me.”
- “I found that for the first semester in particular, there was a lot of things, like even just general theory, I never even heard about.”

# Relationship Between VCE and University Performance

## First Year Psychology

	ENTER Score	VCE Psychology Study Score	Completed VCE Psychology (yes/no)
Principles of Psychology	.59**	.52**	.02
Foundations of Psychology	.41**	.49**	-.002

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

# Relationship Between VCE and University Performance

## Second Year Psychology

	ENTER Score	VCE Psychology Study Score	Completed VCE Psychology (yes/no)
Developmental Psychology	.52**	.18	.19
Cognitive Psychology	.39*	.14	.11
Biological Psychology	.58**	.38*	.16

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

# Relationship Between VCE and University Performance

## Third Year Psychology

	ENTER Score	VCE Psychology Study Score	Completed VCE Psychology (yes/no)
Philosophy and Methodology of Psychology	.52**	.29	.06
Psychological Assessment and Individual Differences	.51**	.36	.17
Cross Cultural and Organisational Psychology	.45	-.39	.58*

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

# Predictors of University Performance

- ENTER Score predicted performance in:
  - Principles of psychology ( $p = .001$ )
  - Foundations of psychology ( $p = .004$ )
  - Research methods in psychology ( $p = .007$ )
  - Cognitive psychology ( $p = .011$ )
  - Developmental psychology ( $p = .001$ )
  - Biological psychology ( $p = .001$ )
- Completing VCE psychology was not a predictor of university psychology performance either
  - By itself
  - Over and above ENTER score, using hierarchical regression.

# Discussion

- Hypothesis 1: A positive relationship between previous academic ability (as measured by overall high school performance, ENTER score) and university psychology exam performance
  - Correlations:
    - First year -  $r = .59$ ,  $r = .41$
    - Second year -  $r = .52$ ,  $r = .39$ ,  $r = .58$
    - Third year -  $r = .52$ ,  $r = .51$
- Hypothesis 2: The relationship in hypothesis one will decrease over the course of a student's university career

# Discussion

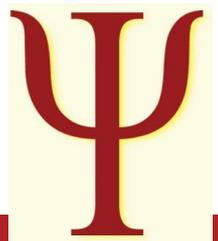
- Hypothesis 3: Participating in VCE psychology will influence a student's university psychology exam performance
  - No significant relationships were found between completing VCE Psychology and university psychology performance
  - However students' *perception* is that completing VCE psychology helps them in university psychology
  - There is a discrepancy between the actual and perceived benefits of studying VCE psychology.

# Discussion

- Hypothesis 4: Having studied VCE psychology will be a predictor of university psychology exam performance, over and above previous academic ability.
  - Completing VCE psychology is **not** a predictor of university psychology exam performance over and above ENTER Score.
  - ENTER Score explained 35% of the variance in first year performance

# Implications

- VCE psychology should not be a pre-requisite for entry into university psychology courses
- Students that complete VCE psychology do not have an advantage over students that have not completed VCE psychology
- The students that have completed VCE psychology believe that they will do better than students that have not completed VCE psychology



# Conclusions

- Previous academic ability is a predictor of university performance across a student's university career
- Students have a perception that if they have completed high school psychology they are at an advantage in university
- However there is no advantage to students who have completed high school psychology.
- Therefore students that have not completed high school psychology are not at a disadvantage

# References

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Thank you for listening

