

**RYDA**

## Social Impact Study 2016



A study into the social and economic  
impact of the RYDA program on  
Australian and New Zealand communities



*Road Safety Education are the providers of*

**SAFESTART RYDA GOOD2GO ROADGUIDE BETTERDRIVER**

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# RYDA Social Impact Study

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## Executive Summary

Youth road trauma is a critical public health issue in Australia and New Zealand. Despite the decline in fatalities and injuries in the last decade, the combined cost of crashes for 17-24 year olds in Australia and New Zealand is currently close to \$6 billion\* (including approx \$800M for NZ) (see page 8), and the social and personal impacts immeasurable.

Given the enormity of this cost to society, the prevention of trauma on the road represents a vital public policy priority.

This Study, produced by Road Safety Education Limited (RSE) was designed to measure the social value created by the RYDA road safety education program in terms of the impact, primarily on participating students, which contributes to reducing trauma and supporting road safety culture in society. It particularly focuses on changes in knowledge, attitude and behaviour in relation to their risk in cars. It also evaluates impacts on teachers, parents, facilitators and program volunteers.

The best road safety programs are those that are professionally developed and delivered but remain engaged with the community. The RYDA program, the largest road safety awareness intervention for students approaching solo driving in both countries, uses evidence based best-practice principles. Currently, over 50,000 students and 2,300 teachers attend each year. RYDA is largely community-based, relying on Rotary volunteers in regional areas for logistical support, with funding from corporate donations, student fees and government (the latter dependent on jurisdiction).

Young people bring a unique set of factors to driving that puts them at high risk on the road: inexperience, factors associated with age such as cognitive development, strong peer influence, and the fact they often drive unsafe cars at riskier times of the day and week.

The Study uses a theory of change, using evaluation evidence to measure different outcomes of the program, discussing the methodology and identifying caveats such as the challenges of measuring behaviour change, attribution of effect to the program, and issues which may have affected the validity of survey results.

The Study incorporates evaluation results from the initial year (2015) of a major program revision (RYDA 3.0). Our Advisory Council provided significant input into RYDA 3.0, and also, in the last few months, the version 3.1 update, and its evaluation process. Net Balance, a research consultancy, helped establish the Study framework, the theory of change and evidence gathering.

### Highlights

The Study shows that RYDA is a highly impactful experience for students. It produces substantial increases in understanding of road risk factors, such as speed, following distance, distractions, car safety features, hazard perception and the role of personality and mind-state. The Study found that the impact is in addition to student prior knowledge in those areas government advertising and school programs have targeted such as drink driving and seatbelt wearing.

There were significant changes in intentions to change personal behaviour - reducing speed, choosing responsible passengers, and not using phones (including hands-free) while driving. The highest impact being increased intentions to keep a safe (3 second) following gap, with knowledge more than doubling across the respondents on this strategy.

Awareness of the consequences of crashes on individuals, and the ripple effect of these to friends, family, and the community was another area of significant increase (87% of students were more or much more aware).

The Study shows significant increased awareness of, and intention to use (between 70-80%), strategies practised at the Program day for avoiding risky driving, dealing with distracting passengers, safe strategies for phones, speaking up as a passenger in concerning situations, planning car trips, being aware of mind-state, staying under the speed limit and being cooperative on the road.

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\* All figures are in Australian dollars unless otherwise stated.

Close to 100% of students say they were likely or highly likely to apply RYDA messages in future and our follow-up survey evidenced this, in some cases a year after attending (in relation to following distances, speed, speaking up with family members, using the ANCAP car safety ratings, and recalling the After the Crash session as a reminder to avoid risk).

When we asked students what changes they experienced during the program, the top response was increased self-awareness of personal risks closely followed by making them a safer driver/passenger through changing their actions. Reducing traffic offences and reducing the chances of crashing were rated third and fourth.

We surveyed teachers on program impact on both their students and themselves. Ninety-nine percent (99%) of teachers rated RYDA as worthwhile for their students in terms of learning outcomes, and between 70 and 85% said they felt involved before, during, and after the program day. The last area is critical as we wanted to know the extent of follow-up back at school. Three quarters of teachers said they had increased their own awareness of road safety.

Parent feedback showed the extent of discussions about road safety following the RYDA day with their child. Eighty percent (80%) of parent respondents said there was a family discussion after RYDA and 66% said RYDA would decrease or greatly decrease their child's risk-taking behaviour. Parents described the continuing effects on the young person's driving, and increases in reminders from their children when driving them.

We surveyed Rotary community volunteers and facilitators who reported a range of personal impacts from working on the program - primarily increased road safety awareness and a sense of purpose in keeping young people safer on the road.

### **Study Conclusions**

Road safety research points to two interrelated outcomes of evidence-based educational interventions - the support and enhancement of existing road safety culture and crucially, the direct reduction of road trauma.

The Study evidence shows that RYDA reinforces government and community road safety measures and, importantly, plays a critical role in filling the gaps where there are no established measures, thereby helping to reduce the burden of health, infrastructure and human costs to government and society as a whole. In addition, RSE advocates for the use of best practice in road safety education and encourages governments to support only those interventions that comply with their guidelines for schools.

While the measurement of crashes avoided is problematical and hence there is a lack of research evidence on how road safety education directly contributes to trauma prevention, most leading researchers acknowledge education as an important component of the road safety equation. Therefore, it is reasonable to expect that an evidence-based and government compliant program would reduce risk behaviour sufficient to represent a significant social and economic benefit. The absence of best practice road safety education would be unconscionable.

The annual financial cost of youth road trauma is enormous with over 400 deaths (approximately \$2.4M per death<sup>15</sup>) and more than 2,400 life threatening injuries (each costing between \$1.8-3.8M<sup>16</sup>), amounting to many billions of dollars every year.

RYDA costs just \$2M annually and impacts over 50,000 students, their teachers, parents and the broader community every year. Purely economically, the potential reduction in road trauma resulting from the RYDA education program represents a significant financial contribution to society. Socially, the value of reducing road trauma is immeasurable.

## **Preamble**

### **Aim and objectives**

The overarching aim of RYDA is to prepare young people for solo driving and safer passenger behaviour. This Study evidences the benefits that the program contributes to society in relation to lowering driving risks by documenting the impact on students, and other stakeholders.

### **Structure of the Study**

**Section one** outlines the program, its history and operations. We also look at the context for the program including car culture, key elements of best practice road safety education, the school and curriculum setting, and investigate the vulnerability of young drivers and their passengers.

**Section two** presents the methodology used for the Study and presents a theorised story of change focusing mainly on the student participants while also looking at other impacts caused by the program.

**Section three** describes the evidence for the hypothesis with a more detailed profiling on the stakeholder groups and an analysis of their feedback on personal and social impacts.

**Section four** discusses the evidence for the theorised story of change and draws conclusions about intermediate outcomes and the resultant social and economic benefits.

A full bibliography is included in addition to references, both of which provide a comprehensive listing of sources we used which are more numerous than can be reviewed within this document.

### **Limitations**

The Study's priority was in evidencing impact on students, and this makes up a majority of the discussion. Teachers were the second priority group given their centrality in the education process and the limited but important accountabilities of road safety in the curriculum. Parents were surveyed to identify the effects at home following the program day. Facilitator and volunteer stakeholders working on the program were also evaluated to gauge the different impacts on them likely to impact on the road safety environment. What is not included is long term follow up (more than a year) of students in relation to driving or passenger behaviour, or crash incidence.

Student survey and focus group processes were informed by the advice of our Advisory Council members, and project partner, Net Balance. The implementation was by RSE team members who worked with teachers to organise them. Reliability and validity considerations are outlined in the methodology section.

### **Ongoing program development**

The Study progressed over much of the period RYDA was revised to Version 3.0 including the stock take and upgrade to 3.1 in late 2015. We used the opportunity of gathering a large amount of feedback to inform new content and increase activities that were evidence-based, and were also informed by student and teacher comments.

Throughout the Study we have noted areas for further study. RSE is an education provider and our research and evaluation program is prioritised in relation to making a direct contribution to program effectiveness. We don't expect a major revision of RYDA 3 content for at least two years so priority focus areas will be the effectiveness of new facilitator training platforms, better targeting of teacher and student prolongation activities, and multi-channel approaches to connect directly with RYDA graduates.

### **Acknowledgements**

The development of a broad evaluation of the impact and positive effects of the RYDA road safety education program is in large part due to Toyota Australia's support in building Road Safety Education Limited's capacity.

The contribution to RSE and RYDA from BOC (a member of the Linde Group) over the last 10 years has also been considerable, enabling us to expand the reach of RYDA nationally and into New Zealand.

Our intention is that the Study will improve the program, strengthen advocacy and further build our research and evaluation culture and, by so doing, increase our contribution to youth road trauma reduction. The Study was co-developed by Net Balance, a sustainability research organisation, in 2012-13. EY, the international accounting firm known as Ernest & Young, acquired Net Balance in 2014 and continued to provide support during the remainder of the Study.

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## Section One: The Program

Outlines the program, its, history and operations.

We also look at the context for the program including car culture, key elements of best practice road safety education, the school and curriculum setting, and investigates the vulnerability of young drivers and their passengers.

# 1

## SECTION ONE: THE PROGRAM

RYDA is a road safety awareness program for senior secondary school students. More than 50,000 students from more than 650 schools attend each year in Australia and New Zealand. By a big margin it is the largest program of its type across both countries.

RYDA is provided by Road Safety Education Limited (RSE), a not-for-profit. Our mission is:

"To provide evidence-based road safety education that supports the development of a road safety culture, contributing to a reduction in road trauma."

As well as providing RYDA and four other road safety programs, RSE actively advocates for best practice road safety education in the community, at conferences, and with governments. It maintains a social media presence with students after the program through Facebook and Instagram.

The program tag-line *Road Choices*, emphasises the importance of decision-making in lowering road risks. Underlying the program goal is a broader strategy of supporting and strengthening road safety culture with a focus on the social obligations of being a road user.

In 2014-5 the RYDA program content was significantly revised to version 3.0 through a lengthy research and evaluation process. An important part of this was input from our Advisory Council. Formed in 2012, the role of the Road Safety Education Advisory Council has been to peer-review program content, discuss the application of relevant research to the program, and advise on its evaluation process. This has provided RSE with a conduit to best evidence research, advice on psychological factors for the age group that impact on the program, and evaluation practice.

The Advisory Council is made up of five leading road safety psychologists:

**A/Prof Sam Charlton**, Chair of Psychology, Waikato University, NZ;  
**Dr Marilyn Johnson**, Senior Research Fellow, Monash University, Aus;  
**Dr Neale Kinnear**, Principal Psychologist, Transport Research Laboratory, UK;  
**A/Prof Teresa Senserrick**, Transport and Road Safety Research group, University of New South Wales, Aus;  
**Professor Barry Watson**, Adjunct Professor, Faculty of Health, Centre for Accident Research and Road Safety, QLD (CARRS-Q), Aus

Many research papers provided input into the revision process and this is referenced throughout this document. One study<sup>1</sup> for example concludes that campaigns aimed at influencing safety attitudes in general have been unsuccessful because they do not focus on the specific attitudes likely to influence risk-taking behaviour. This was taken on board as we reshaped content to focus more closely on key young driver issues using facilitator-moderated co-construction of low risk strategies and goal-setting.

More than half of students attending RYDA are already driving, either as learners under supervision, or have just begun unsupervised driving. The program aims to prepare all participants for solo driving by giving them tools to lower their risks. By tools we mean knowledge, attitudes and personalised strategies which are detailed later in the Study.

In addition, all participants are, of course, passengers. This is a critical area for this age group as peer distraction is a risk factor<sup>2</sup>, and the ability to speak up confidently in situations where they feel concerned can lower those risks, and is the only means of control passengers have in those situations.

RYDA does not teach driving skills, instead focusing on cognition development - it is a risk awareness program. The view of most government agencies where we work is not to encourage young people to gain their licence early, or take part in advanced, skilled-based driving instruction. The message in RYDA is that the best time to get your licence is when you actually need it, not because your friends

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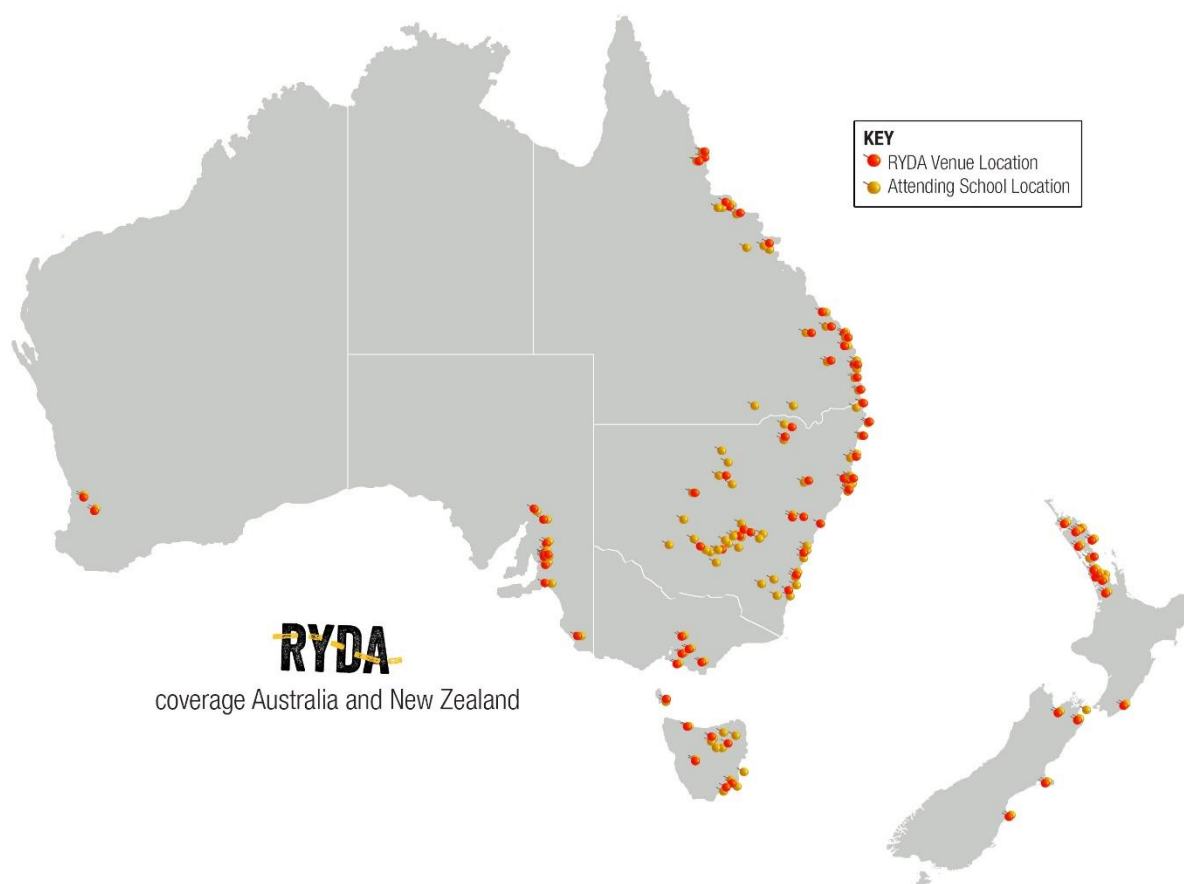
<sup>1</sup> Glendon et al; Evaluating a novice driver and pre-driver road safety intervention, Accident Analysis and Prevention 64 (2014) 100– 110

<sup>2</sup> Mirman et al; *Peer Passengers: How Do They Affect Teen Crashes?* Journal of Adolescent Health (Impact Factor: 3.61). 06/2012; 50(6):588-94

have one. We also advocate strongly for an attitudinal approach, not a skill-based philosophy, giving students information and strategies that would not be available to them along the typical pathway to full licensure. The message at RYDA is clear - being safer as a driver or passenger depends on both developing experience and adopting the key risk-lowering strategies.

RYDA is conducted out of school at specially chosen venues. There are six interconnected sessions including practical demonstrations, videos, discussion, and personal strategy development with follow-up messaging at home and school through utilising the student Goals, Plans and Strategies (GPS) booklet and a bank of extension resources for teachers, parents and students.

There are close to 90 venues in both countries. Each one relies on a network of facilitators, support staff, program materials and quality assurance processes from RSE offices in Sydney and Auckland. Facilitators use detailed session notes and supporting resources such as videos, the GPS workbook and PowerPoint presentations. They are trained and mentored face to face and through distance learning platforms.



RSE provides parent education through the RoadGuide program which is organised, often at the same time as RYDA, on demand from venue coordinators. There are in-school pre and post RYDA programs available for teachers (SafeStart for Y9-10, and Good2Go, a social action program which can be initiated by RYDA graduates).

### History of RYDA

RYDA started in 2000 in Sydney as a community response to a local car crash that killed four teenage boys. Rotary and its *U turn the Wheel* program was the originator, with content developed in collaboration with the New South Wales Departments of Education and Training, Transport, Police, Health and Fair Trading.

The first six session program was held in 2001 at the Honda Australia Roadcraft Training site in St Ives, Sydney. Approximately 1,200 students attended the program in its inaugural year and in the 14 years since, it has grown to more than 50,000 students Australia and New Zealand-wide with close to 450,000 graduates since 2001.

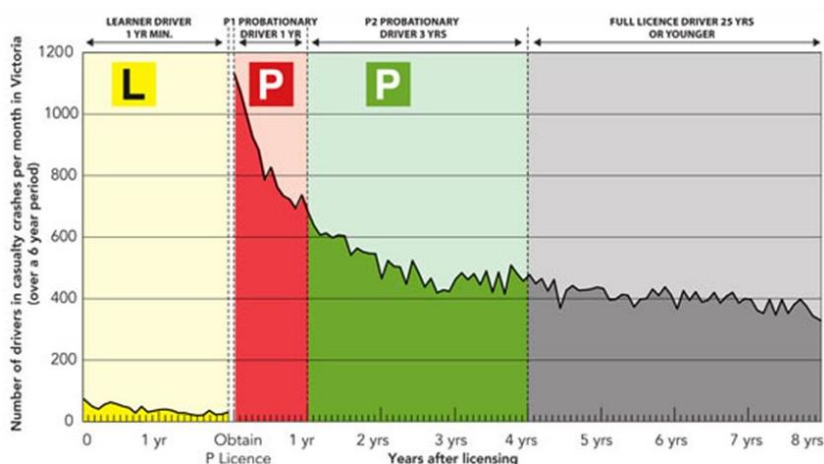
Importantly, in the 14 years since, RYDA has become a program reflecting best practice, moving from a community developed product to an evidence based program, professionally developed by Road Safety Education Limited under the guidance of an internationally renowned, expert Advisory Council. RYDA remains engaged with the community through its relationship with Rotary Clubs who ensure that the program remains available and affordable through their logistical and fundraising efforts.

In 2014, after significant revision, RYDA 3.0 was launched, broadening the scope of the program to include personal contribution to road risk, more on passenger role, and increased emphasis on developing strategies. Today RYDA is available in most Australian states and territories, and in New Zealand. It receives funding from governments in Tasmania, Queensland, New South Wales, and New Zealand as well as corporate social responsibility funding, primarily from BOC, Toyota Australia, New Zealand Steel and more recently Bosch and Bridgestone.

### Road risk for young drivers

The fact that close to 650 schools send their senior students each year underlines their recognition that driving, riding, being a car passenger or pedestrian is a universal health and well-being issue, and that the consequences of poor choices in traffic situations are serious, sometimes fatal. This is so especially for high school students. Along with suicide, road crashes are the greatest cause of death and injury for young people<sup>3</sup>.

Year 10-12 students are approaching the most dangerous stage of their driving lives. The famous graph below (VicRoads 2012) shows the spike in casualty (serious) crashes following the supervised learner stage, a picture very similar to most developed countries.



The graph shows crash frequency increasing by more than a factor of thirty in the brief time a learner moves to solo (unsupervised) driving. From being the safest drivers on the road, newly licensed drivers have the highest crash rates. That risk decreases as drivers gain experience. Males are over-represented in road crash fatalities generally, and this is reflected in young adult fatalities<sup>4</sup>. In fatal crashes, young adults usually die as an occupant of a vehicle (77%) not pedestrians or motorcyclists, and often (67%) in single vehicle crashes, a much higher percentage than all drivers.<sup>5</sup>

*On L's you do everything perfectly but once passed test and on P's you slacken off and don't do everything properly because you are more experienced and can get away with it.*

Student, Barker College, NSW

<sup>3</sup> It is assumed that suicide has overtaken road death as the leading cause of death and injury for young people. For more information on the comparison, visit <http://www.abc.net.au/news/2015-10-08/suicide-rates-road-toll-john-brogden-fact-check/6822324>

<sup>4</sup> <http://www.youngdriverfactbase.com/key-statistics/>

<sup>5</sup> Bureau of Infrastructure, Transport and Regional Economics; *Young Adult Road Safety—A Statistical Picture*, Canberra, 2013, p2

There are many factors<sup>6</sup> at play in this critical phase including inexperience, greater risk taking, impulsiveness and distractibility, sleep patterns, peer influence, unsafe cars, driving at high risk times of the day/night/week, and heightened optimism bias. Many of these are beyond the control of young people. In that sense, it is not young peoples' fault that they are in a high risk category.

Risk-taking in the RYDA cohort is influenced by age-related brain and physiological development described by Senserrick 2013<sup>7</sup>. Frontal lobe functions continue to develop during adolescence through to the early 20s. This is the area of brain that supports and facilitates regulation of impulsivity, overrides emotional arousal, and anticipates consequences.

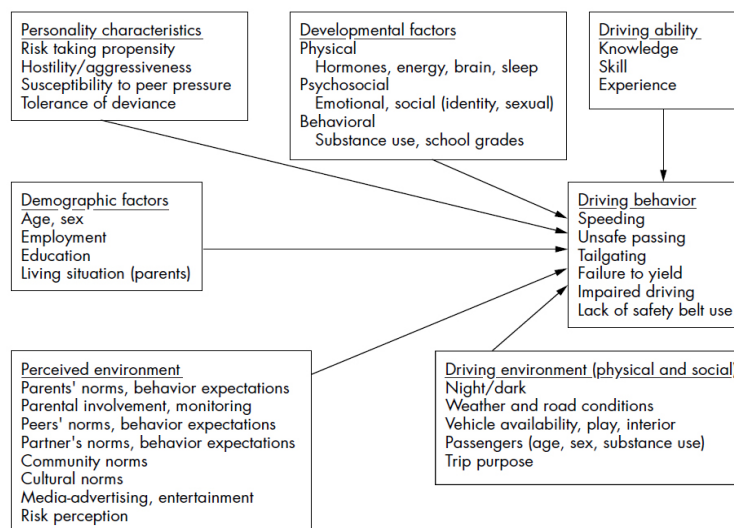
Biologically driven distractibility<sup>8</sup> may mean peripheral vision or ability to focus on fixed object tasks may be reduced. This has significant implications for being in a car because of the reduced ability to ignore distractions or appropriately allocate attention when driving. Two common areas of concern relate to passenger and phone distractions.

Young drivers have the highest proportion of fall asleep crashes, reflecting their need for more sleep and that they commonly have uneven sleep patterns<sup>9</sup>. They also do more driving than adults in risky driving conditions: at night, on weekends, recreational driving, and in older, smaller cars.

Recent research indicates that, rather than young people thinking differently from adults, the major influences in risk-taking come from the interplay between internal and external factors. According to Laurence Steinberg, a leading American researcher into adolescent psychology, there is little evidence young peoples' risk perception and appraisal is different than adults. He suggests that the greater propensity of adolescents to take risks is not due to age differences in risk perception or appraisal, but to age differences in psychosocial factors that influence self-regulation.

Adolescence, he says, "is a period of heightened vulnerability to risk taking because of a disjunction between novelty and sensation seeking (both of which increase dramatically at puberty) and the development of self-regulatory competence (which does not fully mature until early adulthood)."<sup>10</sup>

All the above factors are summarised by the following diagram sourced from the United States, and which maps the 'perfect storm' that accounts for the disproportionate crash frequency of young drivers and represents a consensus in the research literature.



Shope 2006<sup>11</sup>

<sup>6</sup> Senserrick, Young Drivers: *Willful risk takers or are the odds simply stacked against them?* Presentation to RSE Annual Awards, Dec 2012

<sup>7</sup> ibid

<sup>8</sup> Luna & Sweeny, *The emergence of collaborative brain function*; *Annals of New York Academy of Sciences*, 2004 Jun;1021:296-309.

<sup>9</sup> <https://www.betterhealth.vic.gov.au/health/healthyliving/teenagers-and-sleep>

<sup>10</sup> Steinberg, *Risk taking in adolescence: what changes, and why?*, *Annals of New York Academy of Sciences*, Vol 1021, 2004

<sup>11</sup> Shope, *Influences on youthful driving behavior and their potential for guiding interventions to reduce crashes*. *Inj Prev*. 2006 Jun;12 Suppl 1:i9-14.

The end result of the described characteristics of young drivers, and the backdrop for the RYDA program, is the extent of death, injury, property damage and social/psychological impact in Australia and New Zealand.

Youth road trauma is both horrific and unacceptable. It is totally disproportionate to what often is the result of chain of small-scale but poor choices. Lives are lost, futures are ruined and families are put through years of distress and financial hardship.

In both countries, the highest peak in death and injuries is at 18 years. The increase at 18 years is more pronounced in Australia, with New Zealand having higher injury numbers for 17 and 18 year-olds.<sup>12</sup> In Australia, in the year ending November 2015, there were 230 fatalities in the 17-25 age group.

### **The economic and social costs of crashes**

A key part of assessing the likely impact of the RYDA program is the magnitude of the costs incurred.

Road crashes impose large financial costs on society. The economic cost of road crashes in Australia is estimated at \$27 billion each year (close to 2 per cent of GDP)<sup>13</sup>. Estimated cost of human losses were approximately \$2.4 million per fatality, losses for a hospitalised injury were approximately \$214,000 per injury (including disability-related costs), and losses for non-hospitalised injury were approximately \$2,100 per injury<sup>14</sup>.

Serious crashes causing profound impairment result in a loss of \$3.82 million and severe impairment \$1.78 million per person<sup>15</sup>. The cost of crashes includes a long list of direct and indirect outcomes including loss of life and life quality, loss of output due to temporary incapacitation, medical costs, legal costs and property damage costs<sup>16</sup>. In both countries the average value of a loss of life and the total economic impact is estimated by the amount of money that the members of the population would be willing to pay for a safety improvement that results in the expected avoidance of one premature death. The value of statistical life (VOSL) in New Zealand was established in 1991, using a willingness to pay (WTP) survey. It is indexed to average hourly earnings (ordinary time) to express the value in current prices. In Australia the 2008 calculation of a statistical life was A\$3.5M and in New Zealand NZ\$3.95 in 2014<sup>17</sup>.

In Australia, young drivers aged 17–25 accounted for 336 fatalities, 2,029 serious injuries with high threat to life and 7,852 hospitalisations in 2010.

In New Zealand, young drivers aged 15–24 were involved in 71 fatal traffic crashes, 485 serious injury crashes and 2,581 minor injury crashes in 2013. The total social cost of the crashes in which 15–24 year-old drivers had the primary responsibility was NZ\$737 million. This is 24 percent of the social cost associated with all injury crashes in New Zealand.<sup>18</sup>

The non-monetary ripple effect of road crashes should be added to economic costs - the social and psychological effects on the community when a young person dies, or is seriously injured causing life-long effects.

It is generally acknowledged by Australian and New Zealand transport agencies and police that the key issues in reducing youth trauma are speed, impairment (alcohol, drugs and fatigue), distraction (including by phones and other passengers), and seatbelts (Queensland, Victoria and South Australian police services run campaigns on these 'fatal five').

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<sup>12</sup> Austroads, *Road Fatalities and Serious Injuries in Australia and New Zealand 2001–10*, p 20  
<https://www.onlinepublications.austroads.com.au/items/AP-R478-15>

<sup>13</sup> <https://infrastructure.gov.au/roads/safety/>

<sup>14</sup> Bureau of Infrastructure, Transport and Regional Economics; *Cost of road crashes in Australia*, 2006

<sup>15</sup> [https://bitre.gov.au/publications/2010/report\\_118.aspx](https://bitre.gov.au/publications/2010/report_118.aspx)

<sup>16</sup> Bureau of Infrastructure, Transport and Regional Economics; *Social Cost of Road Crashes*, Australasian Transport Research Forum 2010 Proceedings, Canberra, p3.

<sup>17</sup> <http://www.transport.govt.nz/research/roadcrashstatistics/thesocialcostofroadcrashesandinjuries/report-overview/>

<sup>18</sup> Ministry of Transport; *Crash Statistics for the year ended 31 December, 2012*, Crash Fact Sheet, Wellington; 2013,

And yet, according to Dr Michael Carr-Gregg<sup>19</sup>, a prominent child and adolescent psychologist in Australia, youth road safety is one of the great success stories of public health policy. During the last ten years, road crash outcomes in this age-group have improved significantly faster than most other ages. In Australia, for example, fatalities are now 29% lower than five years ago and 47% lower than ten years ago according to the Bureau of Infrastructure, Transport and Regional Economics. It is generally surmised that this has happened through a combination of measures - legal enforcement, better roads and cars, and the growth in evidence-based road safety education. RSE is proud to be a part of this trend but we are mindful that the rate of deaths per population for young adults remains more than 50% higher than that of the general population.<sup>20</sup>

### **Cars and young people**

Social culture in Australia and New Zealand places high importance on cars and car culture. This is reflected in advertising, movies and social media. Young people are exposed to this to a high degree. Rural areas are naturally car oriented and here young people learn to drive and gain their licences earlier. In cities, however, the proportion of young people learning to drive is in decline<sup>21 22 23</sup> possibly because of better public transport and the rise of social media as a substitute for face to face interaction with friends.

Getting your licence, once a rite of passage, still represents freedom and independence and, for some young people, is essential to travel to work, school or recreational activities. Our survey data shows that young people associate driving with excitement.

Gaining a licence also provides young people with the most accepted form of personal identification in both countries.

RYDA participants bring their own set of attitudes towards road safety issues, often reflecting current social and family norms. Student feedback in this Study shows the influence of changing social norms on key road safety issues. A study into random breath testing in New South Wales, for example, describes how government, police and community safety measures have altered the way people think about road safety<sup>24</sup>. Another important influence on young people is that many are learning to drive with parents or driving instructors, and parent attitude, in particular, is known to be an important influence<sup>25</sup>.

### **School road safety education**

In high schools, road safety competes with many other student health and well-being priorities despite being, along with suicide, the highest injury and fatality risk for teenagers.

There are surprisingly few references to road safety education in the Australian (draft national) and New Zealand curricula. Safety is a theme in health education in both countries but road safety shares this space with many other safety topics such as personal safety, internet safety, water and sun safety with little guidance to teachers on prioritising topics according to statistically proven risk.

We surveyed parents in Australia and New Zealand on how much their school does to promote road safety. Their responses were:

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<sup>19</sup> Unpublished Speech to Young Driver Safety Program Workshop, Melbourne Convention and Exhibition Centre, 27 August 2015

<sup>20</sup> Bureau of Infrastructure, Transport and Regional Economics; *Young Adult Road Safety—A Statistical Picture*, Canberra, 2013, p7

<sup>21</sup> <http://www.abc.net.au/news/2015-01-06/young-people-less-likely-to-get-a-driver27s-license/6002600>

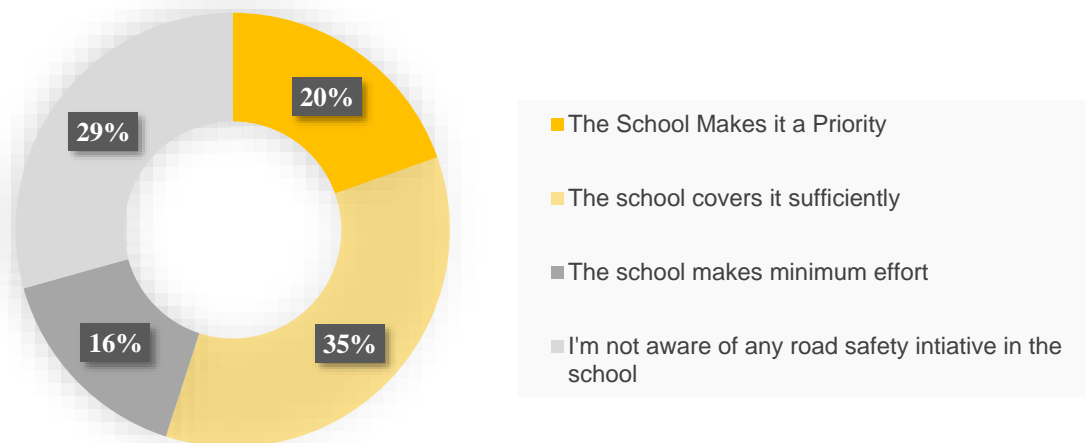
<sup>22</sup> Raimond and Milthorpe: *Why are young people driving less? Trends in licence-holding and travel behaviour*, Australasian Transport Research Forum Proceedings 2010

<sup>23</sup> <http://chartingtransport.com/2015/03/09/trends-in-drivers-license-ownership-in-australia/>

<sup>24</sup> Prabhakar et al; *Factors involved in the long-term benefits of Random Breath Testing in NSW*: Report to the Federal Office of Road Safety, University of Sydney, Australia 2006

<sup>25</sup> Scott-Parker; *A comprehensive investigation of the risky driving behaviour of young novice drivers*, PhD Thesis, Queensland University of Technology, 2012





As students advance in the school system they, anecdotally, receive less road safety education when best practice principles suggest it should be ongoing, continuous, and age appropriate.

### A brief history of road trauma and responses to it

Road trauma has increased steadily in line with the numbers of vehicles on the road. The mass produced motor vehicle was not designed with safety in mind for much of the twentieth century. Most car manufacturers now compete to bring the latest safety technology to market. Significant legislative measures from the 1970s steadily brought the fatality and injury rate down. In New South Wales, for example, the introduction of compulsory seat belts in the 70s, random breath testing in the 80s and speed cameras in the 90s coincided with sharp drops in crash rates<sup>26</sup>. The 90s also saw the start of the ANCAP car safety rating system.

In Australia the number of road fatalities has fallen from 3572 in 1974, to 1053 in 2014<sup>27</sup> and in New Zealand for the same period 676 to 294<sup>28</sup>.

For the young driver crash rate, the main game-changer has been the introduction of the graduated licensing system (GLS), designed to mitigate the effects of youth and inexperience. Novice drivers progress through a series of stages involving a variety of restrictions until they attain full licensing allowing them to accumulate experience, while minimising exposure to risky conditions. Full driving privileges are therefore delayed until young people begin to mature out of risky driving practices.

New Zealand introduced the first comprehensive GLS in 1987, featuring passenger restrictions, night curfews and reduced BAC. Some Australian states, including NSW, adopted some elements of GLS in 1990s. In July 2007, New South Wales, Victoria and Queensland introduced more comprehensive GLSs (followed by other states).

The common features of car GLS in Australia and New Zealand are:

- Learners licence
  - Must be held for 6-12 months
  - Minimum period of supervised driving
  - Zero blood alcohol limit
- Provisional licence (Restricted licence in NZ)
  - Must be held for at least 3 years (18 months in New Zealand)
  - Divided into two phases in most Australian jurisdictions
  - Restrictions on carrying young passengers (most states)
  - Vehicle power, towing and mobile phone use restrictions
  - Zero blood alcohol limit

<sup>26</sup> <http://roadsafety.transport.nsw.gov.au/statistics/fatalitytrends.html>

<sup>27</sup> Bureau of Infrastructure, Transport and Regional Economics; *Australian Infrastructure Statistics Yearbook*. 2015

<sup>28</sup> Ministry of Transport; Road deaths and reported injury casualties 1921 to 2014, Wellington, NZ.



## How the RYDA program works

The broad aim of RYDA is to increase awareness of road risks, and to work with students to help them develop risk reduction strategies.

The objectives of the day are:



Throughout the day, road safety is framed as a social and personal responsibility to protect friends and their wider social circle; and road safety enforcement is presented as a necessary measure to allow for novice driver inexperience and protect society as a whole.

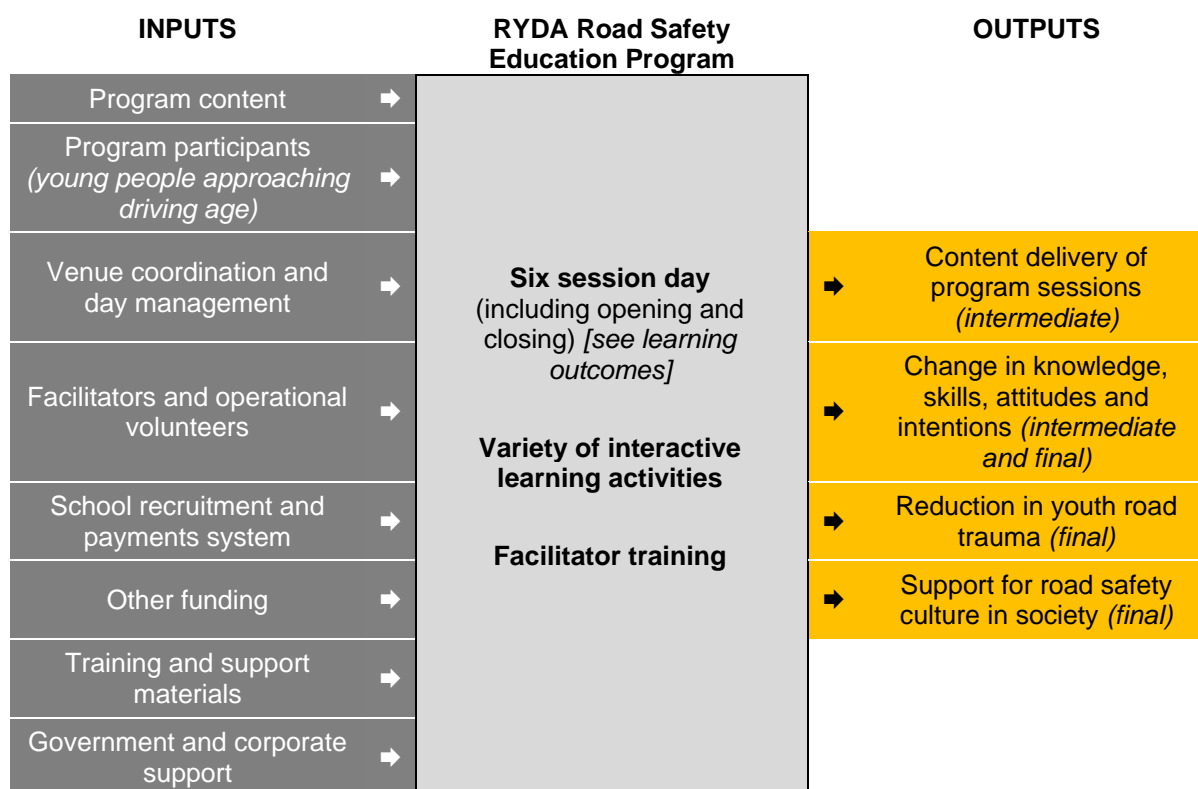
Students rotate through six sessions

<b>Rights and Responsibilities</b>	Key risk issues and penalties for young drivers / passengers and the role of the police (usually presented by a uniformed officer)
<b>After the Crash</b>	A presentation by a young person who has sustained either a traumatic brain injury, or a spinal cord injury followed by a student self-reflection on how a similar crash would affect their life
<b>Genevieve's story</b>	The story of two girls who made one bad decision, and its ripple effect. Includes student group work on decision-making, mind-state and strategies to lower risks
<b>Speed and Stopping</b>	A practical demonstration of the physics of speed, stopping and following gap, as well as car safety features (esp. seatbelts), ANCAP and tyres
<b>Hazards and Distractions</b>	Strategising about managing distractions (esp. mobiles and passengers) and improving hazard perception skills
<b>The Personality Test</b>	The personality's role in road risk and how to manage it as a driver and a passenger

The Advisory Council was influential in greater focus on two themes above - personal factors that play in contributing to risky driving including transient emotional states; and more importance on passengers in lowering risks in a car.

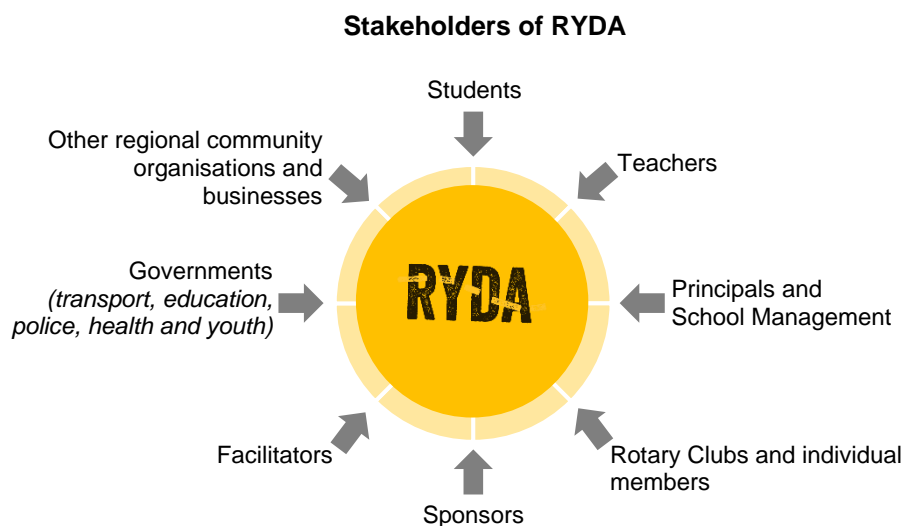
Program quality is overseen through regional managers and head office staff covering both Australia and New Zealand. Facilitator training, a program manual and PowerPoint presentations are provided and locked presentations on laptops maximise facilitation fidelity. The facilitator training process is in three stages - the first an induction into the session content, the second a workshop in generic facilitation skills, and lastly, individual self-assessment including a visit and critique from program staff.

The diagram below describes the RYDA 'system' inputs, processes and outputs.



### The stakeholder groups

The primary stakeholder group is students, and the sub-categories within that: provisionally/restricted licence drivers, learner (supervised) drivers, and non-drivers.



Although we have disaggregated some of the survey and focus group evidence, RYDA objectives are designed for all students who will be driving one day, plus passengers (the program has increasingly focused on this group). In that sense, it is just as useful to show that the effects of RYDA are long-lasting, as well as the specific effects on each of the three groups. In fact, only a small proportion of participants are novice solo drivers and the largest proportion of the student audience are learners (56%).

The Study prioritises the examination of student knowledge, skills and attitudes; however RYDA influences a wider circle of stakeholders and, in doing so, may provide broader support for community road safety measures.

The Study also includes tracing and evaluating the different levels of social impact the program has for:

- teachers (who attend the program with their students),
- parents (through home conversations occurring as a result of their child's attendance),
- facilitators (contracted and trained to deliver RYDA sessions), and
- Rotary volunteers (acting as organisers in regional areas, day managing the program, and providing logistical support on the day).

The Study did not include the role of sponsors or school principals.

### **The Theory of Planned Behaviour**

Road safety educators are sometimes asked about the theoretical underpinnings of their program, particularly in relation to changing young driver and passenger behaviour. When RYDA was revised to Version 3.0 many of the research papers we used referred to the Theory of Planned Behaviour (TPB) (Ajzen, 1991) as a way of explaining the decision-making process of, in this case, young people in cars.

TPB says individual actions depend on three factors. The first is attitude toward the behaviour by the individual. The second is subjective norms - what the individual believes about whether significant others (eg. friends, parents) think he or she should engage in the behaviour. The third is perceived behavioural control - the extent to which the behaviour is easy or difficult to perform - and whether they believe they are capable of it.

According to the TPB, a young person is likely to decide to adopt a risk-lowering measure if they believe that this will reduce the risk of crashing, if they also believe that people whose views they value think they should avoid the risk behaviour, and, thirdly, if they feel that they have the necessary resources and opportunities to do so.<sup>29</sup>

In RYDA sessions students observe and discuss the factors and consequences of crashes - physically, emotionally, socially, legally, and financially; and strategise about preventative measures. This correlates with the first aspect of TPB.

Secondly, peer influence is critical in decision-making at this age. RYDA asks students to think about what their friends really think about risk-taking in a car.

Thirdly, RYDA asks students to rethink how much control they have, for example how easy or hard it is to speak up as a passenger in a concerning situation. As most students (and adults) perceive this as being hard, program participants are lead through simulations and discussion to formulate ways of speaking up that are both effective (won't alienate the driver), and suited to the personality makeup of the message-deliverer.

TPB also says that the three together decide the intention to act which makes up the main determinant of the behaviour itself. In describing behaviour change in this Study we have used both intentional evidence, and evidence from focus groups on behaviour change itself.

### **Government guidelines on secondary school road safety education**

School road safety education requires an evidence-based approach. None more so than Year 10-12 (NZ Years 11-13) where the technical and psychological approaches are more sophisticated, and where teacher bias (all teachers have their own views on driving and road safety measures) can interfere with road safety messages.

Most secondary schools that prioritise road safety education rely on external providers and/or government-developed curriculum resources.

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<sup>29</sup> Adapted from *Effective Interventions for Speeding Motorists*, Road Safety Research Report No. 66, Department for Transport: London; 2006

Best practice road safety education is broadly prescribed in both Australia and New Zealand. In Australia, most government agencies either publish their own guidelines, or make reference to the Western Australian School Drug Education and Road Aware (SDERA) guidelines for schools managers (Appendix 1).

In New Zealand the Safer Young Driver<sup>30</sup> guidelines (Appendix 2) provide the reference point for government agencies and schools in choosing providers.

To summarise young driver education jurisdictional guidelines from both countries:

Programs should:

- target attitudinal factors - the main cause of crashes for novice drivers,
- discourage driver skills training,
- be interactive, engaging, using multiple educational strategies,
- not include graphic images or fear approaches,
- use small class sizes and promote discussion,
- involve teachers, parents and community,
- promote ongoing messaging in classrooms following the intervention,
- focus on both drivers and passengers,
- promote peer support, and
- be facilitated by experienced, qualified and trained personnel.

The guidelines make indirect reference to the role of intra-personal awareness, attitude, mindstate and personality highlighted as key issues for learning to drive. The best example of a theoretical approach to this is the Goals of Driver Education (GDE) matrix developed by Hatakka and Keskinen et al<sup>31</sup> and which is summarised in the following diagram.

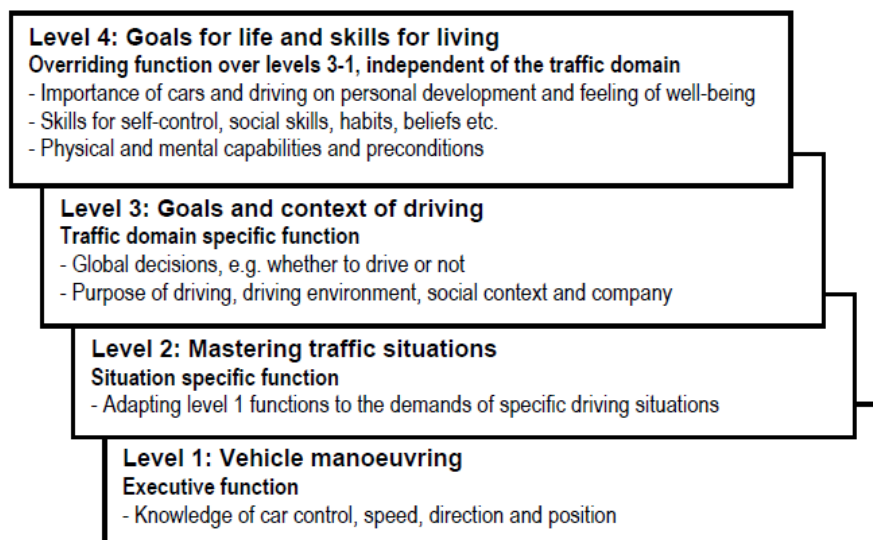


Fig.1. Hierarchical levels of driver behaviour (adapted from Keskinen, 1996).

The matrix highlights the different influences and skills required for low-risk driving, from low level (technical skill) to higher levels (including trip planning, lifestyles and impulse control). The implications of this model, which is reflected in official European driver instructional guidelines, is that influencing the beliefs and motivations of young people for driving is more likely to be effective in terms of crash prevention than developing technical skills.

According to Berg, a road safety researcher, "the focus should therefore be to make young drivers aware that their personal motives, tendencies, and social relations in the broader sense always affect

<sup>30</sup> <http://www.nzta.govt.nz/assets/resources/safer-young-drivers/docs/safer-young-drivers.pdf>

<sup>31</sup> Hatakka, Keskinen, Gregersen, Glad & Hernetkoski; *From control of the vehicle to personal self-control; broadening the perspectives to driver education*, 1999

their goals and context of driving, with the aim of getting them to change their goals behind driving and the context in which driving is performed—that is, why a driver is driving on a certain occasion, where and when, and with whom."<sup>32</sup>

This model, the advice of the RSE Advisory Council, appropriate research and stakeholder feedback, and the government education guidelines influenced the development of current RYDA content by more emphasis on factors related to levels three and four of the model.

### Teaching and learning principles

RSE also referenced best-evidence teaching and learning as an important component of program revision, particularly the work of Hattie in summarising research into effective learning<sup>33</sup>. Chamberlain and Hook have also contributed to the discussion on effective road safety education in a curriculum context for the New Zealand Transport Agency.<sup>34</sup>

Hattie's application to effective learning in road safety education (those variables we can control) might be summarised in the following principles:

- understand what a student knows already and give them the right level of challenge
- show students what success looks like in relation to constructing an understanding of what a low-risk driver/passenger is, and foster a safety point of view
- apply road safety knowledge to situations through skill and attitude development (including self-knowledge)
- understand the impact of the program and maximise feedback to facilitators
- use peer influence
- establish an atmosphere of:
  - respect (students are able, valuable and responsible)
  - trust (session leads to collaborative cooperative engagement)
  - optimism (students possess untapped potential)
  - intentionality (creating and maintaining session flow)
- students should evaluate their own learning through planning and implementing actions to lower their risks

Chamberlain and Hook summarise characteristics of effective road safety education teaching and learning approaches, echoing Hattie:

- approaches based on best evidence teaching and learning
- content which is explicit, appropriate and challenging
- focus on individual learning needs
- target causes of risk behaviour
- approaches that are evaluated

### The existing state of road safety education in Australia/New Zealand

Pre-driver road safety education in Australia and New Zealand is a mixture of government, not for profit and commercial programs. The extent they incorporate best-practice principles varies widely.

Most programs fall into one or more of the following categories\*:

- Large audience crash re-enactments
- Curriculum interventions providing schools with lessons and materials
- School presentations commonly focusing on a specific road crash or experience, and typically delivered by a survivor, or relatives of the deceased.
- Hospital-based programs where students visit trauma departments
- Risk awareness programs encompassing a range of knowledge, skills and attitude objectives.

\* Some programs use a combination of the above

The fear-approach is commonly used in Australian jurisdictions using crash re-enactment, or video/images of horrific injuries such as that provided by Westmead Children's Hospital in New South

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<sup>32</sup> Berg: *Reducing crashes and injuries among young drivers: What kind of prevention should we be focusing on?* Injury Prevention 2006; 12; 15-18

<sup>33</sup> Hattie, J. *Visible Learning*, Routledge, 2008

<sup>34</sup> <https://education.nzta.govt.nz/guidelines/research-on-road-safety-education>

Wales (BStreetSmart<sup>35</sup>), the PARTY program<sup>36</sup> run out of several trauma wards in Australian hospitals, and other smaller presentations in New Zealand and Australia fail both best evidence and governmental guidelines and yet are gaining popularity and are often supported by public funds. Often schools regard this as a satisfactory road safety response with it representing their sole commitment. This is money and time wasted, taking resources away from the provision and evaluation of evidence-based programs.

RSE advocates for the use of best-practice in road safety education and encourages governments to support only those interventions, such as RYDA, that evaluate and evolve in order to improve their effectiveness and value. While Governments produce guidelines for schools in choosing road safety programs many, questionably, fund programs that fail to meet these guidelines.

Youth road safety educators, face very powerful headwinds in relation to the psychological and physiological characteristics of adolescent behaviour, so the application of research into these factors, as a necessary step in designing programs to allow for them, is essential.

Fear approaches in particular are shown to be ineffective or counter-productive.

Research into the use of physical threats in road safety advertising<sup>37</sup> shows that they may be problematic given that such appeals may not be regarded as relevant, and hence persuasive, by those road users most commonly targeted - risky drivers and passengers. Male participants were more likely to report that the messages would influence the behaviour of other drivers than themselves. Young males appear to be less persuaded by appeals involving physical threats, perhaps because they feel less vulnerable to such threats. They may be immune to fear tactics given the levels of fear and physical threat in popular media. Consistent with this suggestion, evidence that social threats (e.g., threat of losing licence and the social stigma attached to licence loss) may be an effective threat-appeal alternative, particularly for younger individuals (including younger drivers), is accumulating.

These programs also largely follow an "information deficit" philosophy believing that students lack information on road safety and that by providing information through confrontational presentations alone (without small group discussion to process such information into personal strategies) this will automatically lead to knowledge formation, then attitudinal change and behaviour change.

Research summarised by VicRoads<sup>38</sup> indicates the factor most likely to influence attitudes, intentions and behaviours is not the level (severity) of threat, but the individual's perception of their own vulnerability to the threat. Even if a fear response is aroused, or is highly motivating, intentions to change rarely ever result in real world behaviour change. Frequently they find such communication attempts not to be personally relevant.

Young people are generally sophisticated in recognising the intended message and don't become personally involved with or persuaded by the threat. Most road safety arguments and threats are already in the public domain, so it is difficult to make the message appear new.

The VicRoads summary says many young people deep down do not believe they are vulnerable. The key to getting young people to consider their risky behaviour is firstly to establish their own personal vulnerability then developing actions to remove the serious threat. Echoing the Theory of Planned Behaviour, any behaviour change approach needs to focus on modelling the desired behaviour and, where possible, use positive reinforcement and be easy to carry out. Appeals to adolescents should be norm based (RYDA participants often assume, incorrectly, for example, that most people speed, talk on phones etc.), and should convey severe social disapproval of the risky behaviour.

Another problem associated with the use of fear to change behaviour, says the VicRoads review, is that there is no one measure of fear. What is a 'high' fear level in one situation for one person could be judged as 'moderate' or 'low' by another.

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<sup>35</sup> <http://www.bstreetsmart.org/>

<sup>36</sup> [partyprogram.com](http://partyprogram.com)

<sup>37</sup> Lewis, Watson, Tay & White; *The role of fear appeals in improving driver safety: A review of the effectiveness of fear-arousing (threat) appeals in road safety advertising*, Health Communication, 28: 84–98, 2013

<sup>38</sup> Young people's response to intended 'shocking' road safety messages, VicRoads, 2010

Road safety researchers reject fear-based approaches unless moderated by post activities to empower the students. Young peoples' main reaction to fear is to block it out, and other emotional techniques such as shame, guilt and responsibility are likely to be more effective<sup>39</sup>.

Government road safety education guidelines in Victoria, Queensland, New South Wales and New Zealand clearly advise schools to avoid fear-based programs but, inconsistently, many governments still fund fear-based events.

### **Curriculum materials approach**

Most government guidelines highlight the importance of the teacher - teachers know their students best and are therefore naturally at the centre of road safety education (ROSE 25, Chamberlain and Hook). RSE supports this by working with teachers before, during and after RYDA. Nevertheless, teachers cannot be expected to have expertise or training in evidence-based road safety education (in addition to their own driving knowledge and attitudes). Effectiveness of the curriculum materials approach in attitude and behaviour change is dependent on them directly addressing those behaviours, that teachers are accountable to carry them out, that they recognise them as helping fulfil curriculum requirements, that they have the time required given their senior school secondary school assessment accountabilities, and that there is professional support based on best practice. In the current senior assessment and qualification environment, that is a big ask.

We have observed hundreds of teachers at RYDA programs. Most involve themselves enthusiastically, but only a small proportion has professional experience in road safety education or health promotion through behaviour change. This applies even to some PE/health teachers who are commonly accountable for student well-being topics. With the age cohort approaching driving age, content and delivery becomes more sophisticated and the danger of poor or incorrect messaging increases. When teachers become spontaneously involved in student discussions at RYDA programs, despite their best intentions, they sometimes fall back on anecdotes of their own experience as drivers.

We surveyed teachers on RYDA's connection to the curriculum. 32% said it directly supported the school's curriculum, 21% said RYDA probably directly supported other curriculum areas without any alteration, 26% it could support their or other curriculum areas but would require adaption for the classroom, and another 25% said RYDA could support their or other curriculum areas with classroom follow up. Only 21% felt RYDA had a weak or no connection.

*Curriculum does not have much of this (maybe some drugs and some physics and some choices work) which is why this programme is so very suitable for us.*

Year level coordinator, New Zealand

*Road safety is not part of our curriculum which is why RYDA has such value*

Senior school manager, Qld

Road safety knowledge, skills and attitudes have additional connection through both curricula and cross-curricula elements in both countries. The Australian Draft Curriculum contains **General Capabilities** and those most relevant to road safety are *Personal and social capability* and *Ethical understanding*.

*Personal and social capability* is an important part of being safe in and around cars and other vehicles. Decision-making ability, social skills and personal resilience are keys to being a low-risk driver or a passenger. Road safety education that involves young people in developing and practicing appropriate strategies contributes to building this capability.

*Ethical understanding* involves evaluating right and wrong human actions. Road safety behaviour involves building a strong personal and socially oriented ethical outlook with an awareness of the influence that their values and behaviour have on others, especially considering the huge consequences of wrong decisions. Best practice road safety education places students in decision-making situations and supports them to discuss outcomes, and consider what effect their decisions have on others.

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<sup>39</sup> Senserrick, University of NSW, Unpublished comments, RSE Advisory Council, 2014.

In the New Zealand Curriculum Framework the equivalent curriculum elements are the **Key Competencies**. Those most relevant in this context are *Managing self* and *Relating to others*.

*Managing self* is key to being a driver or passenger. Key strategies in a car include meeting challenges, knowing when to lead, when to follow, and when and how to act independently. This is a key to managing peer pressure, distraction and risks (speed, alcohol etc). Resilience and reliability are important elements of this.

*Relating to others* points to two road safety aspects. One is social responsibility - the recognition of the essentially social nature of driving - sharing the road, thinking about the impact of your actions, and exercising courtesy. The other is managing interpersonal relationships with friends and family when planning and taking trips to negotiate safer outcomes. Protecting friends from harm is an effective motivator when changing young driver attitudes.

Road safety is an appropriate context for resilience education, for example as contained in the Victorian *Building Resilience* document<sup>40</sup>, and in addition much of the knowledge, skills and attitudes developed at RYDA contribute to schools' health and well-being framework a requirement in all jurisdictions.

More than half of surveyed teachers said RYDA linked with other related programs, or initiatives in their school. Commonly these were life skills, pastoral, personal development and well-being programs. Physical education/health programs were mentioned as well as specific programs such as Crossroads (New South Wales). Police, fire service and ambulance services were less frequently mentioned, with a few mentioning programs run by motoring associations (RACV, Defensive Driving) and students against driving drunk (SADD). And 57% of surveyed teachers said their school had policies or procedures which RYDA connects with (e.g. health promotion, injury prevention, road safety, car use) mentioning a range of health programs and safety procedures for students bringing vehicles to school.

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<sup>40</sup> Building Resilience: Social & Emotional Learning Materials Year 11-12 VCE/VCAL, Department of Education and Early Childhood Development (DEECD), Melbourne, Undated





## Section Two: Methodology & the Story of Change

Presents the methodology used for the study and presents a theorised story of change focusing mainly on the student participants while also looking at other impacts caused by the program.



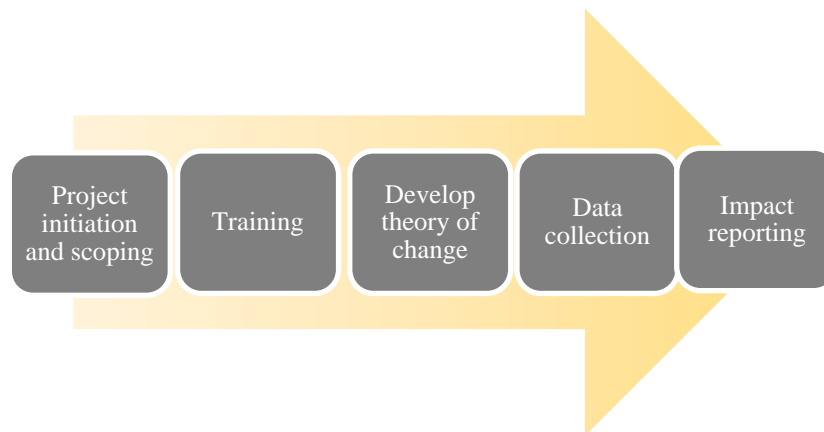
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## SECTION TWO: METHODOLOGY AND THE STORY OF CHANGE

The Study was conducted in phases. Initially RSE liaised with Net Balance, our research partner, and conducted formal workshops with their staff to:

- Outline the evaluation approach;
- Gain an understanding of the study methodology;
- Define the stakeholders who benefited from the initiatives and partnerships, prioritising these by impact;
- Suggest outcomes that may have occurred for these stakeholders as a result of their involvement and developed a "Theory of Change" logic model; and
- Provide suggestions for ways that these outcomes could be measured (appropriate indicators and existing data that could validate the outcomes).

The diagram below summarises the development steps of the Study.



Outcomes are the changes that occur as a result of an activity. Focusing on outcomes, as distinct from outputs, helps us better understand the social impact of activities rather than simply cataloguing the delivery of activities. Outcomes-based measurement allows us to move from listing what we do, to examining the extent of the value we create. The rest of the Study primarily looks at the range of feedback that provides the evidence for this.

This Study aims to measure change

- change in knowledge (e.g. the relationship between stopping distances and speeds),
- skills (e.g. having new strategies to speak up in a car),
- attitudes (e.g. changing your mind on what's acceptable while driving and what's not) and
- behaviour (putting risk lowering strategies into use).

It also aims to find out how these changes, primarily to students, have the capability to reduce road trauma and build a culture of road safety in society.

### Value measurement approaches

The approach the Study uses describes the value added using a range of quantitative and qualitative measures viewing the benefits from the perspective of the participant. We identified the program stakeholders and traced their story, matching it to the key road safety issues for young people and identifying the ways it might impact on knowledge, skills and attitudes, and the take-up of these elements.

When a broad evaluation of RYDA impact was first conceived, we considered using a Social Return on Investment methodology. SROI uses a financial ratio to express monetised inputs and outcomes for key stakeholders to arrive at a dollar figure to quantify net benefit.

SROI methodology factors in deadweight, attribution and drop-off. Deadweight measures outcomes that would have happened anyway (without the intervention) and deducts them from the calculation. Attribution assesses how much of the outcome was caused by the intervention - say 25, 50 or 75%. Drop-off accounts for the loss of effectiveness of measures over time. All are factored in to avoid over-claiming economic value created.

Measuring deadweight and attribution in road safety education is complex and beyond the resources available for this Study. If research was conducted on proven measures for reducing young driver crashes it would likely find that a combination of education, advertising, enforcement (including GLS) and road engineering was responsible. To disaggregate these factors would involve, for example, calculating how much acceptance of a particular road safety measure derives from a specific intervention when young people receive multiple messages (safe and unsafe) from a variety of sources throughout their lives.

To help us assess SROI methodology we modelled the hypothetical monetary value of RYDA impacts through crash reduction. Initially the calculations looked very encouraging - the prevention of one crash leading to paraplegia or quadriplegia, for example, justified the cost of a program like RYDA after factoring in attribution and deadweight.

A UK study using SROI methodology<sup>41</sup> on the contribution of driver training programs run by the Institute of Advanced Motorists to the overall improvement in road safety from 2007 to 2009, assumed that its influence equated to 2.5% of that improvement after allowing for deadweight, attribution and drop-off.

The methodology was not used, however because without proving crash reduction, the chain of causality cannot be verified.

The current social impact study approach relies less on calculating attribution and deadweight than SROI methodology given that proving a direct line of causality is reduced in importance (but still important to consider).

More important, perhaps, is the difficulty of measuring the extent of causality itself.

Kinnear et al, in a report to the UK Department of Transport, scanned and critiqued the existing research<sup>42</sup> and conclude that there are almost no studies which reliably prove trauma reduction results from road safety education interventions. To be authoritative in relation to the causes of crashes, an SROI study requires at least existing research that proves an intervention reduces crashes, deaths and injuries. One recent study<sup>43</sup> in the US shows cautious support for road safety education improving casualty data, although the authors were careful to note the limitations of the data.

Broadening the notion of outcomes, the UK Report broadens the discussion of road safety education effectiveness beyond trauma reduction to encompass how interventions might support and legitimise legislation and enforcement, and support the development of positive road safety culture in society. In other words, the value to society of road safety education might be in both direct prevention of crashes and casualties, and the support for a safety culture that education can provide to mechanisms that do reduce the risk of crashes and casualties.

This second goal deserves further study as, conversely, an increasingly positive road safety culture must contribute to lower crash rates through widespread acceptance of safety measures.

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<sup>41</sup> Social Impact Evaluation using Social Return on Investment, Institute of Advanced Motorists (IAM)/Baker Tilly, London 2011

<sup>42</sup> Kinnear et al. *Novice Drivers: Evidence Review and Evaluation*, Transport Research Laboratory report commissioned by Department of Transport, UK, 2013. pp 35-36

<sup>43</sup> Mayhew, et al *Evaluation of Beginner Driver Education Programs*, Studies in Manitoba and Oregon, AAA Foundation for Traffic Safety, Washington DC, 2014

A model used to describe the broad range of road safety measures is the safe system approach (shown below<sup>44</sup>), a policy framework adopted by most government transport agencies in both countries. Its underlying philosophy is that:

- People make mistakes
- People have a limited tolerance to injuries
- Safety is a shared responsibility



According to the Victorian Transport Accident Commission, which is currently promoting the *Towards Zero* public education campaign, one of the challenges of truly adopting safe system thinking within road safety is informing and engaging the community regarding the concept<sup>45</sup> which is the philosophical basis and approach of the RYDA program.

The current Study retains the broad approach of the SROI - evidencing a story of change for the program stakeholders - but does not demand proof of causality on casualty reduction although it arrives at a conclusion in relation to how best-practice road safety education provides substantial benefits for society.

We also wanted a broad evaluation study to inform us on future improvements to RYDA, and in the way we measure RYDA impact long term. In that case the current approach was a better fit for purpose.

### Developing robust data and evidence

After confirming a lack of robust evaluation and systematic evidence of the impact of road safety education the UK report goes on to recommend road safety education providers present a logical model that justifies why and through which mechanisms their interventions should work. This is what we have done and is discussed in the next section.

Full randomised control trials (RCTs) are seen as the only means of proving effectiveness, yet present considerable challenges to even large scale providers such as RSE. They are resource heavy, often beyond the reach of not-for-profits and can lead to the diverting of internal resources away from the primary purpose of their work, even with a research partner assisting. Not-for-profits may also have reservations if it requires handing over control of the process to a research organisation or university.

RCTs require a long duration to arrive at a result which may be obsolete before it is published. The RYDA program, for example, is reviewed regularly and therefore the results, although relevant, could paint a historical picture that becomes the sole judge of the worth of the program for years afterwards.

### Comments on current study methodology

Our own data collection and methodological issues need explanation in terms of process and reliability. We used both hard copy and electronic surveying. Hard copies were administered at program days and sometimes sent to teachers with students completing before and after the program. Electronic surveying relied on sending links to teachers who would then send them to students or, sometimes, supervise them in a classroom with students on school desktop computers or their own laptops or tablets. Although we asked teachers to supervise all surveying, we know this did not always happen. Relying on teachers was hit and miss as they were always time poor and sometimes preferred students to do it as homework.

<sup>44</sup> <https://www.nzta.govt.nz/resources/statement-of-intent-2014-2018/2013-16/section-2-priorities/>

<sup>45</sup> <https://www.tac.vic.gov.au/road-safety/the-safe-system>

We trialled electronic submission on the day with students using smart phones. This has potential but had issues such as student collaboration in answering questions and student reluctance to use their own data allowance without wifi.

These issues affect reliability and validity of this survey feedback. Mindful of this, the most recent pre and post feedback was collected using paper surveys at programs.

Focus groups were more reliable but, again, rely heavily on teachers to organise. The students were usually willing, especially where food was provided, but organising them was demanding if done on a non-paid basis.

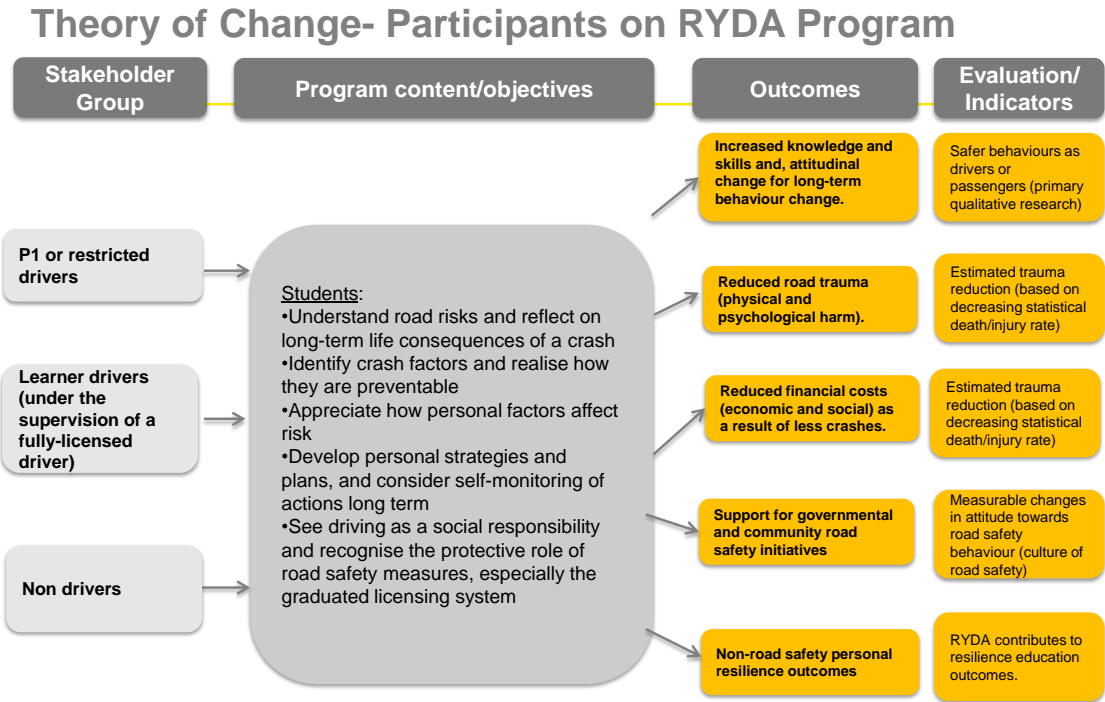
Lastly, some of our surveying, particularly the website competition and some of the student surveys were skewed towards female responses. Girls, it appears, generally respond better than boys.

**A story of change**

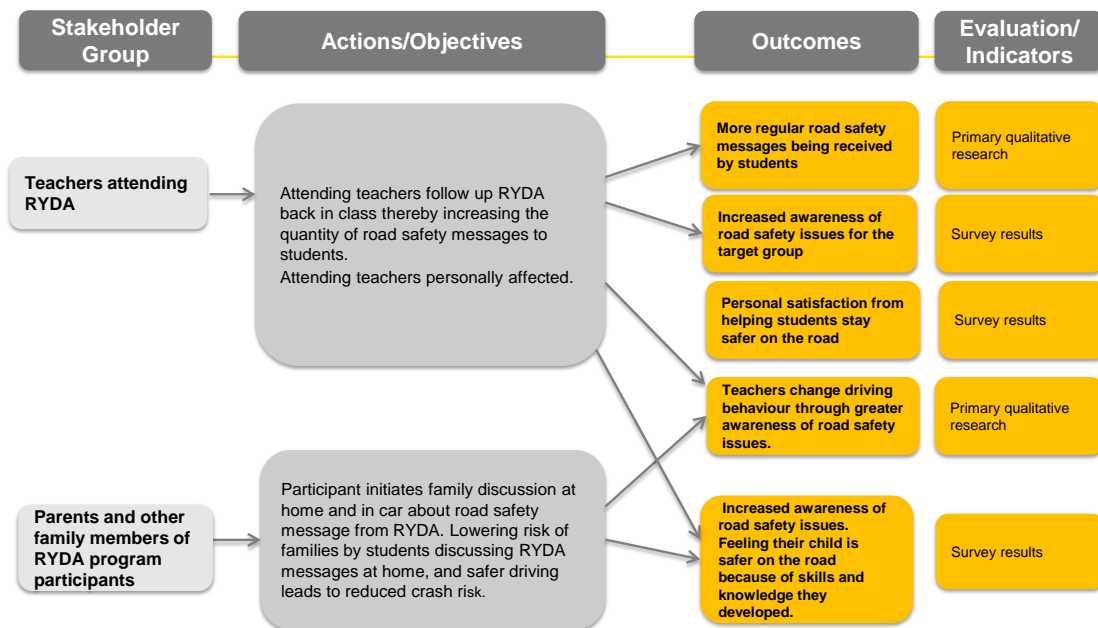
At an early point of this Study, a draft theory of change was developed with Net Balance as a starting point in helping us identify the stakeholder groups involved and how they were influenced in relation to the intermediate and ultimate outcomes of the program.

The diagram below summarises the theory of change - how the link between RYDA and the final outcomes works. It is intentionally high level and relies on the evidence which is described in the following section.

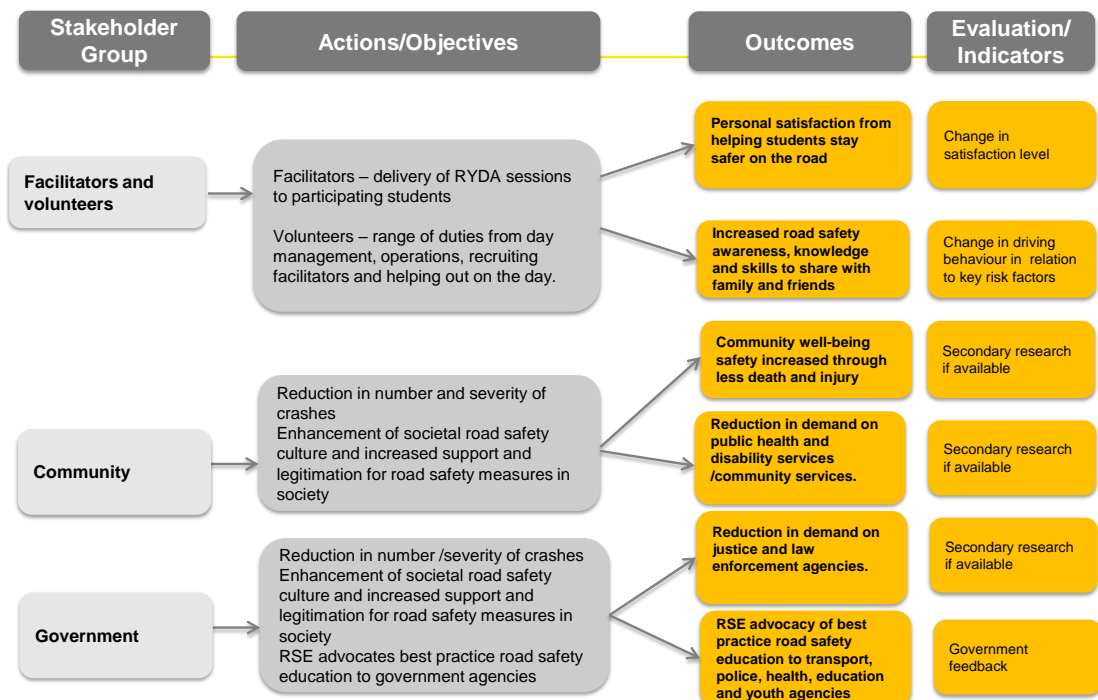
The Study therefore measures the extent to which the RYDA program addresses the proven risks of young people on the road, exhibits the proven low-risk behavioural measures represented by the learning outcomes; and is effective in communicating the measures through take-up of knowledge, skills, attitudes and behaviour.



## Theory of Change- Other stakeholders

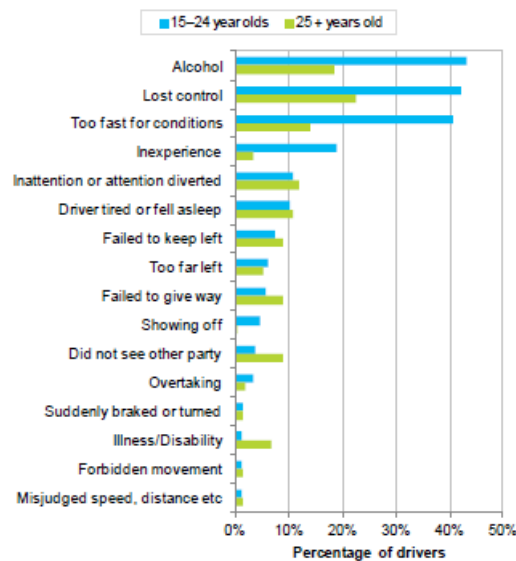


## Theory of Change- Other stakeholders



As previously discussed, young driver crash factors are well understood having been identified through jurisdictional crash data. A good summary is shown in the diagram below, from the New Zealand Ministry of Transport, and, for this purpose, we would expect the pattern to be the same in Australia.

Figure 8: Driver contribution to fatal crashes by age group (2009–2013)



The Version 3.0 program changes were designed to focus more sharply on the key issues shown in Figure 8<sup>46</sup> as well as examining the legal and moral framework of road safety, the role of the police, and personal influences on risk.

The next section identifies how RYDA content addresses these proven risks and its other learning outcomes. This helps us follow the story of change for students, as well as teachers, parents, facilitators and volunteers as they experience the day and its after-effects.


<sup>46</sup> Ministry of Transport, Young Drivers, 2014.

## Analysis of Outcomes by stakeholder Students

### Program content, outcomes and evaluation - understanding road risks

The program content is the link in addressing the main causes of crashes of young novice drivers. To increase awareness of the statistically proven road risks, each of the key issues are "to the front" at RYDA. Students are exposed to key facts and the relevant research backing them, and are provided an opportunity to discuss each in relation to safer behaviours. The linkage with the program content and evaluation evidence is described here.

The Program Outcome column for students lists the range of outcomes derived from the theory of change diagrams, and we have asterisked the outcomes which are covered by our evidence, however modestly, or extrapolated from secondary sources.

Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
Speeding and seatbelts (Speed and Stopping session)	<p>Students</p> <ul style="list-style-type: none"> <li>Predict, observe and prove the rule of "double your speed, quadruple your stopping distance".</li> <li>Investigate physical and human factors that affect stopping distance (inc. reaction time).</li> <li>Experience demonstration car hitting a dummy at different speeds and examine the concept of wiping off half the speed in the last quarter of the stop and the disproportionate effect of small increases in speed on crash impact.</li> <li>Guess the safe following distance behind a car, prove, and learn to measure, the three second safe following gap.</li> <li>Apply the physics of stopping to the safety features of a car, focusing particularly on how seatbelts work and the correct wearing of them.</li> </ul>	<p>Speed and Stopping</p> <ul style="list-style-type: none"> <li>Understand that small increases in speed have a big effect on stopping distance and impact</li> <li>Relate stopping distance to human factors (distraction and impairment), road conditions and vehicle condition</li> <li>Prove safe following gap (3 second rule)</li> <li>Understand the protective role of seat belts and identify other car safety features</li> <li>Encourage use of ANCAP / other web sites to choose a safer car</li> <li>Raise awareness of tyre checks and other maintenance tasks as a safety measure</li> </ul>	<ul style="list-style-type: none"> <li>Increased knowledge and skills and, attitudinal change for long-term behaviour change*</li> <li>Reduced road trauma (physical and psychological harm).</li> <li>Reduced financial costs (economic and social) as a result of less crashes.</li> <li>Support for other community and governmental road safety initiatives*</li> <li>Personal resilience strategies learnt*</li> </ul>	<ul style="list-style-type: none"> <li>Student survey/ focus group feedback on knowledge, attitude and behaviour change.</li> <li>Website feedback on learning from session</li> </ul> 



Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
Speeding and seatbelts (other sessions)	<p>Students</p> <ul style="list-style-type: none"> <li>• Relate mind-state and rushing to speeding, and distraction.</li> <li>• View and discuss the NZTA <i>Mistakes</i> video advertisement in relation to speed management in allowing for the mistakes of others.</li> <li>• Learn the penalties (fines, demerit points and criminal charges) for speeding infringements.</li> </ul>	<p>Genevieve's Story</p> <ul style="list-style-type: none"> <li>• Analyse a crash and its contributing factors</li> <li>• Recognise alcohol, drugs, fatigue and speed as key risk factors (Rights and Responsibilities)</li> </ul>		
Distraction (Hazards and Distractions session)	<p>Students</p> <ul style="list-style-type: none"> <li>• Discuss the science of distraction, and strategise to break the habits of mobile phone use and distracting others in the car.</li> </ul>	<p>Hazards and Distractions</p> <ul style="list-style-type: none"> <li>• Define hazards, distractions and risks and give examples of each</li> <li>• Learn and appreciate the importance of hazard perception strategies</li> <li>• See the GLS system as a protective mechanism (in relation to phone use, passengers and other restrictions)</li> <li>• Recognise how mobiles and passenger distractions impair hazard perception and car safety</li> <li>• Evaluate positives and negatives of distraction reduction strategies in relation to future plans</li> </ul>		
Distraction (Speed and Stopping session)	<p>Students</p> <ul style="list-style-type: none"> <li>• Link distraction to reaction time and stopping distance</li> </ul>	<ul style="list-style-type: none"> <li>• Relate stopping distance to human factors (distraction and impairment), road conditions and vehicle condition</li> </ul>		
Impairment (Rights and Responsibilities session)	<p>Students</p> <ul style="list-style-type: none"> <li>• Learn science of impairment by fatigue, alcohol and drugs</li> </ul>	<p>Rights and Responsibilities</p> <ul style="list-style-type: none"> <li>• Recognise alcohol, drugs, fatigue and speed as key risk factors</li> </ul>		




Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
	<ul style="list-style-type: none"> <li>Watch the <i>Don't Trust Your Tired Self</i> video advertisement (Transport for NSW),</li> <li>Question and answer session with Police on alcohol and drug enforcement, and penalties.</li> </ul>	<ul style="list-style-type: none"> <li>Appreciate the role of the Graduated Licensing System in protecting them and getting your licence as an agreement with the GLS conditions</li> <li>View personal road safety in a social responsibility context.</li> </ul>		

\* Outcomes which are covered by the evidence source

### Program content, outcomes and evaluation - reflecting on consequences

The concept of small mistakes leading to disproportionate consequences features in two RYDA sessions which contain content that, while designed not to instil fear, or use graphic imagery, clearly and relatably shows the impact of serious road crashes on young people, their friends and the wider community.

Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
Consequences of crashes	<p>Students</p> <ul style="list-style-type: none"> <li>Appreciate vulnerability of head (brain) and spinal cord through learning basic physiology</li> <li>Listen to a story of someone with lifelong brain or spinal injuries resulting from a crash focusing on the causes of the crash, and its life-changing after-effects</li> <li>Reflect on how their personal hopes and dreams would be affected by a similar crash in areas of their life like financial cost, career aspirations, and contact with friends, relationships, effects on family and physical alteration to their house.</li> </ul>	<p>After the Crash</p> <ul style="list-style-type: none"> <li>Understand the fragility of head and spine in the case of a crash</li> <li>Appreciate the consequences of car crashes through crash survivor story</li> <li>Apply crash presenter experiences (self and others) to their life plans</li> <li>Accept it could happen to them but that crashes are preventable by taking action to lower risks</li> </ul>	<ul style="list-style-type: none"> <li>Increased knowledge and skills and, attitudinal change for long-term behaviour change*</li> <li>Reduced road trauma (physical and psychological harm).</li> <li>Reduced financial costs (economic and social) as a result of less crashes.</li> <li>Support for other community and governmental road safety initiatives*</li> </ul>	<ul style="list-style-type: none"> <li>Student survey/ focus group feedback on knowledge, attitude and behaviour change.</li> <li>Website feedback on learning from session</li> </ul> 


Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
	Students <ul style="list-style-type: none"> <li>View and discuss a story (short film) of a young person, and her friend and a mistake that costs their lives.</li> <li>Analyse the crash, identifying possible crash factors</li> <li>Discuss preventative measures such as preplanning situations where impulsive decisions could be made, and come up with strategies for controlling mindstate.</li> </ul>	Genevieve's Story <ul style="list-style-type: none"> <li>Appreciate the extent of the 'ripple effect'* after a crash</li> <li>Identify strategies that protect self and friends in risky situations</li> <li>Appreciate the benefits of having a plan for decision-making in risky situations</li> </ul>	<ul style="list-style-type: none"> <li>Personal resilience strategies learnt*</li> </ul>	
	Students <ul style="list-style-type: none"> <li>Watch and discuss a short student-directed film about the consequences of not speaking up in a car (as a passenger)</li> <li>Consider and critique strategies for speaking up in a car</li> </ul>	The Personality Test <ul style="list-style-type: none"> <li>See importance of practicing low-risk behaviours and monitoring car behaviour in future</li> </ul>		

\* Outcomes which are covered by the evidence source

### Program content, outcomes and evaluation - appreciating personal factors

Hatakka et al and their GDE model described earlier explains the need for including personal and attitudinal factors in the total picture of behaviour change. This includes temporary mind-state, personality factors ("you drive as you live"), and long-term monitoring of cognitive factors by students as life circumstances change over time.

Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
Appreciating how personal factors affect risk (The Personality)	Students <ul style="list-style-type: none"> <li>Discuss how the personality influences decision-making</li> <li>Take an individual test where they respond to a series of statements under the</li> </ul>	<ul style="list-style-type: none"> <li>Identify key personal factors and mind state (mood) that contribute to risk and apply to a real road risk situation</li> <li>Develop a personal risk profile</li> </ul>	<ul style="list-style-type: none"> <li>Increased knowledge and skills and, attitudinal change for long-term behaviour change*</li> </ul>	<ul style="list-style-type: none"> <li>Student survey/ focus group feedback on knowledge, attitude and behaviour change.</li> <li>Website feedback on learning from session</li> </ul>

Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
Test session)	categories of Knowing Yourself, Self Control, Thinking Social, Risk Awareness, and Speaking Up <ul style="list-style-type: none"> <li>Explore their own ability to exercise self control and apply this to drivers</li> <li>Appreciate the necessity for speaking up for passengers in concerning situations in a car</li> <li>Role-play, discuss, and critique strategies they could use in difficult situations.</li> </ul>	<ul style="list-style-type: none"> <li>Select ways to boost personal low-risk attributes</li> <li>See importance of practicing low-risk behaviours and monitoring car behaviour in future</li> </ul>	<ul style="list-style-type: none"> <li>Reduced road trauma (physical and psychological harm).</li> <li>Reduced financial costs (economic and social) as a result of less crashes.</li> <li>Support for other community and governmental road safety initiatives*</li> <li>Personal resilience strategies learnt *</li> </ul>	

\* Outcomes which are covered by the evidence source

### Program content, outcomes and evaluation - developing strategies

Four of the sessions involve students discussing and planning strategies for car scenarios.

Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
Developing strategies	Students <ul style="list-style-type: none"> <li>Prove safe speed and the safe following gap strategies,</li> <li>Learn the correct use of safety features, skills of tyre maintenance, and use the ANCAP car safety rating system.</li> </ul>	Speed and Stopping <ul style="list-style-type: none"> <li>Understand that small increases in speed have a big effect on stopping distance and impact</li> <li>Relate stopping distance to human factors (distraction and impairment), road conditions and vehicle condition</li> <li>Prove safe following gap (3 second rule)</li> </ul>	<ul style="list-style-type: none"> <li>Increased knowledge and skills and, attitudinal change for long-term behaviour change*</li> <li>Reduced road trauma (physical</li> </ul>	<ul style="list-style-type: none"> <li>Student survey/ focus group feedback on knowledge, attitude and behaviour change.</li> <li>Website feedback on learning from session</li> </ul>

Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
		<ul style="list-style-type: none"> <li>Understand the protective role of seat belts and identify other car safety features</li> <li>Encourage use of ANCAP / other web sites to choose a safer car</li> <li>Raise awareness of tyre checks and other maintenance tasks as a safety measure</li> </ul>	<ul style="list-style-type: none"> <li>and psychological harm).</li> <li>Reduced financial costs (economic and social) as a result of less crashes.</li> <li>Support for other community and governmental road safety initiatives*</li> <li>Personal resilience strategies learnt *</li> </ul>	
	Students <ul style="list-style-type: none"> <li>Develop strategies in response to analysing possible crash factors in similar situations as the video.</li> </ul>	Genevieve's Story <ul style="list-style-type: none"> <li>Identify strategies that protect self and friends in risky situations</li> </ul>		
	Students <ul style="list-style-type: none"> <li>Discuss strategies for dealing with mobile phones and same-age passengers as distractions.</li> <li>Weigh up strategy implementation benefits with personal inconvenience</li> </ul>	Hazards and Distractions <ul style="list-style-type: none"> <li>Evaluate positives and negatives of distraction reduction strategies in relation to future plans</li> </ul>		
	Students <ul style="list-style-type: none"> <li>Evaluate individual strategies for self control and speaking up, particularly in relation to how a passenger could effectively deliver a hard message in a difficult situation, designed to produce a positive reaction of the driver.</li> </ul>	The Personality Test <ul style="list-style-type: none"> <li>Select ways to boost personal low-risk attributes</li> </ul>		
	Students <ul style="list-style-type: none"> <li>Apply speaker story (and advice where appropriate) to things they could do to prevent a crash like theirs.</li> </ul>	After the Crash <ul style="list-style-type: none"> <li>Apply crash presenter experiences (self and others) to their life plans</li> </ul>		



Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
	Students <ul style="list-style-type: none"> <li>Reflect on strategies to stay within the law in relation to alcohol, drugs, fatigue, speed and other key young driver risk areas through considering negative consequences of penalties (fines, demerits, loss of licence)</li> </ul>	Rights and Responsibilities <ul style="list-style-type: none"> <li>View personal road safety in a social responsibility context</li> </ul>		

\* Outcomes which are covered by the evidence source

### Program content, outcomes and evaluation - driving as a social responsibility

RYDA presents road safety as a social responsibility.

*"By signing that licence, you are agreeing to abide by the conditions of it. Every time you get in your car you need to be thinking of, not only following the rules, but doing everything you can to keep the people sharing the road with you safe."*

Hazards and Distractions session


*"You are sharing the road with all sorts of drivers - experienced, inexperienced, distracted, focused, drunk, sober - don't assume they are going to do the right thing. Crashes are usually caused by ordinary people making everyday mistakes. You can't control what the other person does, but as drivers there's a lot within your control to reduce your risks..."*

Rights and Responsibilities session

*"Are you socially responsible and look out for other people? Do you consider what effect your risk taking has on others?"*

The Personality Test session

Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
Driving as a social responsibility	Students <ul style="list-style-type: none"> <li>Hazard perception exercise shows collision avoidance with pedestrians and cyclists as legal and personal responsibility</li> </ul>	Hazards and Distractions <ul style="list-style-type: none"> <li>Evaluate positives and negatives of distraction reduction strategies in relation to future plans</li> </ul>	<ul style="list-style-type: none"> <li>Increased knowledge and skills and, attitudinal change for long-term behaviour change*</li> </ul>	<ul style="list-style-type: none"> <li>Student survey/ focus group feedback on knowledge, attitude and behaviour change.</li> <li>Website feedback on learning from session</li> </ul>

Key issue	Content (intermediate objectives)	Learning outcome	Program outcome	Evidence for change
	<ul style="list-style-type: none"> <li>Examination of GLS restrictions in context of driving as an agreement with government to abide by same</li> </ul>	<ul style="list-style-type: none"> <li>See the GLS system as a protective mechanism</li> </ul>	<ul style="list-style-type: none"> <li>Reduced road trauma (physical and psychological harm).</li> <li>Reduced financial costs (economic and social) as a result of less crashes.</li> <li>Support for other community and governmental road safety initiatives*</li> <li>Personal resilience strategies learnt*</li> </ul>	
	<p>Students</p> <ul style="list-style-type: none"> <li>Identify the part of the personality that deals with social cooperation and assess its influence on driver and passenger behaviour including their own</li> <li>Develop personal strategies for "thinking social"</li> </ul>	<p>The Personality Test</p> <ul style="list-style-type: none"> <li>Select ways to boost personal low-risk attributes</li> </ul>		
	<p>Students</p> <ul style="list-style-type: none"> <li>View ANCAP as an example of a government measure to reduce the impact of crashes on the community</li> </ul>	<p>Speed and Stopping</p> <ul style="list-style-type: none"> <li>Encourage use of ANCAP / other web sites to choose a safer car</li> </ul>		
	<p>Students</p> <ul style="list-style-type: none"> <li>View the effects of sustaining a life-changing injury (paraplegia, quadriplegia, or traumatic brain injury) on others</li> </ul>	<p>After the Crash</p> <ul style="list-style-type: none"> <li>Appreciate the consequences of car crashes through crash survivor story</li> <li>Apply crash presenter experiences (self and others) to their life plans</li> </ul>		
	<p>Students</p> <ul style="list-style-type: none"> <li>Consider the GLS as providing more freedom as young drivers gain experience</li> <li>Consider the effect of what they do on the road on others</li> </ul>	<p>Rights and Responsibilities</p> <ul style="list-style-type: none"> <li>Appreciate the role of the Graduated Licensing System in protecting them and getting your licence as an agreement with the GLS conditions</li> <li>View personal road safety in a social responsibility context</li> </ul>		
	<p>Students</p> <ul style="list-style-type: none"> <li>Appreciate the role of, and impact on, emergency service personnel, and others as result of serious crashes</li> </ul>	<p>Genevieve's Story</p> <ul style="list-style-type: none"> <li>Appreciate the extent of the 'ripple effect'* after a crash</li> </ul>		

## Teachers

While teachers are not the target group, their on-going influence is significant, more so because many of them attend the program. We hypothesise that the impact on teachers are four-fold.

The first and most powerful effect is building teacher commitment, and through providing them with resources enables them to prolong RYDA messages back at school. An associated influence is for teachers, by attending and observing the program, to apply best practice principles to their own teaching. The continuum diagram below, used by RSE in working with student teachers in university pre-service programs, summarises the best-evidence and governmental guidelines applied to a classroom context on the right hand side of the continuum, and practices that fail best-evidence on the left hand side.

Currently we have no detailed evaluation evidence for the amount of prolongation of program messages and this is an area for development in future.

The road safety education pedagogical continuum		
Fear approach	↔	Strategy building Optimism
External risks only	↔	Personalised risk factors in addition to external risks
Instructional	↔	Collaborative "Be your own coach"
Information deficit model	↔	Empowerment
One-off	↔	Continuous
Driver-focused	↔	Peer-protection and social responsibility focused

A second area of teacher impact is increased awareness of road safety issues for the target group. While the school's commitment in sending students to RYDA indicates they recognise road safety as a priority issue, convincing teachers, particularly heads of relevant departments who are key decision-makers in setting curriculum priorities is likely to lead to greater classroom follow-up. Teacher feedback discussed in the evidence section regarding RYDA linkage to the curriculum generally supports this.

The teacher survey evidence supports the third area of impact - personal satisfaction from helping learner drivers. More than half of attending teachers indicated this impact according to survey feedback. Lastly, changing teacher driving behaviour where we know 44% of teachers say they will share road safety knowledge and skills with friends and family. We currently have no feedback on whether this translates into behaviour change and this is an area for development.

## Parents

Parents are involved in the program through the flow-on effects of the day. Parents seldom attend the program themselves.

The hypothetical benefits for parents of RYDA attendees are reduced physical and psychological harm to family members, increased awareness of road safety issues (through their children), and feeling their son or daughter is safer on the road because of the program. We have good survey evidence on the extent of discussion with parents after programs, and perceptions of their effectiveness, discussed in the next section. The evidence for direct harm reduction is weaker.

## Facilitators and community volunteers

Facilitators and community volunteers have high pre-existing levels of commitment to youth road safety. The impacts on these two groups we hypothesise as being greater road safety awareness, knowledge and skills to share with friends and family, and, by implication, intentions to change



behaviour, plus personal satisfaction from helping learner drivers to be safer on the road. Although far less involved in the flow-on effects on the students, the personal effects can contribute to building community road safety awareness.

### **Government and Community impacts**

A reduction in youth road trauma represents a net benefit to government and the community. Hypothetically, the strongest effect is in the reduction in economic and social costs of road crashes leading to a net increase in quality of life and social well-being although the evidence of RYDA leading to this directly is not robust.

Road safety education advocacy is another aspect of social impact. RSE works with governments and their agencies to advocate for best practice education in general and RYDA in particular. We meet and correspond with governments and their agencies regularly to discuss the guidelines. We also provide best practice guides for teachers using the principles and guidelines set by government and discussed in a previous section.

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## **Section Three:**

# **Evidencing the Story of Change**

**Describes the evidence for the hypothesis with a more detailed profiling on the stakeholder groups and an analysis of their feedback on personal and social impacts.**

# 3

## SECTION THREE: Evidencing the story of change

### Methodology

To evidence change we used surveys, focus groups and other feedback collected over five years. A tabular summary of the surveys and focus groups follows.

### Focus groups

Focus groups summary			
Group name	Respondent group	Location	
1. Net Balance focus groups	Students	New South Wales	2012
2. Revision focus groups	Students	Australia / NZ	2014
3. St Charbles focus group	Students	New South Wales	2015
4. Net Balance focus groups	Teachers	New South Wales	2012
5. Net Balance focus groups	Parents	New South Wales	2012

In December 2012 RSE undertook, in collaboration with Net Balance, a series of focus groups (1, 4 and 5) with students, teachers and parents as the starting point for evidence gathering.

They involved a range of schools in New South Wales who had attended RYDA in the last 18 month period. The schools represented a range of urban-rural co-ed single sex, and government-Catholic-private (participating schools listed as Appendix 3).

The Net Balance focus groups were supplemented by a further series (2) in 2014 during the RYDA 3.0 revision process in Melbourne, Sydney, Brisbane and Auckland.

The most recent student focus group (3) was November 2015 at St Charbles College, Punchbowl, Sydney, a Maronite Christian co-ed. The students had participated in RYDA 12 months previously. A follow-up teacher focus group was also held at this time at Genesis Christian College in North Brisbane.

Against the range criteria, schools were selected on their availability and willingness to participate.

### Surveys

RSE's surveys have evolved since 2012 from paper to mainly electronic. The full list of surveys in this Study is:

Survey summary (covering Australia and New Zealand)			
Survey name	Respondent group	Survey type	
1. Impact survey	Students n=226	Impact: pre + post identical cohort	2015
2. Program survey	Students n=1120	Impact: post	2015
3. Revision survey	Students n=550	Impact & process: post	2014
4. Teacher survey	Teachers n=100	Impact & process: post	2015
5. Teacher revision survey	Teachers n=150	Impact & process: post	2014
6. Teacher survey (RYDA 2)	Teachers n=280	Impact & process: post	2014
7. Parent survey	Parents n=99	Impact: post	2015
8. Rotary revision survey	Volunteers n=55	Impact & process: post	2014
9. Rotary stock-take survey	Volunteers n=91	Impact & process: post	2015
10. Facilitator revision survey	Facilitators n=118	Impact & process: post	2014
11. Facilitator stock take	Facilitators n=73	Impact & process: post	2015

The 2015 RSE impact pre and post survey (1) involved more than 200 students from Sydney, Melbourne and Brisbane in October last year. It was paper based and traced each respondent individually through a unique identifier. 159 male and 66 female students responded, of whom 128 held learner permits, 14 provisional licences and 75 hadn't started learning to drive.

A parallel post-only survey (2) has been running since the introduction of RYDA 3.0 in February 2015. With more than 1100 responses focusing on student perceptions of RYDA impact.

Four other surveys were initiated at the start of the RYDA 3.0 revision process in early 2014. One asked students for feedback on the current program to inform the revision in 2014 (3). 550 responses were received. Similar surveys were used with teachers (5), Rotary volunteers (8), and facilitators (10). In 2015 the RYDA 3.0 stock-take involved further surveying of the last two groups (9, 11).

## Other evidence

Other evidence summary			
Group name	Respondent group	Location	
Website competition	Students	Australia / NZ	2015
The Catalyst study	Students	Australia	2012

### Website competition

Students send comments about RYDA through the RSE website to win prizes. Many of the comments cast light on the changes that they experience, and commitments they make. To enter the draw students enter a unique code on their attendance certificate which is contained in the GPS booklet they use on the day. The question they answer is... "tell us what your favourite session was and why".

In the second half of 2015 close to three hundred entries were received. 96 of these were for Speed and Stopping, 82 for After the Crash, 45 for Genevieve's Story, 26 for The Personality Test, 17 for Rights and Responsibilities, and 14 for Hazards and Distractions. Although students are not asked directly about intentions for change, their comments give clues about what changes in awareness are likely to translate into behaviour change.

Additional feedback comes from a report on student perceptions on road safety education in general (not RYDA) in 2012 by Catalyst Consultancy and Research. 38 students, selected by their teachers, took part in the Study. Four students had been to RYDA.

### Evidence - Student

*"What I liked was that I was treated like I was on an equal level – the day was not measured on what I was taught but what I learnt"*

Male, 16, Sydney

*"After RYDA, that night I got in the car and realised that I didn't have to drive at 60, it was ok to drop back and drive under the speed limit"*

Male, 16, Sydney

*"I can recall a lot more from it because of the different methods of teaching. It was a successful day and got the message across".*

Female, 16, Auckland

Students are the target group and primary beneficiaries of the RYDA program. They receive information about the day beforehand and survey data indicates most have a good idea of what to expect - that they will be discussing road safety in groups, listening to experts, watching demonstrations, learn the statistics of crashing and helping them look after friends and themselves when riding in cars.

The Catalyst research (2012), a telephone and on-line survey of students and other stakeholders not associated with RSE or RYDA, on perceptions to road safety education, showed almost half of the students said they would 'definitely' attend a road safety education excursion with two thirds responding 'definitely' or 'probably'. Almost nine in ten felt road safety education was important and more than half 'very important'.

The research showed parents and schools were the most commonly used source of information about road safety and 82% of students said they would ask their parents about road safety while half said they would ask a teacher. Police and ambulance drivers are the most valued/influential with almost nine in ten students saying they value their opinions 'a lot'.

A third of students had heard of RYDA previously. One in five became aware through school. The four respondents who attended felt it was valuable, three 'extremely valuable'. All said they would 'definitely' recommend the program.

### The student survey respondents - overview

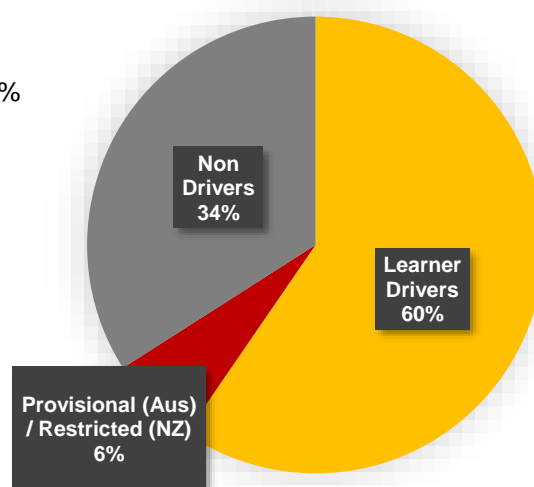
We analysed 3500 student survey responses in total. They represented the broad range of RYDA venues - rural and urban, high and low incomes. The geographic distribution was:

New South Wales	33%
Queensland	49%
South Australia	5%
Tasmania	6%
Victoria	4%
New Zealand	3%
Western Australia	1%

Females made up 61% of responses and males 39% (RYDA statistics indicate the gender split of RYDA participants is close to 54% female and 46% male).

Most (63%) of those students surveyed were 16 years old. 17 and 15 were the next most common ages. Their licence is illustrated in the graph (right):

The remainder were students who had passed their learner test but have not started supervised driving.



Before students come to RYDA they already know a lot about road safety. The survey results showed they were generally well informed about risks and that previous road safety messages influenced them. Speeding and alcohol are widely targeted in advertising and were first and second in what students thought were the top risks to young people in cars. It appears that there is *not* an information deficit here - young people are aware of the risks in many of the key areas. Other survey responses suggest there is, in general, a reasonable level of student perception for legitimacy in enforcement. These will be discussed later.

The survey responses showed that students get the same amount or more out of the program than they expected, 29% saying a lot more, 31% more and 33% about the same.

*I thought it would be a day of adults telling you to not drive but instead most modules were engaging and interesting.*

Female learner driver, Qld

*Stopping distances, and the awareness given has stuck in my head when driving now.*

Female learner driver, NSW

We analysed the most commonly occurring words in the **student learner driver** comments on the things that stayed in their minds (size of text indicates frequency of mention).

Accidents Useful Dangers Idea Safer Driver Alcohol  
 Aware Expect Knowledge Experience  
 Learn Course Road Speed Safety  
 Education Safe Laws Tips Unsafe Driving  
 Situations Facts Stopping Distance Potential  
 Better Driver Day off School Skills

The impression the comment graphic gives, mindful that the words are taken out of sentences only on the basis of frequency, is consistent with the intent of RYDA, and mentions of speed and stopping distance are the most frequently mentioned specific outcomes of the program.

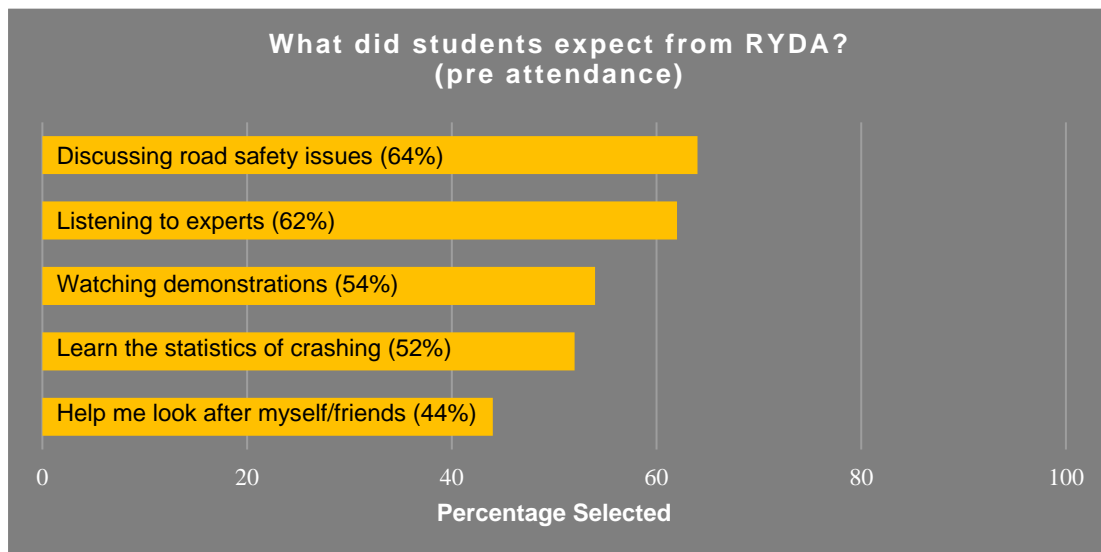
And the most commonly occurring words in the student **non-driver** (haven't started learning) comments on the things that stayed in their minds from RYDA were:

Attend Speed School Fun Safer Age Risks Lessons  
 Starting to Drive Improve Learn Education  
 Safety Regulations Road RYDA Course  
 Safe Compulsory Tips Licence Dangers Follow  
 Distance Safety Hazards Good Driver

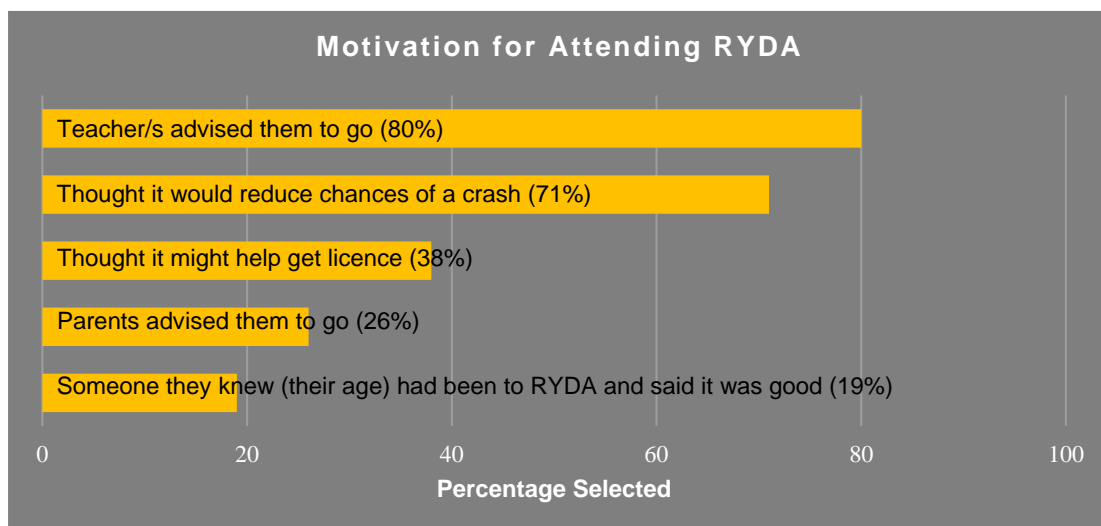
Although similar, non-drivers, not surprisingly, mentioned more general aspects of the day.

Focus group feedback indicated students, before attending, were interested in practical information - better understanding of the dangers, tips and tricks on how to drive, information on car safety, strategies for the car, and ways to be safer. Most students expected to hear personal experiences, e.g. from a crash survivor. They also wanted to have fun.

What did students expect from RYDA? These were the most frequent responses (students could select multiple answers);



Their own strongest motivation for attending was that (students could select multiple answers):



Students said the main messages from teachers prior to attending, according to our surveys, were: it was compulsory, it was going to be good for me, it was going to reduce my risks on the road (less chance of being in a crash), and it was part of the school's program. They also said that teachers recommended it from past years.

We asked them about the level of the content at RYDA - whether it was sufficiently challenging. 70% of students answered that it was at their level, 21% it was too simple, 6% way too simple, and 4% said it was hard and they were challenged. This was a response from late 2014, before the RYDA 3.0 revision. In response, changes were made including more discussion, a greater amount of research presented to increase the fact-base to do with hazard perception, brain function and distraction. In addition, the lowest rated session, one that many students said was covered by school health and science programs (involving alcohol, fatigue and drugs) was replaced with critical content moved to the new Rights and Responsibilities session.

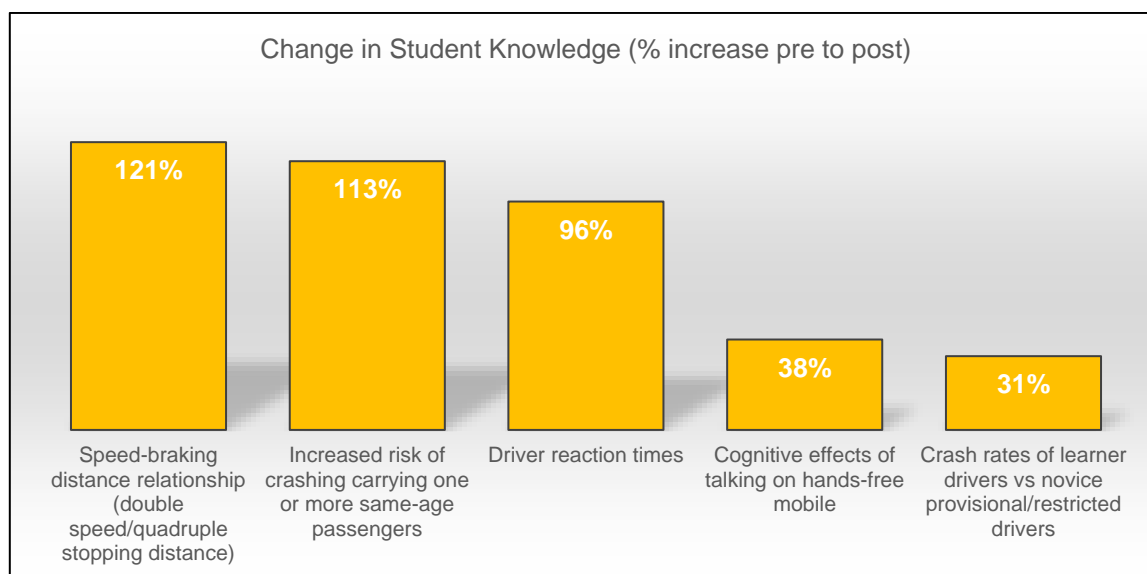


## Survey evidence

Survey results described in the previous section help us gain an overall picture of changes the students and other stakeholders experience as a result of the RYDA program.

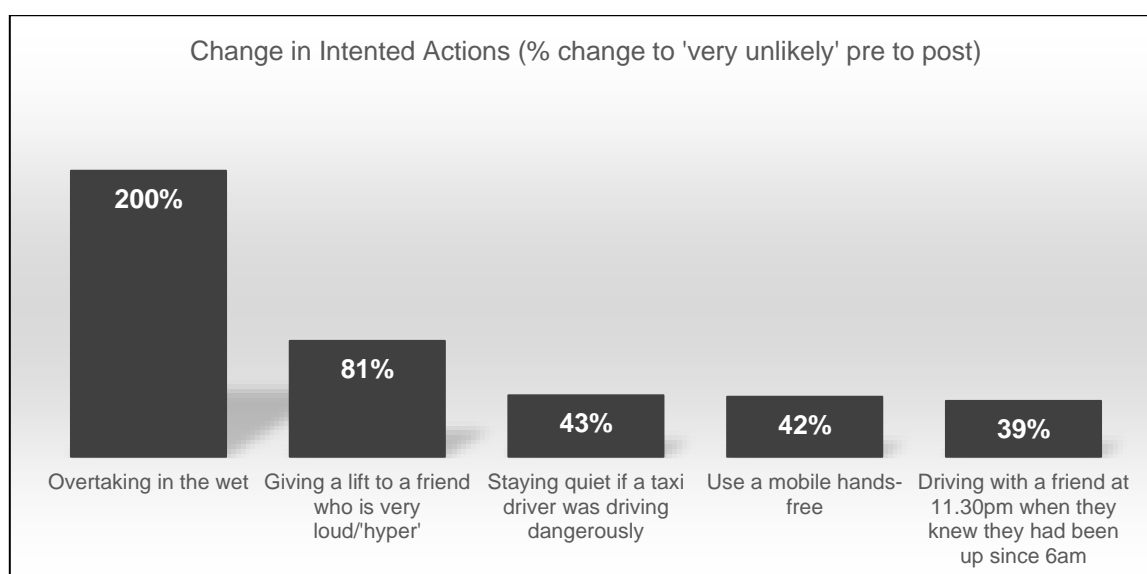
The pre and post survey (1) showed significant movement particularly in specific areas of risk reduction knowledge and attitude. The responses were from October 2015 and more than 200 students from Sydney, Melbourne and Brisbane responded with 159 male and 66 female students, of whom 128 held learner permits, 14 provisional licences and 75 hadn't started learning to drive. Unique identifiers were used to ensure the same students answered both surveys.

To assess the areas of RYDA where knowledge has increased the most we asked multi-choice questions. The results were:



Lower percentages were recorded for seatbelt wearing and drink driving, where perhaps, student exposure to government, school and community road safety measures account for prior knowledge.

We asked students to rate a list of personal actions they could take to lower their risks using a five point scale (very likely to very unlikely). The question asked, *"Imagine you have your licence. Please indicate how likely you would be to do the following:"*

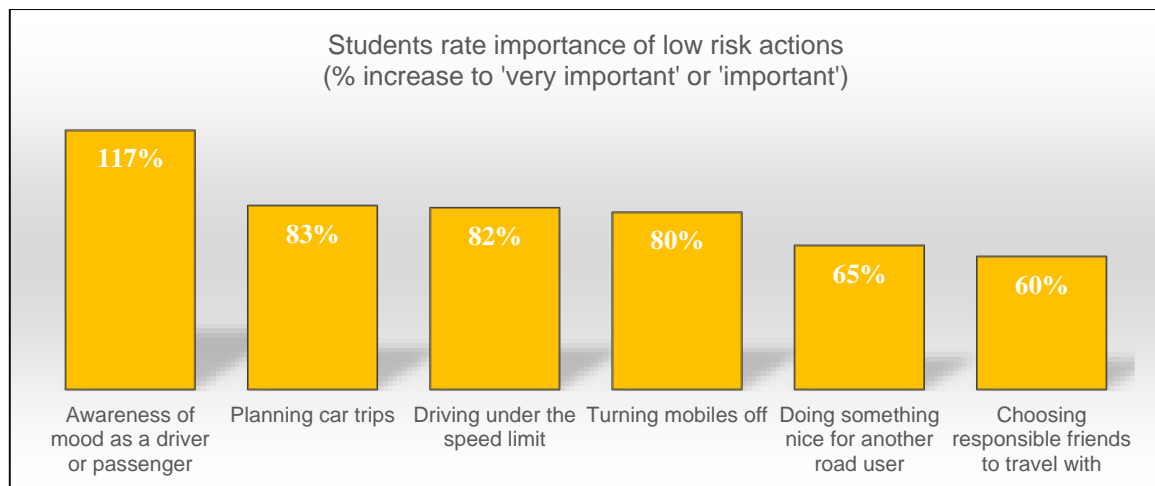


The change in "speeding or running a red light to get to an appointment on time", was 6%, "quickly checking a message on my phone when driving" was 3%, and "squeezing into the back seat of a car when there is no spare seatbelt" 5%. These questions showed a high level of unlikely responses in the pre-survey underlining the attitudes students had prior to the program.

Statements at the lower end of the change scale where "unlikely" pre scores were high were: not putting on a seatbelt if the journey was less than a block (3%), fudging my learner driver logbook to overestimate my hours (3%), driving with an adult who had drunk 3 cans of beer in the last 2 hours (-2%).

The top responses correlate strongly with program content. Overtaking in the wet rates very high, we surmise, because of both the Speed and Stopping demonstration, and the fact that Genevieve's Story crash was caused by overtaking (though not in the wet).

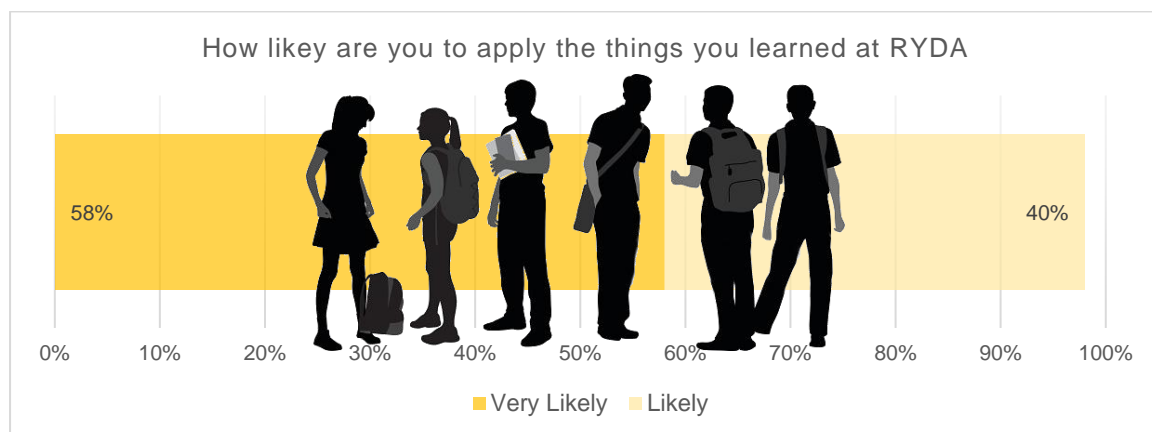
A further question was designed to test changes in awareness, again on a five point scale (very important to not at all important). The question was "Here is a list of things you might do to lower your road risks. How important do you rate each one?" The items where pre-post movement were highest were:



The six awareness items are core to program content.

Little movement from pre to post responses was recorded in driving drunk or drugged, obeying road rules, and wearing seat belts.

Immediately following the program most participants intend to make changes in their car-related behaviour. When students were asked, "When you are driving or a passenger in the future, how likely are you to apply the things you have learned at the RYDA day?"



We had asked this same question in two previous surveys (2, 3) the previous year. The same question with 1200 responses is shown in the second column.

	2015	2014
Very likely	37%	44%
Likely	37%	35%
Somewhat likely	17%	11%
Undecided	4%	0%

Students were invited to comment on their response to this question and these included:

*I liked the "stand up for yourself" when in the car with a dangerous driver take home message.*

*After seeing the things we did at the RYDA program and learning new things, we may not consciously make decisions from what we've learnt but the knowledge was definitely absorbed and it will influence future decisions whether we are aware of it or not (i.e. subconsciously).*

The research suggests that impact falls off over time unless reinforced through regular messaging. Other results in this Study show a drop-off in the strength of attitude and knowledge on the one hand<sup>47</sup>, but a perception, reflected in survey and focus group comments, discussed later, that RYDA messages strengthen general attitudes which are sustained over time, if not always acted upon.

This second post survey (2) asked a number of questions about the changes they experienced by attending RYDA. Shown are percentage figures of those that answered "very likely" or "somewhat likely" and, in addition, weighted average of all responses.

<i>Thinking back to the RYDA day as a whole, how likely is it to...</i>	<i>% very likely</i>	<i>% somewhat likely</i>	<i>% weighted average of all scores</i>
Increase my self-awareness of personal risks of driving and being a passenger	39	45	84
Make me a safer driver/passenger long-term through changing my actions	39	43	80
Reduce my chances of being charged for a traffic offence, e.g. speeding	33	40	73
Actually reduce my chances of a crash when I start driving unsupervised	30	46	75
Change my attitudes toward police enforcement and road safety advertising in a positive way	39	38	68

The figures suggest students self-assess awareness changes slightly higher than the likelihood of behaviour changes.

We then compared their road safety awareness pre-post more specifically across a number of items by asking, "How has participating in RYDA changed the way you think about your safety when driving and riding in a car?"

<sup>47</sup> Elkington; Evaluation of the RYDA road safety education program. Paper presented at the Annual Conference of the Institute of Public Works Engineering Australia NSW Division, NSW, Australia, 2005.

Please indicate your awareness of the following issues after attending, compared to before attending the RYDA program (sorted by No Change in ascending order)

	Much more aware %	More aware %	No change %
How small increases in speed can cause big changes in impact and crash trauma	52	38	9
How to increase / hone your own hazard perception skills	31	59	10
The life-long implications of a crash	52	35	13
The importance of using the ANCAP car safety rating system when buying a car	46	40	14
Knowing how to get my car risk factors down	31	53	16
How to reduce distractions in a car	34	49	17
The positive influence passengers can have on young drivers	33	50	17
How personality factors (including mood) affects risk	33	49	18
How the GLS (rules for young drivers) helps protect them and other road users	31	48	21
Driving is a social responsibility	34	45	22
The role the Police play in making the road safer for all motorists	30	46	23

The results underline the Speed and Stopping and After the Crash sessions as particularly impactful and, again, the areas of less change are likely to be influenced by existing knowledge or attitude, or student disinterest or lack of engagement with that part of the program.

*The day was very informative and intense. I loved it!*  
Female, 15, Killara High School, NSW

### Student focus group evidence

The focus groups allowed us to explore student responses more deeply across different schools, particularly their awareness change and behavioural intentions.

Students were asked, as an open question without prompted recall, what they remember most about RYDA. In all focus groups, they remember the Speed and Stopping session the most - keeping a three second gap and understanding the relationship between speeds and stopping distance. This is substantially new knowledge for most of them requiring a rethink of appropriate speed and safe following distance. Comments indicated students found this interesting and surprising information. It also matched feedback that participants preferred hands-on, practical activities.

*I remember the demo person hit by car, the impact. 10-20k's makes a big difference.*  
Student, Barker College, NSW

*Tailgating happens to us from others. I don't do it; I remember the 3 second rule from RYDA, hadn't heard of it before and learnt it at RYDA,*  
Student, Galston High School, NSW

Within focus groups particular sub-groups of students responded differently. Licence holders, (current provisional/restricted drivers) focused on "safer" or "better" driving and their most frequently mentioned areas of raised awareness were, in descending order: being more aware of hazards, won't ride in an overloaded car, feeling more cautious, turning off mobiles, knowing causes of accidents (sic), recognising the effects of fatigue, more awareness of risk, using peripheral vision, and not speeding.

Raised awareness reflected both general awareness elements, ("feel more cautious", and "feel more awareness of risk"), and specific behaviour changes/intention to change (e.g. "turning off mobile" and "using peripheral vision").

Learner drivers (those that are being supervised) reported increased awareness of road safety risks, have less distracted behaviour while in the car, greater awareness of keeping an eye out for micro sleeping, greater awareness of hazards, they feel more cautious, and were more likely to turn off their mobiles.

Non-drivers reported increased skills and confidence to raise concerns with drivers and said they would be less likely to get in a car with someone when feeling concerned. These students raised greater awareness of hazards, greater likelihood to refuse to ride in an overloaded car, and greater recognition in recognising the effect of fatigue.

*One episode was when I was getting into a car, but there were not enough seats for everyone so I decided to walk instead*  
Student, St Stanislaus College, Bathurst, NSW

Many students said that, following RYDA, they actively influenced parent and other family members by commenting while driving. The most common to parents were, in descending order, keeping to the three second rule, speed reduction, keeping calm and road rage reduction, "country driving", "bad habits", mobile phone use, indicating, and seat belts.

There was mixed feedback on the effectiveness of such comments with some students saying their parents responding negatively - "my parent's response not positive - (they said) "I already have my license"". This area, the short and long term effects on parents of pressure from driver age children, deserves further study.

Students from some groups reflected on their behaviour change as an influence from the program.

*I changed my behaviour because I don't want the guilt,*  
Female, Brigidine College, NSW

In all focus groups, and this also came through strongly in surveys, students mentioned the impact of listening to the After the Crash (formerly called Crash Survivor) speakers. This session had the most 'votes' in the Website competition.

We raised the issue of drop-off during the focus groups. Some felt that the impact of the course faded as time went by but most, not all, acknowledged that the learning at RYDA consolidated their overall attitudes and feeling toward road safety

*"Straight after course, yes, all the stories had a big impact and this lasted maybe 3 weeks as a strong impression and now still in the back of their minds."*  
Student, Barker College, NSW

*All feel they are much better drivers for having done the course and definitely an advantage to do it on your L's whilst you are learning and having it reinforced. Most things in a car are common sense but good to have things pointed out to you.*  
Killara High School focus group summary statement

### **Other focus groups**

The 2012 focus groups were supplemented by a further series in 2014 in Melbourne, Sydney, Brisbane and Auckland as part of the RYDA 3.0 revision feedback process.

Again, the main thing we asked the students was what they took from the day - something that caused a change in the way they thought or acted?

Across the groups, the most commonly mentioned personal behavioural intentions ('acted') were: always wear a seatbelt, be conscious of the passengers you invite in the car, have your own seat, don't show off "don't hoon", and I will speak up more now.

Students reported that they had checked ANCAP rating on parents vehicle - (in one focus group four out of 12 did this after the program).

Other personal actions were to always go 5kpm under speed limit and always be aware of surroundings (hazard perception). Actions related to parents were mentioned, for example not letting parents use phone on loud speaker, telling them to service the car, influencing them on car purchases, and tell parents to slow down.

Awareness (knowledge) outcomes were: knowing how fatigue affects driving (revive as a driver), what the ripple effect of a crash is on family and friends, and being more aware that things can "happen to anyone".

The most recent focus group was at St Charles College, Punchbowl, Sydney, a Maronite Christian co-ed in November 2015. Twelve students participated who had been at RYDA 12 months previously and were now in the last year of school. They were aged 16-17 and all but two were learner drivers with one on provisional plates and the other not driving.

The students discussed several influences of the program on their car behaviour.

The feedback was consistent with previous groups. Stopping distance and safe following gap were frequently mentioned. Students were surprised by the distance it took to stop even at 40kph, and therefore how much you should be slowing down.

One mentioned braking distance - "as a learner this is hard to judge" and others added that they slow down in anticipation of orange/red traffic signals. Another reported widening their following gap and using the three second gap as habit.

The After the Crash session speaker had a lasting effect, with students remembering the effects on the speaker's family particularly. The students talked about the girl herself (the speaker) and how everything changed for her following the crash.

Many of the students recalled the Hazards and Distractions session in detail. One student, referring to the 'girl on the bike' hazard perception video, saying she "always looked around" now. Several students mentioned the Moonwalking Bear video (a perception 'test'), also shown in the session. This session raised self-awareness of "zooming out" among some in the group. Again, this recall was not prompted.

One student mentioned the ANCAP star safety rating system discussion at RYDA and said, in relation to wider family members looking to buy a car, "I always mention that the design of the car influences safety".

We asked the students about whether awareness of driver risks as passengers had increased. Several students gave examples of becoming more active in warning drivers they were travelling with about hazards (e.g. cars coming out of side roads). Music was mentioned as a distractive factor where passengers could play a role.

There were other individual mentions of reminding parents to slow down, and one telling her brother not to brake so hard.

We asked the St Charles group to suggest strategies on speaking up in concerning car situations. The most popular was telling directly "straight up", or "factual". A female student asked her mother to tell her brother to improve his driving. Another student said she used "I'm personally scared/worried". Another said she held the door handle or looked at the speedo, and a male student said he used the strategy of saying there was sometimes a police car or speed camera around the next corner. Others suggested humour, and another turned the issue of speed into a quiz, "how fast can you go in a speed zone?"

How well did they remember RYDA messages after 12 months? The general response was summed up by these student quotes:

*"RYDA is constantly there"*

*"RYDA has true stories" (the After the Crash session)*

*"RYDA enhances the other reminders"*

The group estimated that 45% of the total road safety messages they remembered was from RYDA and 55% from other "outside" sources - road safety advertising was mentioned most commonly (particularly fatigue "Don't Trust Your Tired Self", Plan B and Slow Down advertising were mentioned). One student said her greatest influence was the experience of a crash where her sister was injured sustaining a lifelong neck injury.

RYDA was seen as different from mass media messaging which they viewed as mainly designed for fully licensed drivers whereas RYDA was for L and P plate drivers. "At RYDA we were paying more attention, it was more effective because you were the single focus", said a male student.

The group was asked about the fall-off (in retention) after RYDA. Interestingly there were comments such as "we know what's right to do, it doesn't fall off", and "its common sense". Another said "It's still in mind after a year. It's effective with a day focus".

We also asked the students about differences in reaction between girls and boys at the program. Girls, the group agreed, tended to consider the effects on friends and family, "The effects make me mindful when I'm driving." Boys, they said, were more interested in the cars - the safety features, but that influences like understanding distractions (unspecified) could make them reduce their speed.

The group discussed their experience of barriers to safety in cars. Peer pressure and weak will were quickly mentioned. "It depends on who you are with", one said. How you are feeling on the day was mentioned; "being in an angry mood". Other drivers pushing learner drivers was also seen as a barrier to safe driving by "someone behind me, pushing me".

What about where there was no one else on the road, we asked. They said that some young drivers had adrenalin that could lead them to behaviour like racing. One student said he felt a sense of freedom in driving, and another male student said, "something explodes in you". There were mentions of video games making young drivers more dangerous (The *Fast and the Furious* was mentioned).

### Website competition

The website competition gathered feedback comments on the RYDA session students liked the most and why. The question was not designed to find out intentions for change, but their comments give clues into where awareness could result in behaviour change. A selection of session comments is below. We have to allow for validity issues in the answers as students are trying to win the prize - however the responses are generally indicative of the outcomes, albeit more positively expressed, and are consistent with other feedback.



### Speed and Stopping

Many comments focused on awareness and knowledge change:

*"It really opened my eyes up to how long it takes to brake and the distance away I should be from the car in front to stop"*

Male, St Dominics, NSW

*"Because I was able to witness firsthand the effect speed can have on the stopping distance of a vehicle. It was intriguing to see the workings of a car and what the best safety features are."*

Female, St Mary's College, TAS

Student comments also refer to behaviour change subsequent to knowledge change, for example:

*"I'm learning to drive and I never realised how long it would actually take me to stop! It was a really valuable lesson."*

Female, St Michael's Collegiate, TAS



### After the Crash

Students found this a compelling session. Having a speaker with life-changing injuries telling their story brought a range of reflective comments on the effect of road crashes. Many of them highlighted the consequences of bad choices on the road

*"It really made me think twice about driving or being a passenger."*

Female, Norwood Morialta High School, SA

*"Because it makes you think about doing the same thing he did and if u really want to be in the same position as he is in and by him telling us his story he is changing people's mind by making them think twice before taking any actions"*

Female, Holroyd High School, NSW



From some comments, the session provided an opportunity to reflect on risk reduction strategies.

*"It made me think about what happened to him and inspired me to do good on the roads and make sure I'm safe as well with other people and things around me. ... I think that I've learnt a lot of new things, for eg, road rules, help on how to concentrate, and that I should always be aware of my surroundings."*

Male, Tyndale Christian School, NSW

*"...allowed me to enhance my understanding of driving while fatigued. I know from now on I will always think of her story when driving, to ensure when I'm fatigued I don't get behind the wheel."*

Male, Vermont Secondary College, Vic

*"I could definitely say that this session has definitely impacted the way I will drive and the way I am aware of the surroundings around me."*

Male, William Clarke College, NSW

The effectiveness of testimonial presentations for behaviour change is contentious in some jurisdictions particularly if they comprise the entire program. RYDA's After the Crash presentation is primarily an activation session designed to make students rethink or challenge their behaviour or attitudes through a focused story which highlights what they can do differently. Speakers for this session are trained by RSE to specifically focus on lessons from their crash. We work with rehabilitation organisations to source young speakers whose injuries were the result of a preventable crash.

Recent research from Epworth Hospital, Melbourne<sup>48</sup> examined how educating students on the long term consequences of road trauma can positively impact upon their attitudes towards risk taking behaviour providing evidence for the positive impact of such a session conditional on it being presented as part of a broader road safety awareness program.



### Genevieve's Story

This session revolves around a short film made about Genevieve Matarazzo, a senior high school student, and a crash which killed her, as the driver, and her friend Shannon. The film was commissioned by RSE, with the collaboration of the affected families, to be relatable to the RYDA audience. It shows Genevieve's life before the crash and the effect on family friends and the community. Students' comments are understandably related to the emotional impact of the film.

*"I easily related to Genevieve's Story and it made me realise how much different decisions can greatly change the outcome."*

Female, Fahan School, TAS

*"I felt like I knew the victim, and it really made me think about the consequences of unsafe driving"*

Male, Winmalee High School, NSW

Other comments suggest that the emotional engagement of the film supports intentions to change car behaviour.

<sup>48</sup> Buckmaster, Brownlie, Olver, Fedele, McKenzie; *Road trauma education: the impact of a patient presenter on the road safety attitudes of adolescents*; Journal of the Australasian College of Road Safety – Volume 26 No.2, 2015

*"This was my favourite session - a lot of my friends and I could relate our life to Genevieve's because we were around the same age and we're starting to get rides from our friends. So seeing Genevieve's story and the crash she was involved in was a real eye opener, letting us know that these kinds of crashes can happen to anyone. I'm now a lot more aware of the dangers of freeways and overtaking etc. if you are an inexperienced driver and also getting rides with inexperienced drivers..."*

Female, Moreton Bay College, Qld

*"because not only was it touching and emotional but ... it provided a good insight into why it is important to take time, not rush and be careful when driving on the road because you have to feel comfortable and safe and have a good judgement over your actions."*

Female, Bossley Park High School, NSW



## The Personality Test

This session examines the relationship between personality and road risk. Students discuss aspects of the personality that influence risk taking and test themselves to identify their main area needing development. Strategies for speaking up and self control are developed through role-play and discussion and self-coaching tips are provided.

The session was introduced for the first time as part of the RYDA 3.0 development. The theory behind it largely comes from the work of the previously discussed Finnish road safety researchers Hatakka, Keskinen and colleagues<sup>49</sup> whose GDE matrix (sometimes known as GADGET) identifies the range of competencies a safe driver (and passenger) needs.

This session is unique to RYDA - we are not aware of any other road safety awareness program that has applied the GDE framework in this way to a secondary school program - and was also developed to link to school programs dealing with self-assessment, resilience and risk awareness in general.

Student comments referred to linking the personality aspect content to car behaviour.

*"Because it was interactive and it showed me how different drivers think behind the wheel resulting in the actions they choose to make"*

Female, Loyola College, Vic

*"It gave good positive coaching for real life situations"*

Female, MacKillop Catholic College, TAS

Some comments reflected actions students could take based on the session

*"Know ourselves and have a plan for risky situations, and help others"*

Female, Lalor North Secondary College, Vic

*"It gave me the opportunity to explore my own strengths and weaknesses. As someone who recently got my L's I found it very useful because I now know what I need to focus to ensure my own safety and the safety of those around me when I'm the driver and the passenger."*

Female, Rose Bay High School, TAS

<sup>49</sup> Hatakka et al; *From control of the vehicle to personal self-control; broadening the perspectives to driver education*; Transportation Research Part F 5 (2002) 201–215.



## Rights and Responsibilities

This session aims to build support and acknowledgement for the protective aspects of road policing and the graduated licence system, rather than seeing it as a restriction on personal freedom, or unnecessarily targeting young drivers.

The presence of uniformed police at road safety programs increases authoritativeness and credibility. RSE worked with police from different jurisdictions to develop the session content and gathered feedback from all police services where we operate. RSE trains the police facilitators for this session.

Student comments on this session included:

*"The officers leading the session were helpful in answering our questions and I now understand a lot better why the police are so strict when it comes to road rules. I know I will definitely remember all that I learned from this session and it will help me to be a good driver in the future."*

Female, ACG Strathallan College, NZ

*"I found the police officer really engaging and fun to listen to. The information he shared with my group was really mind blowing - like the fact that L platers are actually the safest drivers! I also found the video pleasantly confronting, and it made me realise how aware I need to be of my surroundings, when I am driving."*

Female, All Saints Anglican School, Qld



## Hazards & Distractions

The session deals with cognitive process while driving - how the ability to perceive hazards is reduced by adding to mental load by using phones and being distracted by passengers which elevates an already high crash risk. There are two short video clips that test students' hazard perception and they discuss current research into brain function specifically related to using mobile phones, and the crash risk elevating effects of riding with young passengers. Lastly they discuss the perception of expectations young drivers can have of the passengers or peers around them.

*"The driver perception video really caught me off guard. I especially remember how the driver was about to turn left and collide with the cyclist. And when the supervisor explained that this is due us being too focused on the opposite car which is turning, I realized that I have to be more aware of things that fall on my blind spot."*

Female, The Cathedral School, Qld

*"Being a passenger I have been in a lot of close calls in terms of accidents due to distractions such as phones, it was interesting to see how long it took for everyone to see the cyclist and identify it as a hazard in the hazard awareness test, highlighting the importance of being 100% focused on driving without getting distracted."*

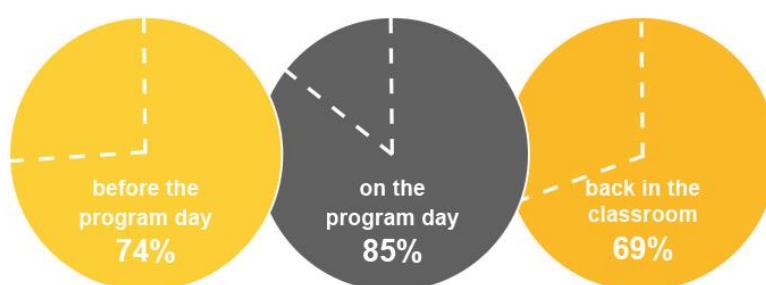
Male, Townsville Grammar School, Qld

## Evidence - Teachers

Approximately 2300 teachers accompany their students to the RYDA program each year. Many teachers come each year - according to survey results, 50% had been to three or more programs.

Teachers are involved in the program by preparing students for the day, participating at the day (each session has a role for teachers to play), and following up road safety messages through support materials such as the bank of online teaching resources and the GPS booklet to use with their students. An important aim is to advocate and build support for road safety education as a school and individual teacher priority.

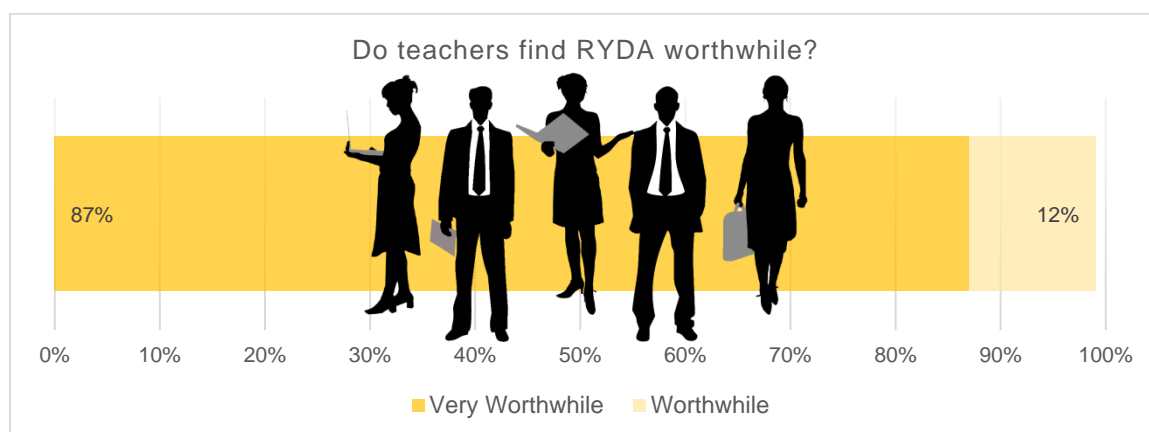
Commenting on this support, teacher respondents said that they felt either very or somewhat involved before, during and after the program day. The following graphs show percentage of teachers who felt 'very involved' in supporting the RYDA road safety messages at various stages of the process:



The survey (5) covering Australian states and New Zealand, both city and country schools generated 280 responses from participating teachers. More than three quarters of them had attended in the last year.

Of the respondents, 37% were year level deans, 28% senior management and a further 15% pastoral care staff. The most common teaching subjects of the participants were physical education/health, social studies, and English.

Most of responding teachers said RYDA was very worthwhile and worthwhile.



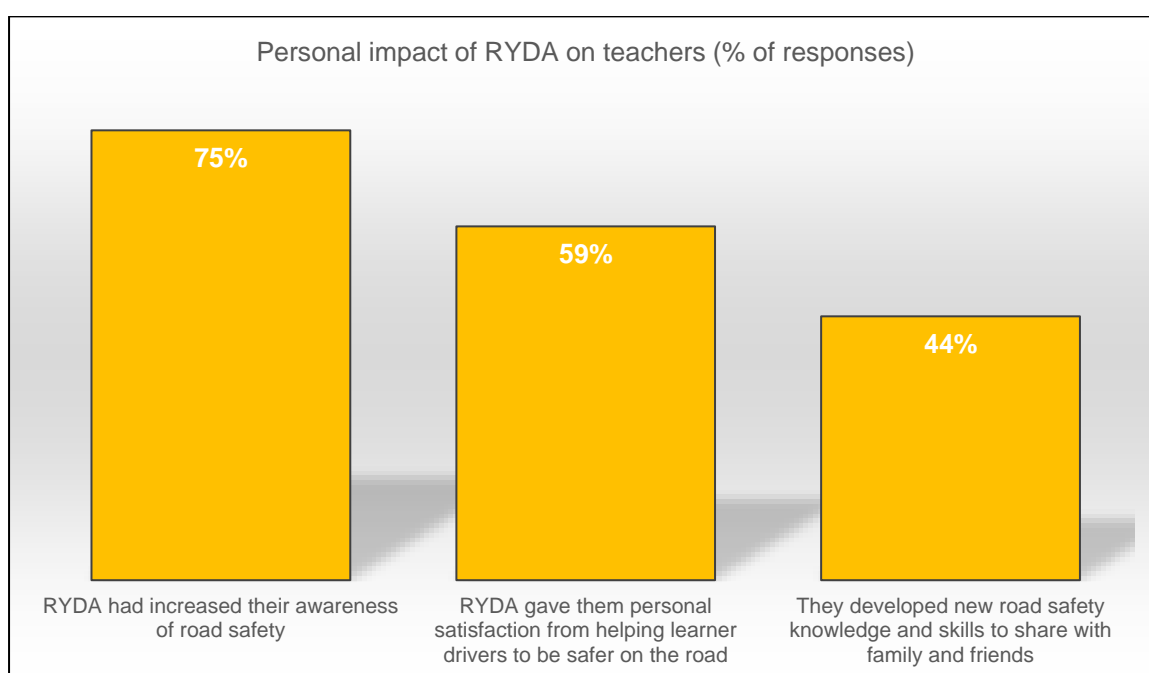
All said they would recommend it to a colleague. They were asked about the effectiveness of the RYDA program across a range of outcomes using a five point scale and the results were (teachers could select multiple answers):

*How effective do you think the RYDA program is for each of the following*      % very effective

Increasing students' self-awareness of personal risks of driving and being a passenger	71
Building positive attitudes for government and community road safety measures	44
Long-term behaviour change for becoming a safer driver / passenger	34
Actually reducing crashes (involving RYDA participants)	24

They were asked to rate program facilitators on how well they ascertained and adapted the session to account for what students already knew. 43% said facilitators ascertained and adapted, 38% ascertained and adapted a little, and 5% ascertained but did not adapt.

We were interested in teachers' assessment of the personal impact on them by attending RYDA. A full day exposure to RYDA, sometimes on an annual basis should generate thoughts and actions following the day, either personal or back at school, perhaps both.



## Evidence - Parents

Parents of approximately 50,000 RYDA student participants each year give permission and pay for their child to attend. They generally, according to feedback, discuss how the day went. The nature of that discussion and the extent it initiates or supports frequent and engaging dialogue between parent and child on road safety issues is key to measuring program impact in reducing risks.

Research indicates parents are highly influential, perhaps the greatest social/environmental influence on young people in relation to road safety, with peers and Police the other dominant influences.<sup>50</sup> Parents providing supervision and driving instruction to learners is clearly a direct influence, and adolescents are exposed to parent attitude and behaviour long before they begin supervised driving<sup>51</sup>. Risky car behaviour is closely associated with parents' risky driving<sup>52</sup> and their attitudes and behaviour<sup>53</sup>. Parents are also pivotal in novice driver car ownership through buying cars for their children.

Close to 100 parents responded on RYDA's impact on their son or daughter, and the family as a whole. 73% were from NSW with responses from Victoria, New Zealand and Queensland.

Of respondents, 45% had sons/daughters on learner licences, 35% were approaching driving age and 10% had children having passed their practical test.

Surveyed parents were asked their children's' largest risk factors were. The feedback was, in descending order (multiple answers were allowed)

*Son or daughter's five greatest needs approaching driving age in reducing their risks on the road* % response

Anticipating hazards while driving	91
Speed control according to driving conditions	69
Self-knowledge about their real ability (e.g. not overestimating their ability)	52
Controlling position and direction of the car on the road	44
Reducing distractions in the car like mobiles, car radios etc	41

This result appears to show that parent views of young driver needs are more on attitudinal and self-regulatory factors, than technical or skill aspects.

We asked them what approaches to road safety education they thought worked best with young people. The top five responses, again in descending order, were

*What approaches to road safety education work best with young people?* % very effective

Driving lessons	84
Advanced driver training of students/skid control etc.	76
Talk from a young crash survivor	61
Demonstration of stopping distances at different speeds	55
Guest speaker, for example family of deceased	51
Shock tactics (e.g. images of crashes, injuries).	36

This result, in contrast to the previous question, rates technical training higher than attitudinal development. Notable is the lack of support for shock tactics as an effective strategy with young people.

Most parents had a discussion after their student had attended RYDA (only 20% didn't and of those, almost half of these heard their child raise it but without discussion). For 23% the discussion involved some use of the student GPS booklet.

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<sup>50</sup> Scott-Parker; *A Comprehensive Investigation of the Risky Driving Behaviour of Young Novice Drivers*, PhD Thesis, Queensland University of Technology, 2012

<sup>51</sup> *ibid* p36

<sup>52</sup> *ibid* p37

<sup>53</sup> *ibid* p137

Of the 17 parent respondents whose students were driving, just under half said they noticed a change in driving behaviour. Comments included:

*"More cautious about mobile phones in cars being a distraction even when hands free"*

*"They were more aware and cautious"*

*"Greater effort and focus"*

*"She seemed much more cautious and discussed her need for more time to practise hazard perception"*

Of the total surveyed 66% of parents said RYDA would decrease or greatly decrease their child's risk taking driving/passenger. Of these, close to two thirds mentioned increased awareness of following gaps and 20% were unsure.

Parent comments included:

*"He already had had the 3 second gap rule drilled in, but it always helps if the message comes from another source rather than parents."*

*"When she drove she mentioned it to me and demonstrated how to maintain her gap using the technique she learnt at RYDA."*

We asked about their feelings on what impact their son or daughter's attendance at RYDA had on them personally. Their responses were:

<i>Impact of RYDA</i>	<i>% of responses</i>
Felt their child was safer on the road because of skills and knowledge they developed	43
Their son or daughter's participation had increased their own awareness of road safety issues	37
Felt that, considering their son or daughters' reaction to the RYDA program, their attendance would decrease or greatly decrease their risk-taking	57% of the 28 that responded to the question

A future development for RSE could be to focus on ensuring that parents know how best to protect their children from risk (e.g. exposure to night time driving, with friends etc). We do this already through the RoadGuide program, and this can be enhanced. Sending a child might have potential for unintended consequences if parents think they will behave more safely because they have been to RYDA, and so relax the 'rules' and let them take the car out more often, or at night. This could do harm if the child's skills and experience have not actually improved along with their knowledge and attitude.

We also asked "Does your son or daughter pick you up on your driving more after attending RYDA?" 44% said yes mentioning students commenting on them answering the phone (hands free), driving too fast too often, not maintaining a following gap, not indicating long enough, or not using indicators.

There was limited but, nevertheless, informative evidence from a focus group with three Brigidine College parents, a Sydney girls' school in 2012. All the parents' children currently had learner or provisionally licensed daughters who had attended the program four months earlier.

Parent perception was that the program was a bit confronting and they thought it was good. We presume they were referring to the crash speaker or the Genevieve's Story video - the two most confronting parts of the day. They said it was apparent that their daughter had never thought about road safety that way adding that the students were not upset per se.

*"Students get their L's and start driving without thinking of the bigger picture and they don't think of their car as a weapon."*



*"...they understand that crashes happen and people get can get hurt but it came home to them that they are really in control of this vehicle and whatever they do impacts on someone else."*

We asked the parents whether they felt RYDA was still having an impact on your children after several months. One parent said her daughter had become a back seat driver.

*"They don't specifically mention RYDA but yes definitely say things like "don't you think you're going too fast here", "don't tailgate"."*

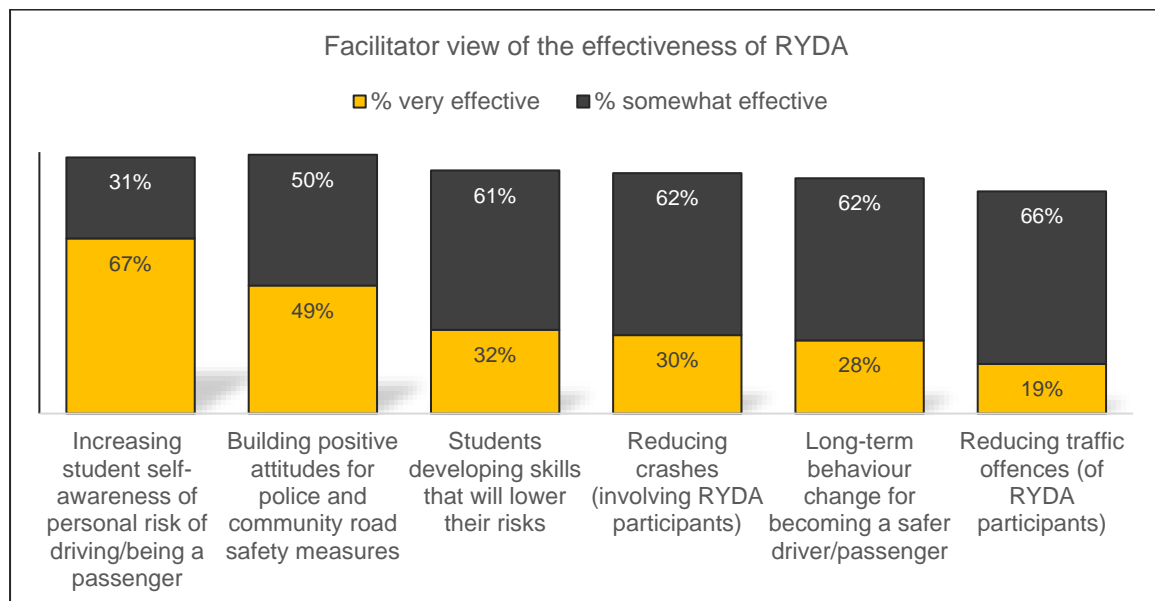
Another said...

*"Yes, when things click and they get a message in that sort of situation they don't forget that. Whether or not they carry it out, it's still there."*

We asked the parents what the greatest impact of the day was. One said that her daughter had talked about the crash survivor (After the Crash) session, that it was such a personal experience and it had certainly stuck with them. Another mentioned the police were there and it was more the message of the crash and injuries that had them talking.

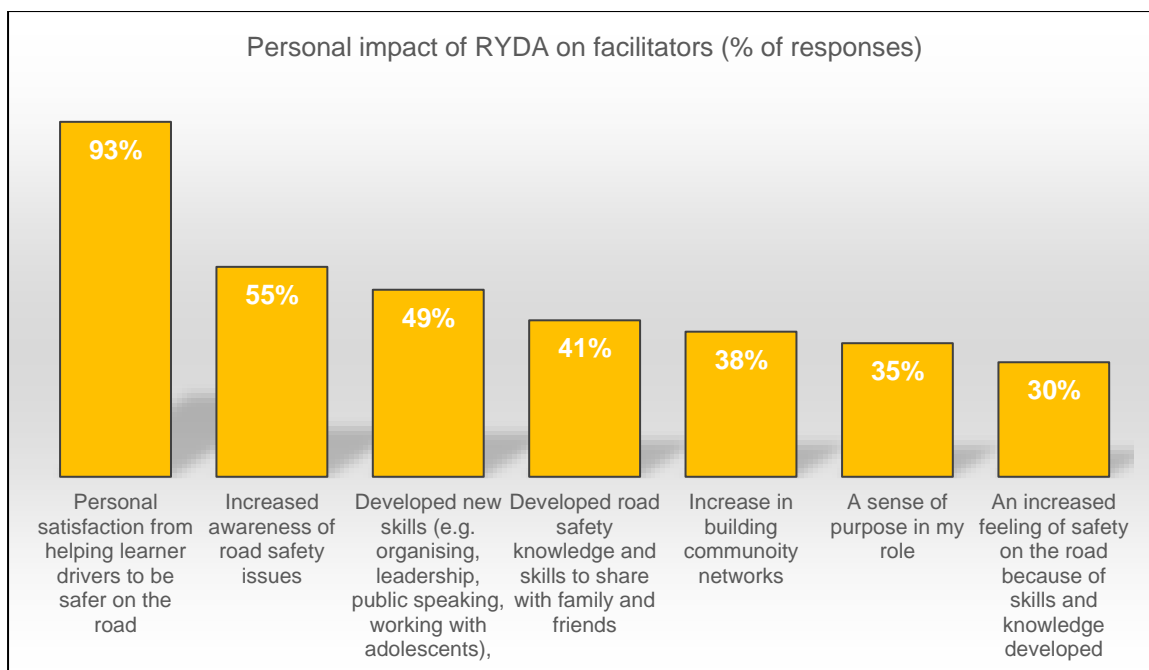
### Evidence - Facilitators

Close to 500 facilitators, including police, work on the program in Australia and New Zealand. From survey data from the two most recent large surveys we know the largest group has been facilitating for three to four years (33%), a third are from country venues, and two thirds city. Close to 90% of facilitators have training or prior learning/qualifications in facilitation-related fields and over 90% have received additional training by RSE.



We asked facilitators about the personal impact of RYDA involvement. The results showing the two survey results were (multiple responses allowed):





Comments included:

*"I love facilitating these groups, the information is so useful and potentially lifesaving, and fun to teach and learn. And I do have way more knowledge than I had previously. A really satisfying job."*

*"I have been involved with RYDA from its inception in Tasmania, and continue to give up time to make sure that it progresses as it has over the years. It is one of the most enjoyable and rewarding training sessions, both with Rotary and School groups."*

*"Motivates me to pass on more when teaching new drivers."*

*"Building positive relationships between Police and young drivers"*

### Evidence - After the Crash speakers

We interviewed six After the Crash session speakers to find out the impact on them particularly in relation to their motivations for participating on the program. The interviews were conducted in 2012, all in New South Wales over the phone or in person. The six worked on the speakers bureau of the NSW Brain Injury Association. They were selected to present because of the nature of the crash experience, their relatability to the students, and, importantly, because of their individual stories about life before and after the crash.

*After a year being at RYDA ### feels this is his job in life*  
After the Crash presenter #1, Sydney

Speakers said their role was satisfying particularly through telling their stories at RYDA, fielding questions from students during and after the sessions, and because of positive feedback from young people. Although daunting at first almost all said they gained confidence, that it had increased their self-worth, and given them additional sense of purpose. Although mentally fatiguing, the presenters added that RYDA involvement had developed their skills and, for some, this had enabled next steps, for example exploring new work opportunities.

*Without RSE ### feels that something would be missing. The program is a vital part of her everyday life. ### hungers for the facilitating as it has opened doors and now she can 'perform' to a group.*  
After the Crash presenter #2, Sydney

### tried voluntary and paid work but didn't feel he was giving anything back to society. It has definitely given him the confidence to look for other work but he is happiest in his presenting role with RYDA. ### doesn't think this feeling of confidence would have happened without his role at RYDA. Being a facilitator has given him "the guts" to get out there and not be worried.

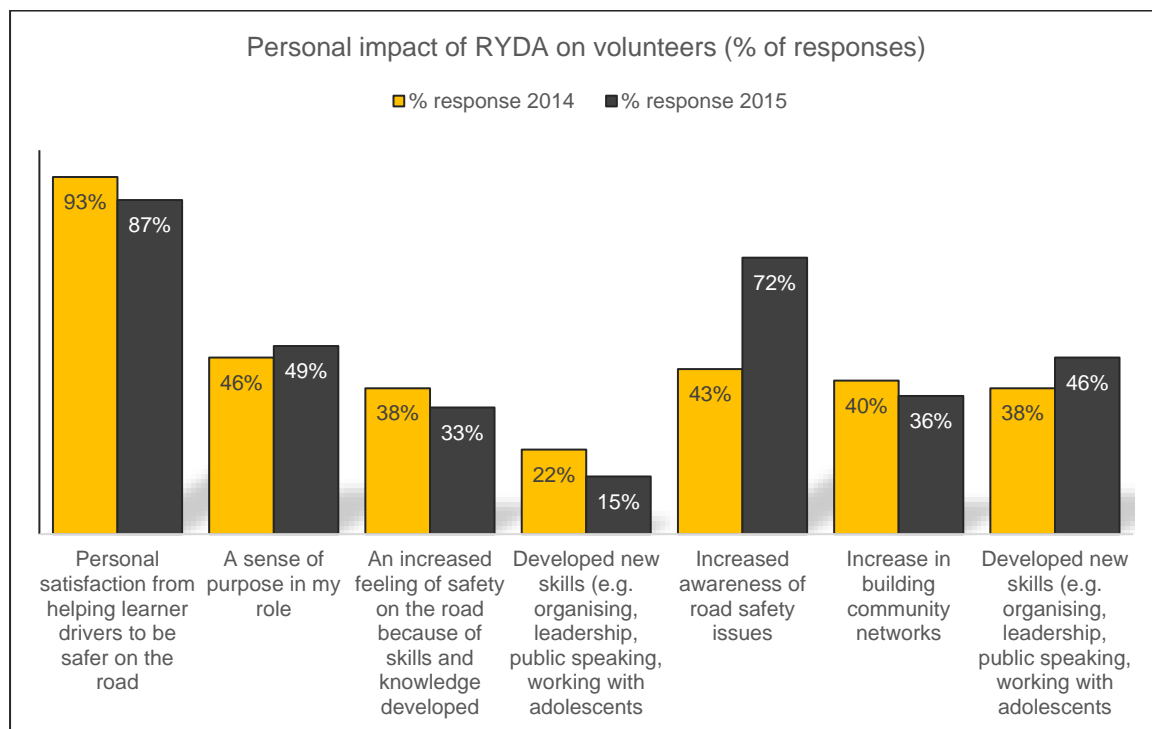
After the Crash presenter #3, Sydney

### Evidence - Community Volunteers

We surveyed Rotary community volunteers on the impact the RYDA program has on them. Rotary has a strong connection with RYDA through the program's origins. It is seen as an important component of the work that the organisation does with young people.

Rotarian volunteers, men and women, organise and day-manage non-metropolitan programs. They make connections with schools, organise venues, and provide helpers for the day ensuring the programs run efficiently. Some Rotary Clubs donate substantial sums of money to support and subsidise schools and individual students. Some even put on barbeques at lunchtime for the students.

We were interested, therefore, to ask survey respondents about the personal impact on them through their participation. Their responses to two surveys, one year apart, were (multiple answers allowed):



### Comments included

"Has made me a safer driver and rider."

"My wife becomes much more vocal when I am driving in that I should be making an example....."

"Developed networks to encourage involvement"



## Section Four: Summary Discussion

**Discusses the evidence for the theorised story of change and draws conclusions about intermediate outcomes and the resultant social and economic benefits.**

# 4

## SECTION FOUR: Summary Discussion

### Students

The theory of change discussed earlier specifies five outcomes for students:

1. Increased knowledge, skills and attitudinal change for long-term behaviour change.
2. Reduced road trauma (physical and psychological harm).
3. Reduced financial costs (economic and social) as a result of less crashes.
4. Support for other community and governmental road safety initiatives
5. Personal resilience strategies learnt

The survey and focus group feedback gathered in this Study provides evidence for 1, 4 and 5. We hypothesise, 3 and 4, and there is little evidence of this sort for pre-driver education globally<sup>54</sup>. Notwithstanding that, given the number of participants attending RYDA each year, the fact that RYDA follows best-practice principles, and the extent of economic and social costs of road crashes in Australia and New Zealand, the likelihood that the program could prevent even a small number of crashes sees it as a significant contributor to road safety and a worthwhile investment. RYDA contribution to crash prevention should be seen not only as influencing participant risk-lowering behaviour (decision-making and strategy adoption) in response to common crash-causing scenarios of young drivers, but also through adding weight to community-wide road safety measures which have so successfully reduced the youth road toll in the last decade. According to Kinnear et al, education should not be expected to reduce road trauma on its own but may have a vital role in legitimising enforcement and supporting the development of road safety culture in society.<sup>55</sup>

The evidence supports RYDA's role in increasing knowledge, skills and attitudinal change for long-term behaviour change. Students said they intend to apply the messages and strategies from the day.

The Study shows that the student information deficit, a foundation of many road safety interventions that fail best practice, largely does not exist. Students come to RYDA with prior knowledge of many road risks and, to some extent, a positive view of road safety enforcement measures. Importantly, this influenced the experience of participants at RYDA, according to the feedback, in what they viewed as the most significant parts of the day for them - often those not covered in community-wide road safety messaging containing new and surprising content such as car motion physics, the science of distraction, the role of the personality, and the life story of a crash survivor. This was also influenced by their age and licence status.

In other words, RYDA fills an existing gap in government and community road safety initiatives in these and other areas.

Willingness to take risky action declined most sharply in the cases of overtaking in the wet, giving a lift to a loud passenger, staying quiet in a concerning car situation, and, to a lesser extent, not using a mobile phone hands-free, or getting a lift from a friend who had been awake for an unacceptable length of time.

Students prioritised things they might do to lower their road risks, in order of importance, by being more aware of mood, greater planning of car trips, driving under the speed limit and turning phones off. Participants overwhelmingly intend to apply the things they learnt from RYDA - between 70 and 80% across surveys.

The surveys from participants and parents also revealed that there was discussion at home after attending RYDA and that this influenced parent behaviour through reminders from sons and daughters while driving. The experience may provide an opportunity to reinforce positive attitudinal messaging from home prior to, and during the supervision of learner drivers given parents' view that young driver attitudes are the priority risk factors (above technical driving skills). Scott-Parker's research showed, however, that some parent influence can be risk-increasing.

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<sup>54</sup> Kinnear et al; p36

<sup>55</sup> *ibid* p36

Focus group responses supplemented survey data in indicating practical actions students took afterwards - passenger choice, seatbelt wearing, speaking up in the car, checking parent car ANCAP ratings, reducing speed, keeping a safe following gap, and influencing parents, brothers and sisters. There was heightened awareness of fatigue as a crash factor, and the extent of the 'ripple effect' in the community following a crash.

Drop-off and attribution of resultant behaviour change was discussed in one of the groups. Falloff in commitment was confirmed by the participants but this was qualified by saying that RYDA messages were absorbed into a general underlying safety outlook. These students estimated, after discussing the issue, that RYDA had contributed just under half of their road safety knowledge and attitude one year after attending.

The fourth outcome is the impact of RYDA role in supporting community and government measures. Primarily this is through program content (*Rights and Responsibilities* session) designed to show the role of police, particularly their community protection role, discussion of the graduated licensing system and its purpose of targeting proven risk factors and allowing more freedom as driver experience develops, and the social nature of driving. RYDA rescreens, with discussion, road safety advertisements, and refers to jurisdictional initiatives that reinforce program content, for example Queensland's *Join the Drive* - Distraction Action Plan campaign (for breaking the mobile phone habit).

A high percentage, 77%, of student survey respondents said RYDA was likely or very likely to "change my attitudes toward police enforcement and road safety advertising in a positive way". Building positive attitudes for police and community road safety measures ranked second on the list of both Rotary volunteer and facilitator responses when asked to rate the most likely outcomes of the program, behind student self-awareness of road risks.

The fifth outcome is personal resilience strategies learnt. RYDA's approach to road safety education is highly consistent with, and supports the development of generic resilience life skills amongst participants while acknowledging this a separate and less impactful in the context of road safety behaviour change. It contributes to national curriculum outcomes, not only in personal and peer safety, but also in planning, managing mindstate, overcoming difficulties and speaking up in challenging situations. Survey evidence showed student recognition of the personality in general and temporary mindstate in particular, as influential in risk taking behaviour.

A further angle of inquiry that would likely provide more detailed evidence of this would be systematic participant observation of *The Personality Test* and *Genevieve's Story* sessions where much of the discussion involves personal resilience and strategy development. We were surprised at the number of comments from teachers during programs who noticed the complementarity with programs in their schools.

### **Teachers**

Summarising teacher responses, the greatest value in the program was seen (and was identical to the student response) in increasing students' self-awareness of personal risks of driving and being a passenger.

Teachers reported greater road safety knowledge and planned to share this with family and friends. We hypothesise that this may influence their commitment back at school to increase the frequency of curriculum activities involving road safety messaging in their classes, or more simply, more mentions of the issue. This deserves further investigation given the importance of regular reinforcement underlined by education research.

### **Parents**

Parents are impacted primarily through a greater awareness of road risk by discussion and their young person's behaviour change. Family discussions after RYDA are likely to impact on parent knowledge and attitudes on program elements such as speed, following distances, safe car choice for themselves and their teenage children. In a more general way, discussions with parents may influence student perception of social norms in relation to safer driving, particularly if these are reinforced through peer influence, and could counter their perception that risky driving is the prevailing social norm, though not in all cases.

### **Facilitators and volunteers**

Other facilitators and program volunteers reported outcomes that clearly reinforce low risk driving behaviour and road safety culture in general, as well as giving them a sense of purpose in helping young people reduce their road risks. Facilitators of the After the Crash session, those with serious life-changing effects of road crash injuries, placed a very high importance on their role in their sense of social contribution and personal well-being by increasing the opportunity for them to turn an extremely negative life experience into a preventative and proactive message for young people in their local community and to participate in the community.

### **The Social & Economic Impact of RYDA**

A key objective of the Study was to determine the impact of the RYDA program on the broader community. This impact would include both social and economic components. The original logic framework hypothesised RYDA would impact:

- Reduced demand on justice and law enforcement agencies.
- Reduced demand on public health and disability services /community services.
- Increased community well-being and safety through less death and injury.

The annual direct financial cost of youth road trauma is enormous. With over 400 deaths (approximately \$2.4M per death<sup>15</sup>) and more than 2,400 life threatening injuries (each costing between \$1.8-3.8M<sup>16</sup>), the total cost of crashes is estimated at \$6B per annum.

As an evidence-based and government compliant program, costing only \$2M and delivered to over 50,000 students every year, it is reasonable to expect RYDA would reduce risk behaviour sufficient to represent a net social and economic benefit many times the financial investment.

In returning to the issue of how to measure the value of best-evidence road safety education, the positive effects on awareness and intentions should be seen as contributing to the total picture of road safety culture change when judging the value of the RYDA program. It is fair to ask, would there have been the same degree of change in social attitudes to key issues such as speeding, alcohol, use of mobiles and seat-belt wearing if there had been no road safety education and no RYDA program?

Based on the evidence, RYDA contributes to changing attitudes and behaviour supporting road safety enforcement, legitimising legislation and supplementing road safety advertising. It thereby adds to the totality of road safety culture change. It does this in a way no other national intervention does - by personally engaging young people in an intense series of facilitator-moderated workshops, peer discussions and strategy development, and through a community-based approach involving a wide range of stakeholders.

## Key Research References

Among the research papers we read during the review, these were the most influential.

Bailey T J

*Self-awareness and self-monitoring - Important Components of Best Educational Practice for Novice Drivers*

Journal of the Australasian College of Road Safety Feb 2009

Investigates and supports the application of self-awareness, self-evaluation and self-monitoring to novice driver training.

Begg, D. J., Langley, J. D., Brookland, R. L., Ameratunga, S., & Gulliver, P. (2014). *Pre-licensed driving experience and car crash involvement during the learner and restricted, licence stages of graduated driver licensing: Findings from the New Zealand Drivers Study*. *Accident Analysis & Prevention*, 62

Investigated whether illegal pre-licence driving increased or decreased crash risk. It showed that pre-licensed driving did not reduce crash risk among learner or restricted licensed drivers, and in some cases may have increased risk. The researchers recommended young people should be discouraged from the illegal behaviour of driving a car on-road before licensing.

Brijs, Kris; Cuenen, Ariane, Brijs, Tom; Ruiter, Robert; Wets, Geert

*Evaluating the effectiveness of a post-licence education program for young novice drivers in Belgium*. *Accident Analysis and Prevention* 66 (2014) 62-71.

Includes discussion on recommendations for programs to aim for fewer learning objectives and targeting at-risk groups. Emphasises distraction as a big issue for young drivers as well as recommending a 'coaching' model to encourage student self-reflection.

Buckley, Lisa; Chapman, Rebekah L.; Sheehan, Mary

*Road safety messages tailored for young adults: Using the Internet and encouraging protective passenger behaviour*. Centre for Accident Research & Road Safety – Queensland, Queensland University of Technology 2010

Commentary of passenger influence in road crashes, and includes important sections on peer influence caused by individuals' perceptions of young adult attitudes and behaviour. It supports the use of the Internet in providing interesting and engaging content capable of contributing to behaviour change.

Buckley, Lisa & Watson, Barry (2014) *Best practice in peer-led curriculum content: informing an interactive program to improve passenger safety among high school seniors*. In *Proceedings of the 2014 Australasian Road Safety Research, Policing and Education Conference*, Grand Hyatt, Melbourne, VIC.

Points to important design features of best-practice road safety education for young people including peer influence, facilitator training, organisational factors, community linkage, consistency with legal framework, pedagogy and evaluation.

Buckmaster, J; Brownlie, C; Olver, J; Fedele, B; McKenzie, D

*Road trauma education: the impact of a patient presenter on the road safety attitudes of adolescents*. *Journal of the Australasian College of Road Safety*. Vol 26 No 2, 2015.

Establishes positive effects for a crash-injury presenter in the content of a wider road safety education program for young people.

Centre for Disease Control and Prevention *Characteristics of an Effective Health Education Curriculum*, 2015, ` <http://www.cdc.gov/healthyyouth/sher/characteristics/>

The characteristics of effective health education curriculum, according to reviews of effective programs and curricula and experts in the field of health education

Curry, Allison; Peek-Asa, Corinne; Hamann, Cara; Mirman, Jessica  
*Effectiveness of Parent-Focused Interventions to Increase Teen Driver Safety: A critical review.*  
Journal of Adolescent Health 57 (2015) S6-S14

Reviews parent programs that work with young drivers and underlines the value of strongly focused initiatives that provide parents with concrete tools and a strong conceptual approach.

Gabriel Molina, J; Sanmartin; Keskinen, E  
*Driver training interest of a Spanish sample of young drivers and its relationship with their self-assessment skills concerning risky driving behaviour.* Accident Analysis and Prevention 52 (2013) 118-124.

A study investigating the contrast between young people's actual risks and their own perception of them and the need for self-assessment across the range of technical and higher level thinking skills (applying the GDE matrix).

Glendon A. Ian et al  
*Evaluating a novice driver and pre-driver road safety intervention*  
Accident Analysis and Prevention 64 (2014) 100– 110

Hatakka M., Keskinen E. et al  
*From control of the vehicle to personal self-control; broadening the perspectives to driver education*  
Transportation Research Part F 5 (2002) 201–215

An explanation of the GDE (Goals for Driver Education) Matrix which is discussed in the Study.

Kinnear N. et al, *Novice drivers: Evidence Review and Evaluation*  
Transport Research Laboratory, UK, 2013

Summary of research and discussion of the effectiveness of young driver education and associated issues. It also compares the research with existing model of behaviour change including the Theory of Planned Behaviour.

McKenna, Frank P.  
*The public health benefits of road safety education for teenagers*  
<http://www.road-safety.org.uk/research/completed-research/think-piece-by-frank-mckenna/>

McKenna argues for road safety education funding to be based on evaluation results.

*ROSE 25 Report:* European Union

A policy framework for best practice road safety education in Europe.

Scott-Parker B, BC Watson, MJ King *The risky behaviour of young drivers: developing a measurement tool.* 2010 eprints.qut.edu.au

Describes the development of a research tool to measure the contribution of various risk factors (external and internal) to young driver crashes.

Senserrick T, 2013, *Young drivers: wilful risk-takers or are the odds stacked against them?* Road Safety Education Australia, North Ryde NSW 2113, RSE Newsletter, March 2013, Issue 19

A summary of factors contributing to young driver vulnerability.

Simons-Morton BG, Bingham CR, et al  
*Experimental Effects of Injunctive Norms on Simulated Risky Driving Among Teenage Males.* 2014



A fascinating experimental study of how young people's perceptions of their passengers view on risk can change their risk behaviour.

VicRoads *Fact Sheet 4 What doesn't work for young road users and why*,

<https://www.vicroads.vic.gov.au/~media/files/documents/safety-and-road-rules/vcrspp8294victrackfactsheet4whatdoesntworkforyoungroadusersandwhyweb.ashx?la=en>

A summary of research on road safety education characteristics that fail good practice

Walsh, S; White, K; Hyde, M; Watson, B

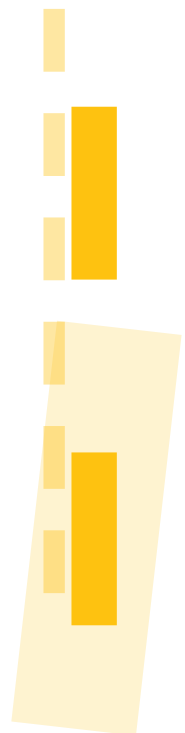
*Dialling and driving; Factors influencing intentions to use a mobile phone while driving* Accident Analysis and Prevention 40 (2008) 1893-1900

Applies the theory of planned behaviour to phone use in cars by young people and underlines the importance of changing peoples' attitudes to phone use in cars and building an understood safety culture.

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## Appendices



**APPENDIX 1: Principles for School Road Safety Education<sup>56</sup>****OVERARCHING PRINCIPLE**

1. Implement evidence-based road safety education programs and initiatives in schools and include local research and current legislation where available.

**CURRICULUM**

2. Embed road safety education programs within a curriculum framework thereby providing timely, developmentally appropriate and ongoing road safety education for all year levels.
3. School management supports teachers to effectively implement road safety education by ensuring access to available resources and professional learning opportunities.
4. Use student-centred, interactive strategies to develop students' utility knowledge, skills, attitudes, motivation and behaviours regarding road safety.
5. Actively engage students in developing skills that focus on identifying and responding safely to risk situations.
6. Provide information to parents/carers that will encourage them to reinforce and practise road safety skills developed in the classroom, in the real road environment.
7. Encourage students to support and influence their peers positively as a way of improving road safety behaviour.

**ETHOS AND ENVIRONMENT**

8. Consult the wider school community when developing road safety guidelines and policies and then disseminate this information to families and monitor implementation
9. School management actively promotes road safety education by supporting staff to plan and implement road safety education within the curriculum and other school programs and initiatives.
10. School management actively encourages staff to model appropriate road safety behaviour and attitudes consistent with the school's road safety guidelines.
11. Encourage and promote school-community participation in school road safety programs.
12. Review and update where necessary, in partnership with external authorities, the school road environment to encourage and support parents and carers to practise safer road safety skills.

**PARENTS AND COMMUNITY**

13. Provide parents and carers with information that will assist them to reinforce appropriate road safety messages and skills (including school guidelines and policies) at home.
14. Provide parents and carers with practical, opportunistic and planned, on-road training for modelling of appropriate behaviours to their children.
15. Establish and maintain links and involve community agencies and local government in the delivery of road safety messages that complement and support existing school road safety programs.
16. Engage, train and resource school health service staff to complement and support road safety education programs and other initiatives in schools.

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<sup>56</sup> <http://www.det.wa.edu.au/sdera/detcms/navigation/road-safety/principles-for-school-road-safety-education/>

**APPENDIX 2: Safer Young Driver Guidelines (NZ)**

- 1 The training builds on and complements other road safety education that is available regionally
- 2 The training builds on and complements other road safety education that the young people have participated in
- 3 The training is embedded in a New Zealand context
- 4 If the training is a 'one off' event, e.g. it's a one day course; steps have been taken to increase its effectiveness
- 5 The training has been tailored to meet the needs of individual participants
- 6 The training applies a participant centred approach to teaching and learning
- 7 The training educates the whole driver i.e. it considers and influences a young driver's motivation and attitude as a way to affect behaviour
- 8 The training has learning goals in addition to participants gaining their driver licences
- 9 The training appeals to young people
- 10 The safety content relevant for young novice drivers is included
- 11 An appropriately qualified trainer will deliver the training
- 12 If role models are being used they will be credible and effective from the participants' perspective
- 13 Steps are taken to involve and empower parents (or supervisors)
- 14 As far as possible, a mix of training environments or delivery methods will be used
- 15 The exact mix of training environments or delivery methods is determined by the learning objectives of the training and the learning needs of participants
- 16 Steps are in place to minimise the likelihood of causing unintended effects e.g. causing over-confidence and increasing unnecessary risk-taking behaviour
- 17 If 'scare tactics' or a confrontation approach are to be used, the training (or event) has been designed to provide participants with a positive learning experience that achieves an on-going learning outcome
- 18 Training messages are simple and clear
- 19 Discussion and feedback sessions have been built into each exercise to check for and correct any unintended messages
- 20 The training includes or promotes 'eco-driving' and alternative transport choices
- 21 The training provider has a strong organisational focus on quality and a culture of continuous improvement

**APPENDIX 3: 2012 Focus group schools**

- Brigidine College - Independent Catholic day girls, St. Ives, Sydney, New South Wales. Students attended 16 months prior.
- Killara High School - A co-educational public, Sydney. Students attended 16 months prior.
- St Stanislaus' College - Catholic boarding high school for boys, located in Bathurst, a regional centre 200 kilometres west of Sydney. Students attended 16 months prior.
- Bathurst High Campus - A government comprehensive rural high school. Students attended 4 months prior to the focus group.
- Galston High School - Public, co-educational, high school, located in Galston, in the Hills District of Sydney, Students attended RYDA 3 months prior to the focus group.
- St Ives High School - coeducational government high school located on the Upper North Shore, Sydney. Students attended 3 months prior.
- Barker College - Independent Anglican, boarding school, located in Hornsby, Sydney. Students attended RYDA 3 months prior to the focus group.

## Australia

Road Safety Education Limited  
ABN: 17 110 667 706

[www.rse.org.au](http://www.rse.org.au)

10 Julius Avenue,  
North Ryde NSW 2113  
P 1300 127 642  
P +61 2 8874 4332  
E [info@rse.org.au](mailto:info@rse.org.au)

## New Zealand

Road Safety Education Limited  
Registered Charitable Entity:  
CC27875

[www.rse.org.nz](http://www.rse.org.nz)

PO Box 12876, Penrose  
Auckland 1642  
P 0800 150 180  
P +64 21 545 030  
E [info@rse.org.nz](mailto:info@rse.org.nz)

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