

Draft proposal for evaluation of the Total Driver Youth Driver Safety Program

This evaluation program has been drafted as suitable for a full-time PhD student to undertake under the supervision of A/Prof Glendon and one other supervisor (two supervisors is a minimum requirement for PhD students) over a 3-3½-year period.

Stage 1: Interviewing

Interview a sample (~60 individuals) of program participants and other stakeholders to assess general attitudes about the program, perceptions of its effectiveness, and reflections on how it might have changed participants' driving behaviours. The interviews would be semi-focused, in that they would prompt with some fairly general questions, but invite respondents to make their points in their own words, with follow-up probes as required. Participants involved in all aspects of the programs would be interviewed and the responses recorded and transcribed (not verbatim). The responses would to an extent guide the future stages of the research.

Stage 2: Observations, development of measures, and initial research design

To familiarise themselves with the program, the researcher/s would need to spend some time observing the program in action, including undertaking some in-vehicle observations. A/Prof Glendon has undertaken studies of this nature previously. A limited number of in-vehicle observations would be needed – say 10-15 observations of between 30-60 minutes.

The complexity and variety of the program means that a number of measures would be required. In principle, where an existing measure will adequately meet the requirements of the study then it will be used. Developing new measures is time-consuming and will be kept to a minimum. The measures would be directly linked to the program's stated objectives. Measures would be of three primary types: 1) behavioural (outcome), 2) physical, and 3) cognitive.

- 1) *Behavioural measures.* To capture the broader picture longer-term objective, access would be required to a range of driving behavioural outcome measures, for example crash involvement (and attributed fault), insurance claims, demerit points, charges laid (e.g., for speeding or other moving traffic offences), and fines.
- 2) *Physical measures.* Measuring kinaesthetic components of the program would first require exploring the existence and availability of measures of posture/postural stability (e.g., existing platform-based measures might be considered), "muscle memory" (for which there may be suitable anthropometric tests), and hand-eye coordination (standard tests are available as used by coaches specializing in sports such as tennis).
- 3) *Cognitive measures.* A bank of instruments would be required to assess "mind mapping" (decision making inventories are available), road rules (variations on standard tests are available), hazard and risk perception (standard tests are available), awareness (measures have been developed), mental/emotional aspects of driving (e.g., Glendon has developed driver stress inventories, and similar questionnaire-based measures are also available), self-regulation (measures such as the Self-Regulation Questionnaire are available).

The items indicated above are illustrative and would need to be carefully assessed for their relevance to the study objectives. It is also important not to overload participants with too many intrusive tests and questionnaires, so these should be kept to the minimum necessary to acquire sufficient data for the study. The Stage 1 and observational components of the study would be expected to generate further ideas for appropriate measures. All measures would be scrutinised for their relevance to the study and would be piloted to ensure feasibility and appropriateness for larger-scale use.

The research design would be provisional, depending upon access that could be obtained in the first year of the project (e.g., to crash data that is personally identifiable). The most

challenging aspect of the research design is likely to be the task of matching program participants with individuals who will form the control group for the study. Matching will need to be on as many relevant features as can be achieved, for example to preclude as far as possible any possibility that changes detected in the program participant group can genuinely be attributed to their program involvement, and not to some other effect (e.g., maturation or motivation). Thus, as well as matching on basic demographic variables (e.g., age, gender, socio-economic background, parental involvement), program and control group participants will also need to be matched on characteristics such as prior motivation to participate in the program, so that any differences that are detected cannot be attributed to prior motivational effects (e.g., to drive safely, to avoid traffic offences).

The aim would be to complete stages 1 and 2 in the first year of the program. Ethical approval would be required from the Griffith University Human Research Ethics Committee. If the research were conducted by a PhD student, then the interviews and assessment of measures, including piloting, and research design would form the basis for the confirmation seminar, which is a requirement at the end of the first year of study, and must be satisfactorily completed before the main body of research can be undertaken.

Stage 3: Main study

This will be the principal data-gathering stage, during which time the research design will be implemented, with modifications as required, to complete a satisfactory project outcome. It is estimated that this stage will last for approximately 18 months, during which time longitudinal data on all continuing measures will be collected from both program participant and control groups. Data analysis will be undertaken as the data become available, for example first-phase questionnaires and other measures. Data gathering will be staggered both for practical considerations and to allow for methodological improvements. Wherever possible honours and masters students will be employed (free of charge!) to assist in data collection, which they would be able to use for their own projects. It is also a requirement for the PhD student to write up and submit at least one paper for a refereed journal in the course of their doctoral research.

Stage 4: Final analysis and project write-up

This stage would see the final thesis being drafted, including any remaining analyses to be conducted and drafting of further papers for submission to relevant conferences (e.g., Australasian College of Road Safety, International Conference on Traffic and Transport Psychology, International Conference on Driver Behaviour and Training) and high-quality journals (e.g., *Accident Analysis and Prevention*, *Transportation Research Part F: Traffic Psychology and Behaviour*, and *Journal of Safety Research*). The PhD thesis would include recommendations for further research as appropriate and on the basis of the study findings, also expand on the value of the Total Driver program for various stakeholders, including young drivers themselves, parents of young drivers, schools and teachers, vehicle manufacturers and sales outlets, the police, state governments, driving instructors, and the wider community.

The proposed evaluation project has the potential to be identified within the increasingly referenced systems perspective on driving, so that young driver behaviour is not perceived to be uniquely a "problem" for this particular group of drivers, but the role of young driver training is addressed within a broader cultural environment.

Stage 1. Key questionnaires

Interview participants, program stakeholders, industry and parents to form views on the research.

- i. Parents for and against.
- ii. Students for and against
- iii. Industry expert.
 1. Driving instructors
 - “L” (learner)
 - “A” (Advanced)
 - “P” (Performance)
 2. Researchers
 - Dr Andrew Peterson
 - Dr Ian Glendon
 3. Political (policy)
- iv. Discussion points
 - a. What is driver training and what is the value proposition
 - b. Do people feel the current industry standard is suitable.
 - c. What are the expected results of a structured approach to developing a driver. (Pre licence, Post Licence)
 - d. Current industry standard?
 - i. Students defining what, if any, Driver training is required. (there is no definition of a good driver or a bench mark apart from passing the driving test)

Stage 2.

Behavioural: C: Reference testimonial videos and letters. (Cam H. Sakisha D.)

N: Compare to industry standard.

Ref: Reports Ian Glendon

Physical: Ref studies Dr Andrew Peterson

- Postural stability and evasive lane change
- Cornering
- Emergency brake and steering
- Driver training and driver performance

G force (lateral and dynamic) and general driving skills on a variety of controlled roads. (vision, balance, technique, steering, evasive and reactive) Manoeuvres'

Cognitive, emotional and self regulation, (decision making) This also includes drives on controlled routes, not familiar to the students that encompass a variety of driving styles, skills and terrains.