# Research Priorities in Driver Training: Bridging the Gap between Research and Practice

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**Biography**

Barry Watson has accumulated a wide range of experience in road safety, arising from positions with the NSW Traffic Authority, the NRMA, Queensland Transport and the Centre for Accident Research & Road Safety – Queensland (CARRS-Q). During this time, Barry has conducted research into a wide range of road user issues including: drink driving, speeding, driver licensing, driver training and traffic law enforcement. At present, Barry is Lecturer in Road Safety at CARRS-Q and is in the final stages of a PhD examining the road safety implications of unlicensed driving.

**Abstract**

While there is a strong community perception that specialised driver training is an effective road safety countermeasure, there is currently no clear evidence that it produces safer drivers compared to less formalised approaches to learning. A number of factors have been suggested to account for this apparent lack of effectiveness. In particular, it has been suggested that conventional approaches to driver training do not systematically address the perceptual and cognitive skills required for safe driving, or the motivational or attitudinal factors which can exert a powerful influence on driver judgement and decision-making. Hence, it is possible that with further research and development that more effective driver training programs could be developed. With this prospect in mind, this paper identifies three main priorities for future research in the area.

1. While assessing the crash outcomes achieved by driver training should remain a priority, there is a need for evaluations to focus on a broader range of outcomes and on the processes involved in training.
2. There is a need to focus more research attention on improving current driver training practices, particularly in relation to the development of hazard perception and decision-making skills, self-monitoring processes, and strategies to reduce the impact of risky attitudes and motivations on driving.
3. There is a need for more theory-driven approaches to the development and evaluation of innovative training programs. This is required to ensure that training practices are based on sound principles of behaviour change, rather than on expert opinion.

It is important to note that the research priorities identified in this paper cannot be addressed in any one program of research. Rather, a philosophy of incremental improvement is required. While some important driver training research initiatives continue to occur in Australia, it is an area that receives limited funding. While this is perhaps not surprising, given the state of the evidence, there is a need to ensure that the research that does occur is well directed and coordinated, and communicated to practitioners. This is vital to bridge the gap that currently exists between research and practice in the area of driver training.

## 1. INTRODUCTION

There is a strong public perception that more intensive driver training is required to improve the safety of drivers, particularly young or novice drivers (Watson, 1997). Not surprisingly,

this approach has received considerable attention from road safety practitioners and researchers throughout the world, particularly in North America and Europe. However, there is no clear evidence that specialised driver training programs produce safer drivers than conventional methods of learning to drive. Consequently, many researchers have argued that driver training is not a panacea for improving driver behaviour (Henderson, 1991; Christie, 1995 & 2001; Watson et al, 1996; Watson, 1997; Vernick et al, 1998).

A number of factors have been suggested to account for the apparent lack of effectiveness of specialised driver training. Firstly, it has been argued that traditional approaches to driver training do not systematically address the perceptual and cognitive skills required for safe driving, nor the motivational or attitudinal factors which can exert a powerful influence on driver judgement and decision-making (Catchpole et al, 1994; Jerrim, 1992; Job, 1995; Christie, 1995; Watson et al, 1996). Secondly, it is possible that less formalised methods of learning may be more effective than commonly recognised. For example, it has been suggested that relatives and friends can play an important role in the training process by facilitating opportunities for practice and addressing attitudinal and motivational factors (Watson et al, 1996).

Given the limitations of traditional approaches, it is possible that the effectiveness of driver training could be enhanced through further research and development. With this prospect in mind, this paper will examine priorities for future research in the area. The aim of the paper is not to provide an exhaustive overview of all the possible research options available. Rather, it is intended to identify the broad directions for future research. While international developments are considered, special attention will be given to research activities that have been conducted in Australia in the past, or are currently underway.

## 2. THE EVALUATION OF DRIVER TRAINING PROGRAMS

Much of the research that has been conducted into driver training has focussed on establishing its effect on the subsequent crash and offence involvement of participants (generally in comparison to a control/comparison group of drivers). This focus on outcome evaluation is not surprising, given the policy imperative to establish whether the expenditure of funds on driver training is warranted.

While outcome evaluations are essential, they generally provide little detailed information about the intended (or inadvertent) effects of training on driver behaviour. Hence, limited insight is obtained into the behavioural mechanisms underpinning the learning process. In other words, while an outcome evaluation may indicate that a training program was not effective in reducing subsequent crash risk, it will not necessarily explain why that was the case. In this regard, Job (1995) has argued that there is a need for more process evaluation in the area, to better understand how driver training influences driver behaviour not just crash and offence involvement.

Process-oriented evaluations are particularly relevant for assessing new directions in training practices. For example, over recent years there has been a growing interest in so-called 'insight' driver training. This training is designed to raise awareness among participants of their limitations in driving skill and their underestimation of risk (Senserrick, 2002). While crash outcome evaluations of this training method are essential, there is also a need to better understand how it impacts on driver behaviour and intentions. As an example, a recent Australian evaluation of insight training examined changes in a range of behavioural indicators, including: attitudes, self-reported driving behaviours and risk perception (Senserrick, 2002).

Among the process issues in driver training that warrant more attention are:

- the impact of driver training on intermediate outcomes such as changes in the attitudes, perceptions and intentions of participants;
- whether the learning objectives incorporated into training programs are achieved;
- the inadvertent effects of training on subsequent driving exposure and risk perceptions (ie. whether training contributes to more risky patterns of road use or over-confidence);
- the types of drivers attracted to different training programs and the effect of this on training outcomes and subsequent crash involvement; and
- the role of driver training in other countermeasure approaches such as graduated licensing and fleet safety programs.

## 3. IMPROVING DRIVER TRAINING PRACTICES

Historically research into driver training has primarily focussed on establishing whether it works, rather than identifying strategies to enhance its effectiveness. Nonetheless, some important research has been conducted within Australia and overseas that has laid the groundwork for improving driver training practices. Firstly, over the last decade there has been considerable research into the factors contributing to the crash involvement of high-risk driver groups, particularly novice drivers (eg. Mayhew & Simpson, 1996; Triggs & Smith, 1996; Palamara, Legge & Stephenson, 2002). This research has provided a rich source of information to guide the development of more effective driver training practices. Secondly, a variety of research has directly focussed on improving training and testing practices. Some of the more recent Australian research in this area includes:
- the development and evaluation of training resources to accelerate perceptual and cognitive skill development (eg. Regan, Triggs & Godley, 2000);
- the development and evaluation of hazard perception testing (eg. Catchpole & Leadbetter, 2000);
- research into learning experiences that influence risk perception, such as exposure to near misses (eg. Regan et al, 1998);
- the trialing of programs designed to reduce risky attitudes and motivational influences (eg. Telfer, Cook, Watson & Field, 1987; Martin, Price & Fisher, 1991);
- research into the role of postural stability in driver perception (Treffner, Barrett & White, 2002); and
- the potential to enhance driver training outcomes through fostering metacognitive abilities such as self-monitoring (Bailey, 2002).

While this research is potentially very valuable, it is fragmented and largely uncoordinated. In addition, some of the research directions appear contradictory. For example, while a number of studies have focussed on developing techniques to enhance hazard perception skills, Harrison (2002) has mounted a strong theoretical argument for the limited likely effectiveness of training in this area. Accordingly, there is a need for a more coordinated research effort in this area. Without this, research designed to enhance the effectiveness of driver training will remain fragmented and have a limited impact on mainstream driver training practices.

## 4. THE NEED FOR MORE THEORY-DRIVEN RESEARCH

The design of driver training programs has generally been based on the views of experts in the field of driving. While the learning of 'expert procedures' may increase the proficiency of drivers, they do not appear to necessarily improve driver safety (Christie, 1995; 2001; Watson et al, 1996). A stronger theoretical approach is required to underpin the development of more effective training strategies. As noted by Grayson (1997, p.95): "There is nothing so practical as a good theory". Moreover, mainstream theories in the area of psychology and sociology have made a major contribution to understanding road user behaviour in other areas of road safety (Grayson, 1997). A stronger focus on theory should promote the development of training practices that are better grounded in sound educational and psychological principles of behaviour change.

It is encouraging to note that many of the studies mentioned in the previous section featured a strong theoretical foundation, including those by Martin, Price & Fisher (1991); Treffner, Barrett & White (2002); Bailey (2002) and Harrison (2002). Further work of this nature is required to better explain issues such as:

- the process of skill acquisition among drivers and the impact of training and practice on this process;
- factors that promote more effective learning outcomes eg. self-monitoring; and
- factors that contribute to risky driving practices and related strategies to reduce their impact on driving.

## 5. CONCLUSION

The wide variety of research priorities identified in this paper cannot be addressed in any one program of research. Rather, a philosophy of incremental improvement is required, involving the development and evaluation of innovative training practices. While some important research into driver training continues to occur in Australia, it is an area that receives limited funding. Given the apparent lack of effectiveness of driver training this is perhaps warranted. However, it highlights the need to ensure that the research that does occur is well grounded and coordinated. To assist in this process, it has been argued that there are three main priorities for future research in the area:

- the need for evaluations to focus on process aspects of driver training, as well as establishing its impact on key outcomes such as crash reductions;
- the need to focus more research attention on improving (and evaluating) training practices, particularly in relation to the development of hazard perception and decision-making skills, self-monitoring processes, and strategies to reduce the impact of risky attitudes and motivations on driving; and
- the need for more theory-driven approaches to the development and evaluation of innovative training programs, to ensure that training practices are based on the principles of behaviour change rather than on expert opinion.

Without better coordination, research into driver training will remain fragmented. Accordingly, it is essential that researchers and practitioners coordinate their efforts to ensure that innovative programs are developed and evaluated. This is necessary to bridge the gap between research and practice in this area.

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**Key words**
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