

EVALUATION OF RIDER TRAINING CURRICULUM IN VICTORIA, AUSTRALIA

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ABSTRACT

This paper presents an evaluation of the rider training courses (both learner and licence courses) from the different accredited rider training providers in Victoria, Australia. The evaluation sought to determine the balance between attitudinal and vehicle skill based components in the courses. It was carried out as the first stage of an investigation into replacing the learner permit system with a single licence.

The evaluation began with a review of the published evaluations of training courses to identify the relative importance of cognitive and vehicle control skills and to assess the contribution that each type of skill has made to the effectiveness of the courses. It then reviewed the learner permit and licence courses currently offered in Victoria to determine the balance between attitudinal and vehicle skill based components, and provided recommendations to improve the balance.

INTRODUCTION

In February 1998, the Road Safety Committee of the Victorian Parliament released a report entitled *Inquiry into the Review of Motorcycle Safety in Victoria*. Among its recommendations were:

That an independent evaluation of the rider training curriculum be conducted to determine the balance between attitudinal and skill based components.

That VicRoads determine through a trial study, if rider training skills can be acquired prior to introducing a single licence test so that the Minister for Roads and Ports may report to Parliament with its findings.

This paper describes the evaluation that was commissioned by VicRoads, the state licensing authority, to address the first recommendation (Haworth, Smith and Kowadlo, 1999). The results of the evaluation also formed the basis for development of a single licence course and test (Haworth and Smith, 1999) which is currently undergoing further development.

For the purpose of the study, attitudinal concepts and skills training were defined as follows:

- Attitudinal/Cognitive: any instruction or advice which directly relates to mental strategies or safe interaction on the road. It may be delivered in the context of teaching practical skills on the range or in the classroom. Components involving hazard perception and scanning, attention, decision making, judgement, risk taking, anticipation and other cognitive skills were classified as attitudinal/cognitive.
- Vehicle skill: any instruction or activity directed towards the development of vehicle control ability. It may be delivered in the context of teaching practical skills on the range or in the classroom.

LITERATURE REVIEW

The aims of the literature review were to identify the relative importance of cognitive and vehicle control skills in training courses that have been evaluated and to assess the contribution that each type of skill has made to the effectiveness of the courses. The emphasis was on training programs for novice riders, rather than experienced riders. There are a number of constraints to this in the published literature, including:

- insufficient details about course content,
- failure to compare programs with different emphases on cognitive and vehicle control skills,
- difficulty in classifying courses as learner or licence, and
- methodological problems in selection of trainees or control groups or small sample sizes.

Given that the evaluations did not set out to compare the effects of attitudinal and vehicle control components of training, it is not surprising that they contribute little to addressing this issue. Generally, the rider training programs reviewed focussed mainly on the development of vehicle control skills. This is not necessarily through choice but is often brought about through time constraints and the need to prepare a rider for an end test that is skill-based.

Some evaluation studies suggested that riders who scored higher on vehicle control skills in some tests had more crashes later (Anderson, 1980; Jonah, Dawson and Bragg, 1981). Tests requiring higher levels of vehicle control skills (such as MOSTII) did not reduce crash rates (Kelsey, Liddicoat and Ratz, 1986; Buchanan, 1988).

Some writers have hypothesised that the apparent lack of success of rider training in reducing accident risk stems from the content of the training programs (Chesham, Rutter and Quine, 1993; Crick and McKenna, 1991; Reeder et al., 1996; Simpson and Mayhew, 1990).

Chesham et al. (1993) concluded that 'training courses concentrate on riding technique and pay little attention to why safe riding is important. That is, they offer little by way of cognitive underpinning for the behaviours they promote. Already evidence is pointing to the types of underpinning that courses should aim to develop, and we hope that they will' (p .428). Rothe and Cooper (1987) concluded that 'the lack of riding skill is not the major problem. Attitudes, personality and awareness of others are'. They went on to recommend that 'motorcycle rider training courses should be more attentive to education than training' and these courses 'should use instructors who are better prepared to implement the educationoriented programs' (p.203).

Research in hazard perception supports this argument. McKenna and Crick (1992, cited in Crick and McKenna, 1991) found that a group of expert police drivers performed better on a test of hazard perception than a group of drivers with a similar level of experience. They considered that this difference most likely resulted from the greater quality and quantity of training received by the police drivers. They concluded that "this implies that hazard perception skills are amenable to modification and improvement through advanced training courses, which, given the established link between hazard perception and accident involvement, suggests in turn the potential value of advanced training courses as a means of countering road accidents" (Crick and McKenna, 1991, p.100).

Crick and McKenna ascribe the lack of evidence for the benefits of advanced training in road safety to a lack of methodological soundness in previous evaluations and to the content of the courses: "it may be the case that the [advanced] courses assessed have focused very little on the acquisition of hazard perception skills. The same might be said of basic, pre-licensure training courses, which if true, may explain other puzzling or paradoxical findings in the literature" (p.104).

Jonah, Dawson and Bragg (1981) attributed the failure of the Motorcycle Operator Skill Test (MOST) to predict accident involvement to the absence of testing for danger perception and risk-taking. "The focus of the MOST test and indeed most licensing tests is still primarily geared towards the acquisition of basic vehicle control, a fact which inevitably influences the content of elementary training courses aimed essentially, whether consciously or unconsciously, at equipping novices to pass the test" (Crick and McKenna, 1991, p.104).

Simpson and Mayhew (1990) speculate that some riders may actually benefit from skills training while others will not. They posit that perhaps trainees who begin with a relatively low level of skill development could benefit from training while others who are more skilled in vehicle control may find little safety benefit in completing a course.

NOVICE MOTORCYCLIST TRAINING AND LICENSING IN VICTORIA

In Victoria a novice rider must be at least 17 years and 9 months old before obtaining a learner permit. The rider is required to hold the learner permit for a minimum period of three months before attempting the licence test. If the test is passed, the rider is issued with a restricted licence for one year. During the learner and restricted periods, the rider is subject to an engine capacity restriction of under 260 cc and is prohibited from carrying a pillion passenger. During the learner period there is a zero blood alcohol restriction that continues for the first year of licensing if on a probationary licence (i.e. if the rider does not hold a full car licence). There is no exit test for the restricted licence.

Most newly licensed motorcyclists have car licences. In 1998, 84% of riders obtaining a motorcycle licence in Victoria had a full car licence. This means that they had at least three years solo driving experience in addition to up to two years driving with a supervisor.

Under the current motorcycle licensing system, there is little real difference between the restrictions on learner permit holders and restricted licence holders. Learner permit holders are allowed to ride

unsupervised. The original rationale for allowing learners to ride unsupervised on public roads was to allow them to gain on-road experience before attempting the (now discontinued) on-road test. However, there now exists the anomaly that a rider may fail the current licence skills test and continue to ride on the road as a learner permit holder.

Training is not compulsory to obtain a learner permit or a restricted licence, but most riders attend one or more training courses. There are six external providers of motorcycle training to offer training and testing services in the state of Victoria. VicRoads, as the state licensing authority, is responsible for the administration of the contracts under which the providers operate. Each provider has its own curricula incorporating all the requirements of the contract with VicRoads. Some of the providers utilise the earlier VicRoads motorcycle training curricula while others have developed new curricula.

Learner permit courses

The learner course for a student with no experience takes nine or twelve hours, depending on the provider. This includes administration of the learner permit test (less than 10 minutes) and, in some cases, break time. In recognition of previous experience, not all the riders undertaking training at learner permit level are required to complete the full course. A person who has the ability to ride forward, maintain balance and change gears, is permitted to undertake a course which comprises the latter six hours of the twelve hour course. The six hour course includes almost all of the cognitive skills coverage of the twelve hour course.

The learner permit training programs have a practical skills component, including:

- Identification/location of controls
- Mounting and dismounting techniques
- Manoeuvring the motorcycle by hand
- Friction zone - getting under way
- Gear changing
- Turning corners
- Slow riding techniques
- Riding curves
- Braking - normal stop/quick stop

They also have a knowledge training component which includes:

- Protective clothing
- Visibility/conspicuity of riders
- Braking and steering techniques
- Traffic riding situations/strategies (lane positioning, communication, speed regulation and following distance)

Some instructors may include a cognitive skills component in the practical skills. The extent of cognitive skills components in the knowledge training is dependent on the instructor.

Licence courses

The licence courses are of six or eight hours (one provider only) duration, including the administration of the test. The courses vary in the range of skills covered. Some newer courses cover a wider variety of material than that simply required to pass the test. All riders are required to complete the entire course, regardless of level of experience or skill.

The licence training programs have a practical skills component which includes:

- Counter-steering techniques (application to U turns, application to swerving around obstacles)
- Riding curves - progressively tightening curve (gentle to sharp curvature)
- Braking (quick stops on the straight, quick stops in a curve)

The knowledge training component includes:

- Setting up motorcycle controls
- Principles of counter-steering techniques
- Principles of emergency braking (straight, in a curve)
- Traffic riding situations/strategies

Some instructors may include a cognitive skills component in the practical skills. The extent of cognitive skills components in the knowledge training is dependent on the instructor.

REVIEW OF CURRICULA

The review of the motorcycle training curricula sought to establish:

- the balance between attitudinal and vehicle control skills across the present learner courses (averaged across providers) and across the present licence courses (averaged across providers);
- the variations between courses;
- suggestions for improvements and additions to the average course, and how any additional skills could be effectively taught to potential motorcyclists.

Methods used in the review

Motorcycle Safety Services evaluated the written curricula and visited each provider to observe the courses being run. Unfortunately, one provider was not able to participate in the project. This provider trained a relatively small number of riders (approximately 2% of the state total) and had a similar curriculum to two other providers. To provide an objective measure of allocation of time, a stopwatch was used to measure the amount of time spent riding a motorcycle during a course and the amount of time spent receiving attitudinal training.

Table 1 summarises the amounts of time spent by the rider on the motorcycle receiving practical vehicle

control instruction and the amounts of time spent on 'attitudinal' training in each of the providers' courses. These values include times spent in certain exercises where the rider is stationary waiting for a turn at a particular skill, such as emergency braking. Waiting can account for around 20% of the overall time and can severely limit the amount of time a student has to practice and receive instruction.

The ratios of time spent on vehicle skills compared to cognitive skills and the percentage of course time spent on each type of skill are presented in Table 2.

Table 1. Time spent on vehicle skills and attitudinal skills in the learner permit and licence courses.

	Time spent (hours:minutes)					Average
	Provider A	Provider B	Provider C	Provider D	Provider E	
Learner permit course						
Nominal course duration	12:00	12:00	9:00	12:00	9:00	10:48
Vehicle skills	3:04	2:24	2:17	3:25	2:14	2:41
Attitudinal skills	1:10	1:18	0:56	0:54	0:58	1:03
Licence course						
Nominal course duration	6:00	6:00	6:00	8:00	6:00	6:24
Vehicle skills	2:23	1:32	1:40	2:32	1:38	1:57
Attitudinal skills	0:34	1:05	0:52	0:34	0:56	0:48

Time spent teaching attitudinal skills

Learner courses

The average time spent on attitudinal training was 1 hour and 3 minutes, of which up to 29 minutes comprised related videos. The remaining time was spent describing vehicle control skills, the subsequent exercises and moving between exercises.

The total time spent on attitudinal skills varied from 54 minutes to 76 minutes. In general, 12-hour courses spent more time on attitudinal skills than 9-hour courses (except Provider D).

On average, attitudinal training comprised just under 10% of the course time.

Licence courses

Attitudinal training comprised an average of 48 minutes, with approximately 30% (14 minutes) comprising videos. The remaining time of the course was spent teaching vehicle control skills, describing the skills and moving between the exercises.

The total time spent on attitudinal skills varied from 34 minutes to 65 minutes. The 8-hour course did not spend more time on attitudinal skills than the 6-hour courses.

On average, attitudinal training comprised about 13% of the course time.

Table 2. Relative amounts of time spent on vehicle skills and attitudinal skills in the learner permit and licence courses. Other activities include delivery of explanations, descriptions of exercises and course administrative activities.

	Provider A	Provider B	Provider C	Provider D	Provider E	Average
Learner permit course						
Ratio of time vehicle skills to cognitive skills	2.6	1.8	2.4	3.8	2.3	2.6
Percent of time on vehicle skills	25.6	20.0	25.4	28.5	24.8	24.8
Percent of time on attitudinal skills	9.7	10.8	10.4	7.5	10.7	9.8
Percent of time on other activities	64.7	69.2	64.3	64.0	64.4	65.4
Licence course						
Ratio of time vehicle skills to cognitive skills	4.2	1.4	1.9	4.5	1.8	2.8
Percent of time on vehicle skills	39.7	25.6	27.8	31.7	27.2	30.5
Percent of time on attitudinal skills	9.4	18.1	14.4	7.1	15.6	12.6
Percent of time on other activities	50.8	56.4	57.8	61.3	57.2	57.0

Time spent teaching vehicle control skills

Learner courses

In learner courses, the average amount of time a novice rider spent on the motorcycle receiving skill based training was 2 hours and 41 minutes. Approximately 20% of this time was spent waiting for the opportunity to practice a particular skill, resulting in a net time of 2 hours and 9 minutes. However this measurement did not include explanations of skills or descriptions of exercises.

On average, vehicle skills training comprised about 25% of the course time.

Licence courses

In the licence level courses, the average amount of time spent riding the motorcycle was 1 hour and 57 minutes. Of this time, approximately 15% was spent waiting to attempt exercises resulting in a net time of 1 hour and 40 minutes.

On average, vehicle skills training comprised about 30% of the course time.

Balance of attitudinal and vehicle control skills

Learner courses

In the average learners course duration of 10 hours and 48 minutes, 10% of the time is spent covering attitudinal issues and 25% practising vehicle control skills. Thus, the time spent on vehicle control skills is 2.6 times greater than that spent on attitudinal skills.

In the courses currently offered to learner riders, there is a relatively small amount of time spent riding the motorcycle in the course prior to being tested and then being allowed to ride on the road. In addition, a comparatively small amount of time is spent addressing attitudinal issues. The remaining time is primarily spent describing skills and techniques, as well as providing feedback to students.

Licence courses

In the average licence level course duration of 6 hours and 24 minutes, 13% of the time was spent covering attitudinal issues and 30% was spent practising skills needed for the licence test. Thus, the time spent on vehicle control skills is 2.8 times greater than that spent on attitudinal skills.

The average proportion of time spent on attitudinal and vehicle control skills is similar for the learner and licence courses. On average, trainees spend more than twice as long on vehicle control skills than attitudinal skills.

CONCLUSIONS AND RECOMMENDATIONS

The review of the written curricula found that:

- all contents of the curricula provided by the accredited providers comply with VicRoads requirements,
- all curricula have satisfactory progression through the practical components, in terms of increasing difficulty,
- all have structured "roadcraft" components, and
- all are severely constrained by time limits due to commercial considerations and the licensing process.

The review of the delivery of the course components found that:

- vehicle control skills receive about two to three times as much course time as attitudinal skills in both the learner permit and license courses,
- there is widespread inconsistency among instructors in the delivery of the programs at all but one of the providers, particularly with attitudinal concepts,
- lack of repeated practice due to time constraints restricts skills acquisition frequently to only just sufficient to pass the statutory test, and
- none of the providers have developed a practical method of teaching how to identify hazards while riding.

The providers deliver similar programs with similar content but with their own style of presentation. All the providers felt that the students, particularly at learner level, had insufficient skill and inadequate attitudinal training to ensure their safety while learning on the road. This was also supported by many of the students themselves.

Some possible solutions appeared to be increasing the efficiency of delivery of courses by improved time management (reducing waiting times and delays between components) and improving the effectiveness and consistency of presentation of the attitudinal components (including using overhead transparencies). Even if these improvements are implemented, it is still likely that trainees may continue to have insufficient skill and inadequate attitudinal training to ensure their safety while learning on the road.

The evaluation also identified a need to develop a hazard perception program and test that can be introduced by all training providers.

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