Whither Driver Education and Training?

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"…….the only method of reforming human nature and of obtaining a higher standard of morality is by educating the mind of the individual and improving the social conditions under which he lives."

"It is slow but it is sure." Winston Churchill 1894.

It was uplifting to receive the February 2009 copy of the A.C.R.S. journal and to find it almost entirely dedicated to driver education and training with contributions from both practitioners and researchers.

I am a practitioner of some 25 years experience working with a varied clientele ranging from pre-license teenagers to counter terrorist diplomatic drivers and up to 250 ton mining equipment operators. I have also provided staff training and consultancy services in several overseas countries.

This presentation will focus on:

- Pre-license education.
- Learn-to-drive.
- Provisional license learning activities.

The learn to drive industry, by its nature, must focus primarily on the student passing the driver's test. With the best will in the world, safety presentations have been forced to take second place to this primary requirement.

In Queensland, the recently introduced graduated licence system appears to have impacted on the use of professional learn to drive schools. With the perceived advantage of being awarded three logbook hours for one hour of professional tuition by a licensed, accredited trainer, many thought that the learn-to-drive industry would become more lucrative. As a result more people entered the industry. This perception does not appear to have been fulfilled. A number of Queensland Transport testing officers have told me that the trend is toward using the learn-to-drive operators to top up on the requirements for the driving test and/or to advise when the student is test ready.

The requirement of 100 hours of supervised learning experience has resulted in parents and friends overseeing most of the learning process. This has the advantage of presenting to parents the opportunity to discuss matters of social importance such as peer pressure, drink driving, road rage, anger management etc, within an experiential learning environment. However, after 25 years of working with and critically observing the general

driving public, from the point of view of technical driver input and traffic management; I am reminded of a passage from the Old Testament (Exodus 34.7). "…visiting the iniquity of the fathers upon the children, and upon the children's children, unto the third and to the fourth generation." I fear that if this trend continues the breadth and depth of training will continuously shrink, which would adversely affect safety.

Perhaps the graduated licence system could be further improved by introducing some performance based incentives:--

- A shorter period on provisional license for those who pass the license test with a high score.
- Those who record no traffic infringement could be awarded a reduced provisional license period.
- Those who have not been involved in any crash incident also be rewarded with a reduced provisional license period.
- People who perform inadequately could be 'demoted' rather than suspended. That is, go back to an earlier phase with increased controls and supervision. Thus keeping them in the management system.

Many organizations throughout the world have tried to implement provisional driver training courses of various types. Research into, and assessment of these activities, has generally failed to produce convincing positive or negative outcomes. This has been due largely to the extraordinary difficulties encountered by researchers in following up on the performance of participants and in establishing credible control groups. Changes in social, legislative and other external events have also added elements of confusion to perceived outcomes. *(Dan Report EU—Project 2000.)*

Many or most of these studies have been carried out by selecting groups on the basis of 'practical' driver training, without sufficient reference to the quality or appropriateness of course content, or the context in which the presentations were carried out. They have also been primarily one day programmes. Long experience assures me that these programmes should be two to three day activities if we want to reach beyond basic vehicle handling skills and into the important areas of attitudinal development in order to achieve assured consequential behavioural change. Experience with many hundreds of young people assures me that trying to address attitudinal and behavioural concepts before a reasonable degree of driving automaticity is achieved, is simply too difficult for both the instructor and student. Learning the initial driving skills is too complex to be combined with any other concepts. Until the vehicle can be handled at reasonable traffic speeds the student should not be exposed to, nor should they expose others to the dangers of the public road.

Many years of working with both pre and provisional license holders, often in the same car at the same time, strongly indicates that attempts to present effective education and training to provisional drivers is somewhat like closing the stable door after the horse has bolted. In our society, the attainment of a drivers licence is viewed by young people as a, if not the, major milestone in their "Rite of Passage" to adulthood. In many, if not most, teenage minds the attainment of the licence is the objective, not the safety aspects of road use. In Maasai society in East Africa a young man might be required to kill a lion as a mark

of his passage to manhood. In our society the two black acceleration marks left on the bitumen are a representation to them, and their mates, of a similar attainment of power.

In a car with four students, we often have a provisional licence holder and three pre-licence learners. The provisional driver will often attempt to assert their superiority by showing off to the learners. If this does not happen, then the learners may elevate the provisional driver onto a pedestal and create an expectation of superior performance. The degree of development of this interaction will depend on the group dynamic. Often these pre-conceptions have to be dealt with and disposed of, before effective learning can begin. Sometimes a quite severe de-construct / re-construct technique has to be employed to clear the way for learning to get started.

It is these experiences which lead me to believe that it is much more effective to present the fundamentals of safe driving education and training to pre- licence participants.

Driving in modern traffic situations is a highly developed, socially interactive activity. Yet, we set about preparing our new drivers in a relatively isolated one-on-one training situation.

The early introduction to the complex task of driving and traffic behaviour would prove more beneficial if early learners were introduced to the subject in groups. In a safe non-public road environment, some 20 to 30 beginners in four or five cars can be effectively exposed to the range of attitudes, behaviours, skills and aspirations required for effective road use. In such a system these concepts can be mixed and matched to suit the group dynamic and provide the basis for a collaborative interactive learning experience.

Once basic vehicle handling skills are learned, some vehicle dynamic limitations understood and behavioural aspects of road use have been experienced to an acceptable level; the learners can be carefully and safely introduced to the real on-road world. By this time a group dynamic has been established and can be positively utilized by a well trained and experienced driver educator.

> *"…develop and integrate different kinds and levels of activities which contribute to intelligent action rather than simply attempting to pass on formal knowledge."*
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> *" …we only live in and know about our world insofar as we engage in it in some way."*
> [G. Morgan, R. Ramirez, Action learning: a holographic metaphor for guiding social change, Human Relations 37 (1) (1983) 1–28.]

In modern society, in recent years we have effectively disengaged our children from much of the real world. It is now not easy for a young person to be exposed to risk and thereby develop a sense of risk perception. Then, at 17 years of age, at a time when most of their social and emotional environment is being redefined, there is a cultural expectation that they will quickly and successfully master one of the most dangerous of human activities.

To stay safe in our modern traffic environment there is a lot to learn. Some brain scientists are now suggesting that learning to walk is the most difficult thing a human being is required to do. These same scientists are also suggesting that driving a motor vehicle is perhaps the second most difficult thing we have to learn. *[Understanding the Brain: The Birth of a Learning Science;* O.E.C.D. Publication, C.E.R.I. 2007*.]*

With 1.2 million people killed by motor vehicles world wide each year perhaps they are correct!! **Surely we can do better!?!?**

The use of the large group and several cars could well work out cheaper, in dollar terms, than the very expensive one-on-one system presently in use. This could be a major factor in emerging nations where any formal type of learn-to-drive is not in existence or is very rare. For example, there is very limited formal learn-to-drive in Papua New Guinea.

Conclusion:

Learn to drive trainers only have a short period of time with their students and are trying to impart a great deal of complex information, based on their own training and experience.

What I believe is required is more research into the many and complex facets of safe driving. This research would greatly enhance the base knowledge and understanding of the human visual, haptic and auditory responses required for safe road use. This, in turn, will foster the development of improved educational processes, which would lead to more effective road use education.

Further Research:

There is an urgent need for further research into the concepts of motion sensitivity and energy empathy.

- What are the mental and physical processes by which we perceive and respond to speed, mass and distance in the on road or traffic environment?
- To what extent are these processes visual, (either primary or peripheral) haptic or auditory?
- How are these perceptions and processes interrelated?

The advent of effective simulators which can accurately replicate on-road conditions will allow us to better understand the human processes associated with safe road use.

Our vision, or more accurately the use of our vision is the most important single skill a driver has to master. Eye tracking or gaze monitoring equipment is now available. This technology has the potential to open up a very exciting new field of research.

Used in conjunction with seat movements, which adequately replicate feel, haptic responses will be able to be monitored and their effects on gaze orientation and response measured and understood.

Various distractions could then be introduced and their effects on peripheral vision and perception be gauged.

Although perhaps still some time away, brain scanning technology may be able to be incorporated to give us some further insight into brain function in relation to safer road use.

These are very exciting possibilities.

Perhaps with sufficient understanding of the processes required we could make the **naturally** conditioned 75kg and 25 k/h human safer, while we are trying to guide these missiles weighing from one to sixty tons or more at **unnatural** speeds of 110k/h or greater.

Further reference:-

Hatakka, M., Keskinen, E., Gregersen, NP. & Glad, A, Hernetkoski, K. (2001). *From control of vehicle to personal self-control; broadening the perspectives to driver education.* [GDE framework (GADGET, 1999)]

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Summary

- The February A.C.R.S. Journal was dedicated to driver education & training.
- This presentation will focus on driver education & training, with particular emphasis on pre-license, learn to drive and provisional drivers.
- Group learning rather than one-on-one learn to drive.
- Explain the purpose of off-road and on-road learning experiences.
- Question the value of any one day driving course.
- The drivers license as evidence of ‘rite of passage’ to adulthood.
- Outline collaborative interactive learning or Active Learning *(as described by Morgan& Ramirez)*
- The failure to develop an effective methodology for research and assessment into provisional licence holder courses which provide conclusive results.
- Research opportunities
    - The use of simulators.
    - The potential value of eye tracking or gaze monitoring equipment.
    - Measure haptic responses and their effect on gaze orientation and vehicle direction.
    - The effect of distraction on gaze orientation and peripheral vision/perception
    - Brain scanning technology - a tool for future use in understanding and enhancing road safety.

Abstract

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Title Whither Driver Education and Training?

Introduction:

Employing both empirically sound research as well as 25 years driver education and training experience, the purpose of this paper is to provide a critical review of the importance of pre-licence education, learn to drive and provisional licence learning activities. Also, reference will be made to Queensland's recently introduced graduated licence system.

Methods/ Results:

A review of the scientific literature, including the domestic and international experience of driver education and training will be conducted.

Conclusions:

It will be argued that the early introduction to the complex task of driving and traffic behaviour would be more beneficial if pre-license learners were introduced to the subject in groups. For example, in a safe, non-public road environment, it is possible that 20 to 30 learners, in four or five cars can be exposed to the range of attitudes, behaviours, skills and aspirations required for effective road use **before** being introduced to the real on-road driving experience. It will be argued that through the use of such a system, the concepts can be mixed and matched to suit the group dynamic and provide the basis for a collaborative interactive learning experience, giving recognition and adding value to the contributions of each participant.

Research Possibilities:

The use of simulators.
The value of eye tracking equipment, the measurement of haptic responses and their effect on vision/perception and vehicle direction.
Brain scanning technology.

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