

# EVALUATION OF TWO BICYCLE PROGRAMS FOR PRIMARY SCHOOL CHILDREN IN THE ACT:

## ***BIKE ED AND THE TRAFFIC CENTRE ROAD SAFETY PACKAGE***

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### **Abstract**

Evaluations of two ACT bicycle safety education programs for primary school children, *Bike Ed* and the *Traffic Centre Road Safety Package (TCRSP)*, were undertaken in 2006. The ACT *Bike Ed* program is based on the National *Bike Ed* program, which consists of seven modules aimed at providing riding experiences in different environments, and is delivered in schools by Pedal Power ACT Incorporated. The *TCRSP* uses the Belconnen Traffic Centre and involves children riding bicycles and acting as pedestrians in a mock road environment. A content evaluation was undertaken on the programs using the Austroads Road Safety Education Check List and a Bicycle Program Check List. The latter Check List was developed during the first stage of the project. Observations of the bicycle programs 'in action' in both the classroom and the playground for ACT *Bike Ed*, or in the case of the *TCRSP*, at the Belconnen Traffic Centre, were undertaken. A process evaluation which involved face-to-face interviews with teachers, program developers, managers and trainers was also undertaken. The evaluations identified a number of positive and negative aspects of both programs and many recommendations for improvements were provided. The ACT *Bike Ed* program was found to be a worthwhile program that should continue. It will benefit from a number of improvements, particularly from the provision of on-road practical training. Unfortunately, research shows that traffic centres have little to offer children in the development of bicycle and related road safety skills, and hence it is recommended that the *TCRSP* be discontinued. However, there may be other reasons to provide the program and if so the suggested improvements to this program should be implemented.

### **Introduction**

During the second half of 2006, the NRMA-ACT Road Safety Trust engaged ARRB Group to evaluate two bicycle safety education programs for primary school children currently operating in the ACT: *Bike Ed* and the *Traffic Centre Road Safety Package (TCRSP)*.

ACT *Bike Ed* (Figure 1) is based on the National *Bike Ed* program, and adapted for individual school needs by Pedal Power ACT Incorporated. Seven modules, taught over eight weeks are aimed at educating Year 4 children in the following areas:

- basic bicycle riding skills

- simple bicycle knowledge and maintenance
- safety issues such as helmet use
- pedestrian and vehicle awareness

and provide riding experiences in a number of different environments. A classroom session is also delivered as part of the program which involves the children watching a DVD called 'Here's your bike, Ed!' and completing a quiz devised by Pedal Power.

The *TCRSP* operated by the Australian Federal Police (AFP) using the Belconnen Traffic Centre (Figure 2), involves Year 4 children riding bicycles and acting as pedestrians in a simulated road environment. The objectives of the program are to communicate the road rules and improve bicycle riding skills. There is an initial classroom session on the road rules given by a uniformed police officer using the Kenny Koala character or a classroom teacher. One or two weeks later children attend the Traffic Centre for a practical session which involves off-road bicycle riding and pedestrian behaviours.



**Figure 1 – Children participating in ACT Bike Ed (listening to trainer)**



**Figure 2 – Children participating in the Belconnen Traffic Centre practical session**

#### **Method**

A search of the relevant literature databases available to ARRB's MG Lay Library, located at ARRB's Melbourne office, and the project team's expertise and knowledge around cycling programs was utilised to access the relevant literature related to the bicycle program/skills area and associated educational methods.

One of the ARRB team's education experts engaged with a number of cycling organisations and researchers, including the Bicycle Federation of Australia, and attended a forum of the Amy Gillett Foundation in July 2006. Informal discussions were held with key stakeholders on the various training programs being undertaken by cycling groups around Australia and how cycling safety can be optimised. This assisted in identifying sound cycling practices.

In addition to gathering information through the above sources, ARRB made contact with the personnel responsible for *Bike Ed* in Victoria and South Australia to determine their perceptions of the currency and effectiveness of school bicycle programs, the processes they follow or intend to follow, and any other associated issues. This task assisted with the development of a Bicycle Program Check List that was used in addition to the Austroads Road Safety Education Check List (Catchpole et al. 2004), during the desktop audit section of the content evaluation.

Face-to-face interviews with program developers and trainers were undertaken to discuss bicycle program content and process issues. Face-to-face interviews with program managers were also undertaken to obtain information on process issues. Finally, teachers were also interviewed to determine any problems/issues encountered during the teaching, areas for improvement etc. Observations of both classroom and practical sessions of each program were also undertaken.

Six schools that did not participate in the programs (but had been offered the opportunity) were contacted by phone to obtain information on why they did not participate in any of the programs and any associated issues.

### **Literature review and consultation**

The literature review and consultation identified 23 areas for consideration during the development of the Bicycle Program Check List, some of which included:

- training to occur at age 10 to 11 rather than older (Preston 1980); minimum 9 years of age (Bennett, McGovan & Wood 1984); 9 years of age for off-road training and 10 years of age for on-road training (RoSPA 2000)
- tailor programs to abilities and environment of trainees (RoSPA 2000)
- tests to be of sufficient difficulty (Preston 1980)
- student to instructor ratio of 6:1 or 8:1 with a minimum of two trainers present at all times (RoSPA 2000)
- basic control ability – ability to mount and dismount safely, ride in a straight line, ride curves safely and use brakes correctly (Saville, Bryan-Brown and Harland 1996)
- safe behaviours – looking for other traffic, signalling (including before stopping), hazard identification etc. (Rivara & Metrik 1998; Saville, Bryan-Brown and Harland 1996)
- riding practice (Saville, Bryan-Brown and Harland 1996)
- typical programs take four to eight weeks, with each session lasting one to one and half hours (approximately a seven hour commitment from a participating child) [Saville, Bryan-Brown and Harland 1996]; several weeks versus one to two intensive weeks (RoSPA 2000; Saville, Bryan-Brown and Harland 1996)
- practical on-road training (RoSPA 2000; Saville, Bryan-Brown and Harland 1996)
- riding one's own bicycle (Saville, Bryan-Brown and Harland 1996)
- bicycle education should be taught as part of a continuum of traffic safety education (Stutts & Hunter, in Rivara & Metrik 1998).

The literature review also revealed that traffic centres such as that operated by the AFP, have little to offer children in the development of bicycle and related road safety skills. Scientific evaluations conducted in Europe in the 1970s and early 1980s revealed that such off-road facilities did not adequately simulate the real traffic environments and were not effective in improving the behaviour of children who underwent training; training conducted in the real road environment was found to be significantly more effective than that conducted off-road (Christie 2000). A more recent study by Hughes and Pietro (2004) concluded that no clear evidence existed that traffic centres are an effective road safety education strategy, and it was not possible to support the establishment of such facilities. In addition, such centres may inadvertently encourage students to become over-confident about their ability to cope safely in traffic.

## Content evaluation

A desktop audit on both programs was undertaken using the newly developed Bicycle Program Check List and the Austroads Road Safety Check List (Catchpole et al. 2004). Some of the 20 positive aspects of the ACT *Bike Ed* program identified include:

- The majority of the program is practical in nature with an emphasis on skill and strategy building.
- Some of the practical training takes place on bicycle paths and/or footpaths with the incorporation of road crossings.
- The program does not encourage over-confidence.
- The use of bicycle helmets, footwear and other protective equipment is promoted.
- The trainers encourage and model safe behaviours.
- The program builds from basic skills to more complex skills in a sequential manner. Students can apply what they learn to 'real world' bicycle riding and achieve road safety outcomes from each module taught.
- A range of teaching methods are used.

Examples of the 10 negative aspects of ACT *Bike Ed* include:

- On-road training is not delivered, although this is a component of the National program.
- The theoretical component of the program is mostly teacher-centred, whereby the teacher as the 'holder of all knowledge' assumes the students need to be told or directed to learn.
- There are no formal assessment components.

Some of the nine positive aspects of *TCRSP* identified include:

- The program builds an understanding of the general road rules and helmet use, and other protective equipment is emphasised.
- The program provides bicycles for all children.
- Road rules relevant to bicyclists are taught.
- Positive attitudes and behaviours toward sharing the road are discussed during the program.

Examples of the 22 negative aspects identified in relation to *TCRSP* include:

- Training is at an off-road facility using a simulated road environment which may encourage on-road riding and over-confidence.
- There is no information presented on the causes or consequences of bicycle crashes.
- The program is not strategic and sequential, nor does it allow for progression of achievement as it is based on only one classroom and one practical session.
- The program does not adequately challenge beliefs and attitudes that can lead to unsafe behaviours.

## **Bicycle program observations and process evaluations**

### *ACT Bike Ed*

Throughout the practical session observed children generally were actively participating and appeared engaged and attentive. They followed instructions and all took part in the practice activities. It was clear from the observation that the bicycle skills of the children varied greatly. This ranged from those who seemed to be still learning basic control skills to a group of boys on BMX bikes, who were clearly skilled riders. The general approach to the practical session is to have all children practising the same skills, regardless of skill level, which is consistent with the National *Bike Ed* program approach. The trainer explained that where a child experiences difficulties in performing a particular skill, they can be taken to one side for some extra tuition and given further time to practice, but this was not observed. This is good, but does not deal with the issue of the more skilled child not being sufficiently challenged. A number of children in this class were also regular riders to and from school.

From an educational perspective the classroom session was somewhat limited. It is important that where possible children are actively engaged in their learning, teaching is student-centred and that approaches such as problem solving are used. For instance, rather than following the DVD with a written quiz that was completed individually, it may have been better to have had the students more actively engaged. An activity that more directly relates to the story in the video could be devised, such as discussing some key issues from the video in small groups. The quiz could also be worked through as a small group activity where discussion was encouraged.

*ACT Bike Ed* was initially promoted through Pedal Power members to teachers, parents or people with an interest in the program from a community perspective. The ACT Education Department and Catholic Education Office were also advised of the program. Expressions of interest were then followed up with each school.

For the 2006 program schools that expressed some interest were contacted by phone and followed up by an electronic flyer as well as an email explanation of what the course entailed. This was followed up by a second phone call. In general, the program is promoted:

- via Pedal Power membership through the club newsletters and magazines
- to schools in the YWCA Walking Bus program
- through direct contact with schools that Pedal Power is aware have an interest.

The program appears to be very popular, with no schools declining the invitation to participate or dropping out of the program. There is also a waiting list at present. Perceived barriers to delivering the program include:

- timing issues – the class is too busy to fit in *ACT Bike Ed*, not enough notice to change programming in the school

- resource issues – availability of certified *Bike Ed* instructors; teachers taking on yet another role.

Schools do not have to undertake major steps to participate in the program. A school needs to guarantee there will be sufficient class time once a week for seven to eight weeks of the term. Teachers need to pass information on the program to children and parents.

Some feedback from teachers has been provided informally, but official feedback is not collected. Pedal Power intends to conduct regular reviews of the course.

### *TCRSP*

Two practical sessions held at the Belconnen Traffic Centre were observed. Apart from the teachers there was only one police officer present and two community helpers. The police officer arrived close to the arrival of the school group. He then gave a brief and limited introduction to the class which lacked any real educational value. In discussion with the police officer between sessions he noted that he had only taken the session once before. It was obvious that he was unclear on his role and what the focus and outcomes of the session were really meant to be.

For the second session, the police officer led a brief discussion at the start of the session, which involved pointing out the dangers on the road and the vulnerability of cyclists. He noted the importance of wearing a correctly fitted helmet and asked the children the meaning of red, yellow and green traffic lights. Children were told to obey the signs and 'have fun'. Overall the police officer was very relaxed and did not appear to participate fully in the session to ensure children exhibited the correct behaviours.

The sessions were heavily focused on getting the students on their bikes and riding. There was no assessment of skills before students were sent off to ride around the simulated road network. The second session was concluded with the police officer showing students his police motorcycle, including the siren. While the students were very interested it was of limited relevance to the session.

In both observed sessions the police officer did not discuss correct helmet wearing or adjust any helmets. At least 10 children in each class were observed to be not wearing their helmets correctly (Figure 3). Many wore hats underneath their helmets, which severely affects the effectiveness of a helmet in the event of a crash.



**Figure 3 – Children with incorrectly fitted bicycle helmets at the Traffic Centre**

The classroom session observed involved an interactive class discussion led by the teacher. This followed the framework from the *TCRSP* Teacher's Manual and was the second session she had run with students prior to the visit to the Traffic Centre.

The teacher drew heavily on the children's experiences in the discussion, including drawing similarities with responsibilities when driving a car. It is important to acknowledge that the teacher involved had developed her own approach to the classroom work, rather than simply using the worksheets provided in the *TCRSP* Student's Workbook. This is significant and shows that many teachers will attempt to create more interesting lessons for students if the material they have is limited. There is scope for teachers to be provided with a few more innovative ideas for activities and ways they could approach these classroom sessions.

The AFP Crime Prevention team were responsible for the *TCRSP* program, but a few years ago the Traffic team became responsible for the *TCRSP*. Since January 2006, the AFP has contracted National Promotions to undertake the marketing and general organisation of the program. The Traffic team could not provide information on how many schools had attended in the past. The Traffic team did provide information on the number of children that had attended over the last few years which ranged from 3334 children to 3466 children from the 2002-03 financial year to the 2005-06 financial year.

For 2006 National Promotions indicated that out of a possible 105 available session times, 84 were filled and 21 sessions went unfilled. National Promotions has a target of enrolling 3700 children in the traffic school each year (a school holiday program assists in this target). Statistics on the number of schools booking sessions in five geographical zones were also provided.

National Promotions employs emails, letters and faxes to promote the program to schools (they promote the entire Kenny Koala program – which addresses other areas of safety and community responsibilities). Schools can book the Traffic Centre by email, fax or on the website. The majority, if not all, schools are aware of the Kenny Koala program. Barriers to attending the



program, as indicated by National Promotions, are wrong timing of the program, not part of class syllabus and composite classes.

National Promotions have recently begun evaluating the program by obtaining feedback from teachers. However, very little feedback from teachers has been received. National Promotions appear extremely organised in terms of running the program and will re-schedule cancelled sessions due to bad weather.

## **Conclusion**

The evaluations undertaken during the project outlined a number of positive and negative aspects of both programs and many recommendations for improvements were provided. Overall, the ACT *Bike Ed* program was found to be a worthwhile program that should continue. It will benefit from a number of improvements, the most important being the provision of on-road practical training. Unfortunately, research shows that traffic centres, such as that operated by the AFP, the Belconnen Traffic Centre, have little to offer children in the development of bicycle and related road safety skills. Such centres may inadvertently encourage students to become over-confident about their ability to cope safely in traffic, and hence it was recommended that the *TCRSP* be discontinued.

As a result of the project, the AFP discontinued the *TCRSP* from 29 June 2007. However, it continues to deliver the classroom cycling education component as part of the popular Constable Kenny Koala safety program. Pedal Power has incorporated many of the recommendations made by ARRB to enhance the ACT *Bike Ed* program, which it delivered in a number of primary schools during the first half of 2007. The program is continuing to be delivered by a private provider, Cycle Education Pty Ltd, from the middle of 2007.

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