

# ROAD SAFETY EDUCATION AND ROAD SAFETY EXPOSURE ...contradiction and/or correlation?

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## INTRODUCTION

The daily traffic safety situation deals with the life of human beings and the loss of it. During 1998 637 young road users under the age of 12 years were killed on South African roads. This is not only a South African phenomenon. The well-known Van der Molen summarises the international reflection of this situation as follows:

*“Traffic accidents form the most serious threat to the lives and health of children. The truly epidemic aspects of the child traffic accident problem have drawn attention on an international scale.”*

All over the world researchers are striving to find solutions for this harsh reality. In South Africa the focus is on a multi-disciplinary approach. This approach includes the “four integrated E’s” (education, engineering, enforcement, evaluation) which forms the core solution. This paper will focus on road safety education as contribution in the alleviation of accident statistics.

When international trends regarding the level of road safety education in schools are taken into account, it appears that road safety education plays a definite, explicit role in accident rates. International research has shown that in countries where road safety education is compulsory, the accident rate is relatively low whereas in countries where there is no or partly compulsory road safety education the accident rate is relatively high. It is clear that young road users must be empowered with relevant knowledge, applicable skills and a positive attitude to such an extent that road safety education can penetrate not only the individual learner but also the society. The emphasis is thus no more on the past inside-outside teaching learning situation only but on a simultaneous inside-outside-outside-inside process. This means that formal, informal and non-formal road safety education targeted at different groups in society can take place simultaneously in order to reach all road user categories. The focus is thus not only on the integration of road safety education programmes in the formal school set-up but also on community-driven road safety projects.

In order to develop an effective road safety education programme for young learners from Grade R (traditional pre-primary school phase) to Grade 7 a research study was conducted in the North West province. It is essential to relate the results of the empirical study to the findings of the literature study. The statistical-empirical information, as obtained from questionnaires for teachers and parents of Grade R learners and learners in the foundation and intermediate phase, dealt inter alia with a comparison between the exposure of the mentioned target group to specific traffic situations (in the presence and absence of their parents) and the current traffic safety education praxis in schools and at home. The assumption is that if young road users will receive specific theme-related education and training they will be accident-free in their exposure to related traffic situations. This paper will thus focus on the correlation between the South African road safety education praxis versus the exposure of young road users to the traffic environment.

It is essential to combine developmental stages with road user categories in order to compare the level of education to the exposure rate in an age-related framework. The following general division was drawn up by Monteith in 1987 (Dreyer, et al., 1999:67):

**Table 1: Road user categories and human developmental stages**

Developmental stages	Road user categories					
	Pedestrian	Passenger	Cyclist	Motorcyclist	Driver of motor car	Driver of heavy vehicle
<b>Infant</b> 2-6 yrs	X	X	X	-	-	-
<b>Foundation phase</b> 6-8 yrs	X	X	X	-	-	-
<b>Intermediate phase</b> 9-11 yrs	X	X	X	-	-	-
<b>Adolescent</b> 12 – 18 yrs	X	X	X	X	X	X
<b>Adult</b> 18+ yrs	X	X	X	X	X	X

It is clear that road user roles change according to the age of the road user. Road safety education focuses on present as well as future road user roles. Therefore although the target group consists of Grade R – 7 learners (5 – 12 yrs) who are mainly pedestrians, passengers and cyclists, the exposure rate and the level of education regarding matters such as attitudes, which plays a fundamental role in all the road user categories will also receive attention.

## EXPOSURE

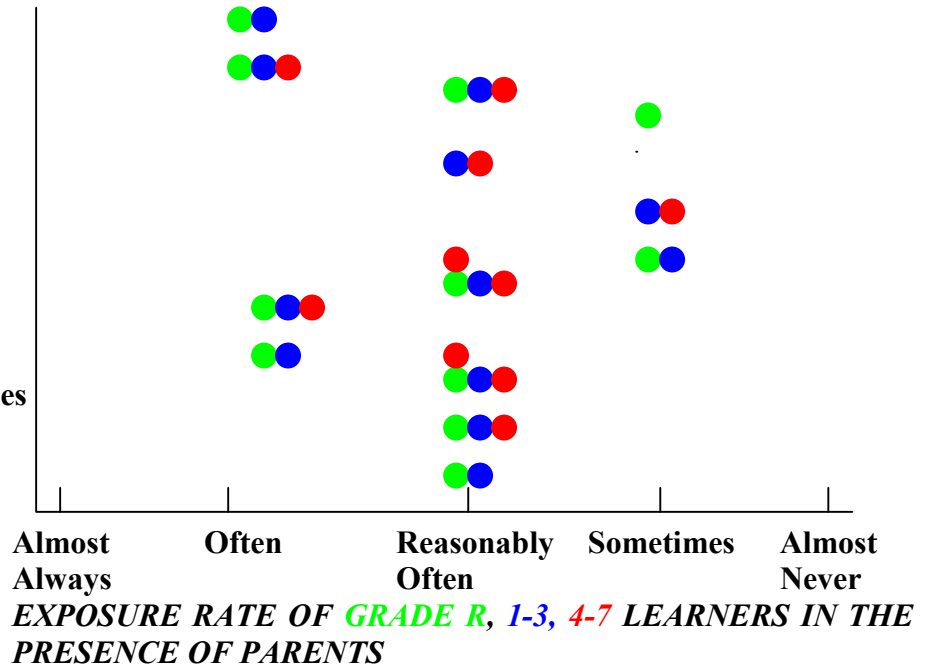
The following reflects the exposure of young road users in **Grade R**, the **Foundation** and **Intermediate** Phase in the presence and absence of parents during traffic participation.

It is clear that young road users in all mentioned school phases were exposed in the presence of their parents mostly to situations where they were confronted with “crossing of a road/street”, “usage of seat belts”, “safe places to play” and “attitudes”. Learners in all school phases are exposed least to cycling situations, which include “usage of hand signals” and “rules for cyclists” in the presence of their parents during traffic participation.

**Graph 1: Exposure of Grade R-7 learners to traffic situations in the presence of parents**

**SITUATION:**

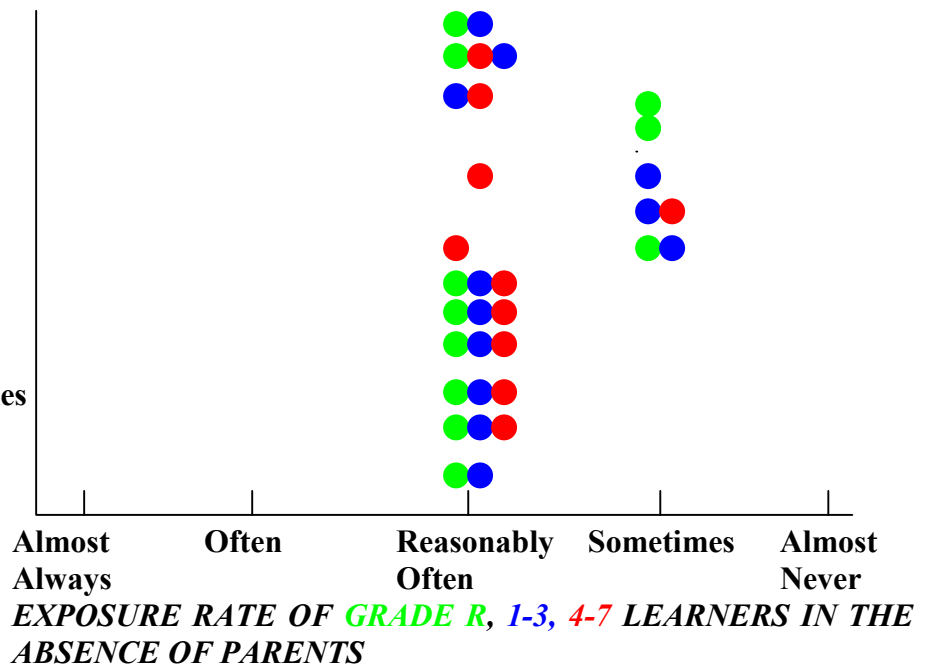
- Safe place to play
- Cross a street/road
- Rules for pedestrians
- Usage of tri/bicycle
- Where to ride
- Usage of hand signals
- Rules for cyclists
- Rules for passengers
- Usage of seat belts
- Attitudes
- Interpretation of traffic rules
- Application of traffic signs
- Traffic environment



**Graph 2: Exposure of Grade R-7 learners to traffic situations in the absence of parents**

**SITUATION:**

- Safe place to play
- Cross a street/road
- Rules for pedestrians
- Usage of tri/bicycle
- Where to ride
- Usage of hand signals
- Rules for cyclists
- Rules for passengers
- Usage of seat belts
- Attitudes
- Interpretation of traffic rules
- Application of traffic signs
- Traffic environment



The above graph shows that learners in the mentioned grades are confronted mostly with “crossing a street/road”, “rules for passengers”, “usage of seat belts”, “attitudes”, “interpretation of traffic rules” and the “application of traffic signs” in the absence of their parents. Young road users are confronted least with the “rules for pedestrians”, “usage of tri/bicycle”, “where to ride”, “usage of hand signals” and “rules for cyclists” in the absence of their parents.

From this it follows that learners from Grade R-7 are both in the presence and absence of their parents exposed mostly to “usage of seat belts”, “crossing a street/road” and “attitudes”. In the presence of their parents they are exposed mostly to situations where they must take decisions about

“safe places to play”, “usage of seat belts”, “crossing of a road/street” as well as “attitudes” whereas in the absence of their parents they are exposed mostly to “rules for passengers”, “attitudes”, “usage of seat belts”, “interpretation of rules” and “application of signs”.

It is also clear that learners from Grade R-7 are both in the presence and absence of their parents exposed least to the “usage of hand signals”, “rules for cyclists” and “usage of tri/bicycle”. In the absence of their parents they are least exposed to the mentioned themes together with “rules for pedestrians” and “where to ride”.

The following table reflects schematically the above-mentioned exposure to particular traffic situations:

**Table 2: Exposure rate of road users from Grade R-7 to particular traffic situations in the presence and absence of parents**

<b>EXPOSURE RATE</b>	<b>MOSTLY</b>	<b>LEAST</b>
<b>PRESENCE OF PARENTS</b>	Safe places to play *Usage of seat belts *Crossing a road/street *Attitudes	*Usage of tri/bicycle *Usage of hand signals *Rules for cyclists
<b>ABSENCE OF PARENTS</b>	*Crossing a road/street Rules for passengers *Usage of seat belts *Attitudes Interpretation of rules Application of traffic signs	Rules for pedestrians *Usage of tri/bicycle Where to ride *Usage of hand signals *Rules for cyclists

It is thus essential to equip young road users with specific knowledge and skills regarding the “usage of seat belts”, “crossing a road/street” and “attitudes” because the frequency of exposure to these situations is relatively high.

In the following the above-mentioned situations will be compared to the level and quality of education in the current school praxis as well as at home.

## **EDUCATION**

In the literature study, which was also part of the mentioned research study, it was recommended that theoretical discovery of knowledge should where possible always be followed by practical exercises. The emphasis is continuously on practical work sessions and exercises after theoretical lessons in traffic safety education. The ideal is that young road users will acquire real traffic experience by means of practical exercises in the traffic situation. In this way the lack of real traffic experience, which increases the vulnerability of young road users in traffic participation, is restricted. The following was outcomes of research done in this field:

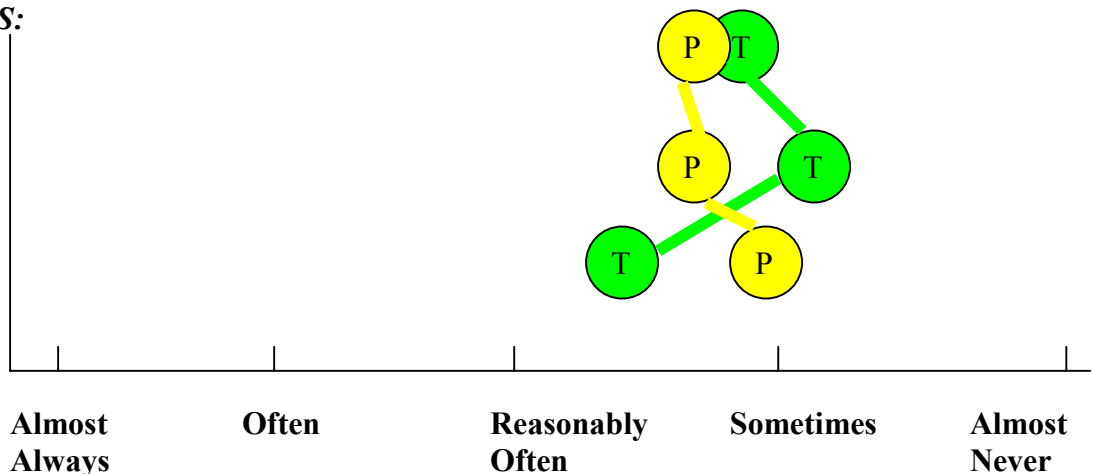
**Graph 3: Exposure of Grade R-7 learners to practical work sessions in the traffic environment**

**PRACTICALS:**

**Grade 4-7**

**Grade 1-3**

**Grade R**



**EXPOSURE RATE OF GRADE R, 1-3, 4-7 LEARNERS TO PRACTICAL WORK SESSIONS IN THE TRAFFIC ENVIRONMENT**  
*(T=Teachers, P=Parents)*

Teachers take Grade R learners "reasonably often" for practical work sessions in the real traffic situation, while parents of Grade R learners and teachers of learners in the foundation phase and intermediate phase "sometimes" take learners for practical work sessions. A predominantly negative response was therefore given in this regard, which is not in line with the findings in the literature study.

Further research has shown that Grade R learners are "reasonably often" exposed to curb drill by their teachers, while learners in the foundation phase and intermediate phase "sometimes" are exposed to curb drill and cycling skills respectively by their teachers. Primary school teachers responded predominantly negatively in this regard, compared to the "average" response of Grade R teachers. Apart from curb drill which teachers practice with learners in Grade R and the foundation phase and the cycling skills which teachers practice with learners in the intermediate phase, teachers also indicate that learners are exposed to a traffic lane, a cycling road and a miniature outlay of a town in Grade R, cycling exercises and the Junior Traffic Training Centre in the foundation phase, and to the identification of traffic signs in the intermediate phase.

In a nutshell it is worth mentioning that practical work sessions in the traffic environment seems to have a predominantly negative response.

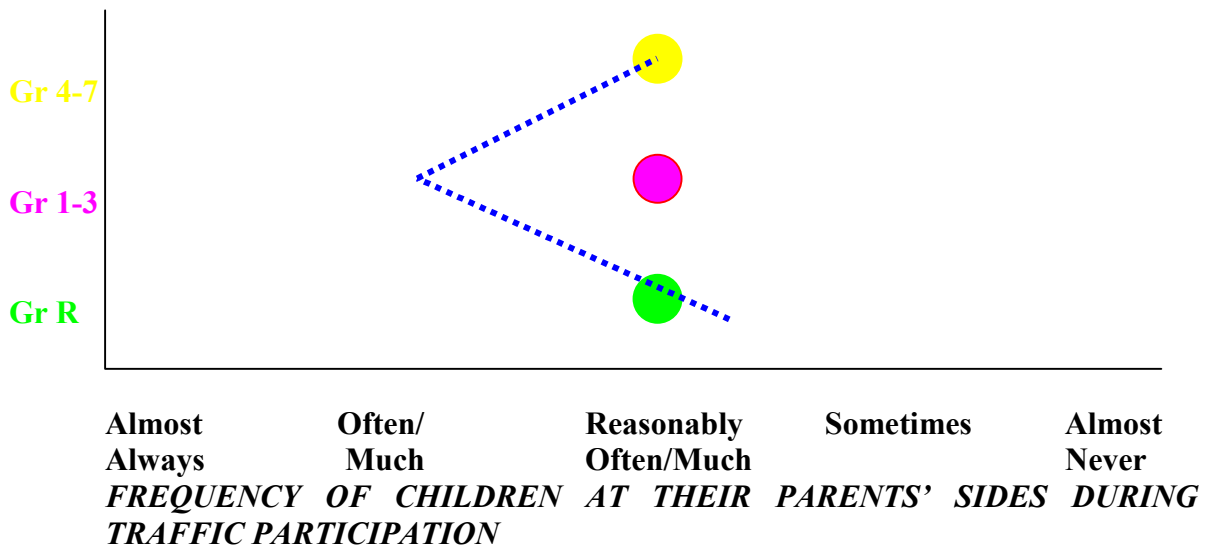
**Table 3: Frequency of road safety education by parents and teachers**

THEMES ↓	FREQUENCY OF EDUCATION TO GRADE R, 1-3, 4-7 LEARNERS (T=Teachers, P=Parents)							
	Almost always	Often		Reasonably often		Sometimes		Almost never
Safe places to play/Safe routes		PPT	PT	T				
Crossing a road or street		PPPT	TT					
Rules for pedestrians		T	PPT	PT				
Where to ride with a tri/bicycle			PT	PPPT				
Rules for cyclists			T	PPPTT				
Hand signals for cyclists					PPT	T		
Rules for passengers			T	PPPT	T			
Usage of seat belts		PPPT		T	T			
Attitudes			PPPT	T	T			
Basic traffic rules		T	PP	PTT				
Meaning of traffic signs			PPT	TT	P			

In terms of theoretical road safety education given by parents to their children a predominant positive response is shown. Grade R teachers indicate that the above-mentioned themes are "often" dealt with during traffic safety education, while teachers for the foundation phase and intermediate phase deal with the themes "reasonably often". This indicates a more favourable response rate for the teaching of certain themes in Grade R than in primary schools. In the latter case, a predominantly "average" response was given. Overall the user frequency for the given themes over the spectrum of the relevant school phases, which were involved with the research, was predominantly positive. Parents of learners in all school phases signify that they "reasonably often" practice traffic safety education with their children. A predominantly positive response was therefore given for how often parents practice traffic safety education with their children.

Themes, which parents added to the given list of traffic safety themes in the questionnaire, are related to the limitations of young road users. The following themes should be mentioned in this regard: "underestimation of the speed of vehicles", "development of observational and anticipatory ability", "visibility" and "the dangers of group behaviour during traffic participation".

**Graph 4: Frequency of children at their parents' sides during traffic participation (coloured dots according to grades) and the extent to which children learn positive traffic behaviour from the example of the parents' traffic participation (blue lines)**



Children in the pre-primary and primary school phases are "reasonably often" at their parents' sides during traffic participation. More detailed research showed a decreasing negative rate of response in this regard, i.e. the older children get, the less often they are at their parents' sides during traffic participation. This is logical information and is related to the child's development towards independence.

From the response about the extent to which children learn positive traffic behaviour from the example of the parents' traffic participation, it was found that learners in Grade R and the intermediate phase learn "reasonably much" and learners in the foundation phase learn "much" from parents' traffic participation. Learners in the foundation phase therefore learn the most positive traffic behaviour from the parents' road use, followed by road users in the intermediate phase and to lesser extent learners in Grade R. Overall it can be said that a predominantly positive response was given in this regard.

In the following the exposure of young road users will be compared to the education given to them regarding specific theme related issues from where conclusions will be drawn. For this purpose the focus will be on road users in the Grade R phase.

The exposure-education-scenario for Grade R learners is as follow:

**Table 4: Exposure rate of Grade R learners in the absence and presence of parents**

<b>EXPOSURE RATE</b>	<b>MOSTLY</b>	<b>LEAST</b>
<b>PRESENCE OF PARENTS</b>	Safe places to play Usage of seat belts Crossing a road/street Attitudes	Usage of tri/bicycle Rules for cyclists
<b>ABSENCE OF PARENTS</b>	Safe place to play Cross a street/road Rules for passengers Usage of seat belts Attitudes Interpretation of traffic rules Application of traffic signs Traffic environment	Rules for pedestrians Usage of tri/bicycle Rules for cyclists

In addition to the above-mentioned it was found that teachers take Grade R learners "reasonably often" for practical work sessions in the real traffic situation, while parents of Grade R learners "sometimes" take learners for practical work sessions. A predominantly negative response was therefore given in this regard.

**Table 5: Road safety education to Grade R learners by teachers and parents**

<b>FREQUENCY OF TRAFFIC SAFETY EDUCATION</b>	<b>PARENTS</b>	<b>TEACHERS</b>
<b>MOSTLY</b>	Safe places to play Crossing a street/road Usage of seat belts	Safe places to play Crossing a street/road Usage of seat belts Rules for pedestrians Basic traffic rules
<b>LEAST</b>	Meaning of traffic signs Rules for pedestrians Rules for cyclists Rules for passengers Basic traffic rules Where to ride	Meaning of traffic signs Rules for cyclists Rules for passengers Attitudes Where to ride

An average response was shown regarding the frequency of Grade R learners who are at their parents' sides during traffic participation. From the response about the extent to which children learn positive traffic behaviour from the example of the parents' traffic participation, it was found that learners in Grade R learn "reasonably much" from parents' traffic participation. It is clear that learners in Grade R learn lesser from the parents' road use than learners in the primary school phases.

In the light of the above the following table give an indication of common factors within the comparison between education and exposure:



**Table 6: Common factors within the education-exposure-scenario of Grade R learners**

Frequency ↓	EXPOSURE		EDUCATION	
	Presence of parents	Absence of parents	Teachers	Parents
<b>MOSTLY</b>	Safe places to play Usage of seat belts Crossing a street/road Attitudes	Safe places to play Usage of seat belts Crossing a street/road Attitudes Basic traffic rules Application of basic traffic signs	Safe places to play Usage of seat belts Crossing a street/road  Basic traffic rules  Rules for pedestrians	Safe places to play Usage of seat belts Crossing a street/road
<b>LEAST</b>	Rules for cyclists Usage of tri/bicycle	Rules for cyclists Usage of tri/bicycle  Rules for pedestrians	Rules for cyclists  Attitudes  Meaning of traffic signs Rules for passengers Where to ride	Rules for cyclists   Basic traffic rules Rules for pedestrians Meaning of traffic signs Rules for passengers Where to ride

It is thus clear that “safe places to play”, “usage of seat belts” and “crossing a street/road” are themes, which are mostly taught by teachers as well as parents. These themes also represent traffic situations to which Grade R learners are mostly exposed to in the presence and absence of their parents. The theme “rules for cyclists” is least taught by parents and teachers and Grade R learners are also least exposed to this particular situation. A strong correlation between education and exposure are thus present.

The problem lies with a theme such as “attitudes” which is least taught by teachers but Grade R learners are mostly exposed to situations where they have to deal with attitudes in the presence and absence of their parents. The same situation is found in terms of basic traffic rules to which Grade R learners are mostly exposed to in the absence of their parents and parents tend to teach them least about it. It is worth mentioning that teachers mostly teach learners about it – thus a compensation for the mentioned problem.

It is also clear that Grade R learners are mostly exposed to the application of basic traffic signs in the absence of the parents. The tragic is that neither parents nor teachers educate them regarding the meaning of traffic signs. This issue represents a contradiction between education and exposure.

From this study it was found that in order to develop an effective road safety education programme a comprehensive, in-depth research study is essential in order to do a thorough scenario analyses. It is thus recommended to firstly determine the level of exposure of young road users to specific situations in terms of their typical traffic participation patterns in order to compile and develop road

safety educational programmes, projects and products. In addition to this it must be mentioned that it is essential to educate learners regarding specific traffic safety themes, which represent selected situations to which they are usually exposed.

It was also clear in further studies that teachers in all three relevant school phases indicate that "reasonably many" lessons are devoted to traffic safety education and that traffic safety awareness days and/or weeks take place "reasonably often" in pre-primary schools and "sometimes" in primary schools. Complimentary to this, the average response of teachers and parents of learners in Grade R, the foundation and intermediate phase indicates that traffic safety education is regarded as "essential" for all children and that the ideal traffic safety education praxis should be "compulsory" for all learners. In this light it is essential for traffic safety education authorities to do a thorough situation analyses as part of a pre-study which will be a prerequisite for the development of meaningful traffic safety education programmes in order to be in line with the needs of young road users.

In a nutshell: Road safety education and exposure to specific traffic situations...correlation and/ or contradiction? In terms of the current teaching-learning situation, which includes both teachers as secondary and parents as primary educators contradictions as well as correlations between exposure rates and road safety education are often the order of the day. In terms of the ideal traffic safety education praxis it is recommended that the exposure rate of young road users to specific situations must give clear indications to selection processes in order to develop the most effective and high quality road safety education programmes.

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# **Road Safety Education and Road Safety Exposure - Contradiction and/or Correlation?**

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