

# EMPOWERMENT THROUGH ROAD SAFETY EDUCATION

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The origin of traffic problems in South Africa can be taken back to 1897 when Hess imported the first usable vehicle – a Benz - to South Africa. This was soon followed by many more especially due to the discovery of diamonds during 1867 to 1871 and gold during 1871 to 1884. From this point the social need for motorised road transport, the number of vehicles and also collisions increased. The first collision was reported in Cape Town. It was between a Darraq motor vehicle and an express train from Johannesburg. On a train crossing the Darraq was torn to pieces. The driver and two passengers of the vehicle luckily sustained only light injuries. The outcome of this was that the Cape Town Railway authorities demanded an official investigation with the result that the danger of level railway crossings was pointed out. Throughout this the importance of road safety and especially the role of road safety education went unnoticed.

Since this first collision the number of collisions has increased annually, with a related increase in deaths and injuries. During 1997 9 692 road users were killed on South African roads, 39 302 were seriously injured and 91 760 were slightly injured. In this light it is totally impossible to argue lightly regarding the seriousness of the South African road safety problem! The latest statistics reflects the high risk linked to traffic participation of young road users - in the younger age group road accidents is one of the largest single causes of deaths. In the preprimary school phase 153 young road users were killed and 1 434 were injured because of road traffic collisions during 1997. In the foundation and intermediate phase were 193 and 143 road users respectively killed which bring the total death toll in the primary school phase on 327. In the mentioned school phases 1 947 and 1 900 young children were respectively injured. Road deaths from grade 0 up to the end of the primary school phase are thus 480 in 1997. Young road users are without fear of contradiction road safety uneducated and may fall a victim to road accidents – a shocking waste of human life!

Since 1910 several authorities, organisations and institutions have been involved in attempts to reduce road safety risks on South African roads. Besides that it has already been stated in 1947 that the teaching and training of the young learner are in vain if he or she is not also equipped for safe participation in road traffic in order to survive. The mentioned alarming statistical data compel the search for a potential solution. This is yet regarding the life of human beings and the loss of it! It has further been proven that the mere promulgation of traffic regulations and their enforcement together with engineering do not solve the problem of road safety. This places increasing emphasis on the education and training of people in safe road use. Many researchers are of the same opinion that road safety education plays an indispensable role in the alleviation of collision 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 courses. It is clear that facilitators must be empowered with relevant knowledge, applicable skills and a positive attitude to such an extent that road safety education can penetrate the society as well as individual learners.

Research worldwide also indicates that it is of the utmost importance to educate a learner at an early age concerning safe road use. The forming of the correct disposition by means of education and training cannot just be left up to the family as the natural and primary educator. The school has a socio-pedagogic duty in this regard. The education authorities have the responsibility to see to it that the learning content is relevant to the needs of society. This includes road safety education and consequently it is a specific duty and responsibility of the facilitator not just to be fully informed

regarding road safety but also to continue, to affirm and to finish the parent's education. Thus an educated and responsible adult road user can be formed for the societal reality.

The following table indicates a comparison between deaths in countries where road safety education is compulsory in schools to countries where no or partly compulsory road safety education take place:

**Table 1 Accident course in a number of countries**

| <b>COUNTRY</b>                   | <b>ACCIDENT COURSE<br/>(Deaths per 100 million<br/>kilometer)</b> | <b>ROAD SAFETY<br/>EDUCATION</b> |
|----------------------------------|---|----------------------------------|
| United States of America         | 1.8   | Compulsory                       |
| Canada                           | 2.9   | Compulsory                       |
| Denmark                          | 2.6   | Compulsory                       |
| Finland                          | 2.0   | Compulsory                       |
| France                           | 4.6   | Partly compulsory                |
| Federal Republic of West Germany | 3.8   | Compulsory                       |
| Great-Britain                    | 2.1   | Compulsory                       |
| Luxembourg                       | 3.5   | Compulsory                       |
| Norway                           | 2.25  | Compulsory                       |
| Israel                           | 4.2   | Compulsory                       |
| Turkey                           | 12.0  | Not compulsory                   |
| Sierra Leone                     | 23.6  | No                               |
| South Africa                     | 16.8  | Partly compulsory                |

It is clear from the above table that in countries where road safety education is compulsory, the accident rate is relatively low and in countries where road safety education is partly compulsory or where there is no road safety education at all the accident rate is relatively high. From this it is clear that road safety education forms the focus in the accomplishment of traffic safety and is a contributing factor in the reduction of the death toll. Road safety education has thus a definite role to play and deserves a rightful place within the educational system of any country. Curriculum 2005 makes the way for the inclusion of road safety education within the learning area Life Orientation with the focus Life Skills Education in South Africa.

Road safety education in schools can however not take place without a structured curriculum. Because of the lack of such a curriculum in South Africa a comprehensive study was done during 1997 to 1999 in order to identify applicable themes and to develop a core curriculum for road safety education. The new outcomes based approach within the structure of Curriculum 2005 takes the lead in the implementation of road safety education in South African schools. As for the total spectrum of this new approach it is essential to develop a culture of teaching and learning, with the outcome of a new generation equipped with knowledge, skills and a positive attitude towards road safety. The ingredients of such a culture are stipulated in a comprehensive core curriculum for road safety education. The mentioned national road safety education curriculum includes learning content for grade 0, the foundation and intermediate school phases. The study was done by means of the following channels:

#### Curriculum studies in general

- Curriculating is indispensable in the establishing of a curriculum because this concept refers to the actions and acts whereby a curriculum is brought about. For the creation of a core

curriculum for Road safety education, "curriculating" takes place by means of certain principles, which are embodied in the elements of a curriculum.

### Road safety education in South Africa

- South Africa has a curriculum for road safety education for the primary school phase, with the exception of grade 5, for which no provision is made in the existing curriculum. However, as noted in the introductory chapter, it would appear as though this curriculum is not used in schools. The revision of the current curriculum, an investigation into its relevance and the identification of themes, which should manifest in the curriculum are therefore essential. The absence of a curriculum for road safety education for learners in grade 0 was identified as a great shortcoming, as the lifelong learning characteristic of road safety education is hampered by this absence.
- It was found that most teachers did not receive training in road safety education during the initial formal professional training or in-service training. Teachers neither received any other training of this nature. The result of this is that the majority of teachers are not trained and equipped to offer road safety education. The average response considering the training in road safety education of parents of learners in the various school phases also indicated that parents received no training of any kind for offering road safety education to their children.
- Although teachers are not trained to present road safety education teachers in all three relevant school phases indicate that "reasonably many" lessons are devoted to road safety education. It was also found that teachers responsible for grade 0, the foundation phase and intermediary phase "sometimes" use teaching media and that a traffic official was invited "reasonably often" to pre-primary schools and "sometimes" to primary schools. Together with this road safety awareness days and/or weeks take place "reasonably often" in pre-primary schools and "sometimes" in primary schools. With regard to road safety awareness days the situation in pre-primary schools appears to be more favourable than that in primary schools, where a stronger negative response regarding traffic safety awareness activities was given.
- It was found that the themes "how and where to cross a road/street" and "rules for pedestrians" showed the highest user frequency in all three school phases. Themes relating to safe cycling, namely "the use of hand signals during cycling" and "rules for cyclists" shows the lowest user frequency in all three school phases. 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". This confirms the premise that themes for the core curriculum for road safety education should be selected according to the developmental level, age, limitations and vulnerabilities of learners.
- Teachers take grade 0 learners "reasonably often" for practical work sessions in the real traffic situation, while parents of grade 0 learners and teachers of learners in the foundation phase and intermediary phase "sometimes" take learners for practical work sessions. A predominantly negative response was therefore given in this regard. Grade 0 learners "reasonably often" are exposed to curbstone drill by their teachers, while learners in the foundation phase and intermediary phase "sometimes" are exposed to curbstone drill and cycling skills respectively by their teachers. Primary school teachers responded predominantly negatively in this regard, compared to the "average" response of grade 0 teachers. Apart from curbstone drill which teachers practice with learners in grade 0 and the foundation phase and the cycling skills which teachers practice with learners in the intermediary phase, teachers also indicate that learners are exposed to a traffic lane, a cycling road and a miniature outlay of a town in grade 0, cycling exercises and the Junior Traffic Education Terrain in the foundation phase, and to curbstone drill and the identification of traffic signs in the intermediary phase. Parents of learners in all school phases signify that they "reasonably often" practice Road safety

education with their children. A predominantly positive response was therefore given for how often parents practice Road safety education with their children.

- It was found that young road users in all three the relevant school phases were exposed in the presence of their parents mostly to situations where they were confronted with "the use of safety belts" and the "crossing of a road/street". Learners in all three the school phases are exposed least to "the use of a tricycle/bicycle" and "the learning of hand signals" in the presence of their parents during traffic participation. Learners in grade 0 are confronted in the absence of their parents mostly with "safe places to play" and "the use of safety belts". Grade 0 learners are exposed least to "the use of a tricycle" and "situations where rules for bicycles must be applied" in the absence of their parents. Learners in the foundation phase and intermediary phase are exposed in the absence of their parents mostly to "the crossing of a road/street" and "situations where basic traffic rules must be applied". The same group of learners are confronted least with "situations where hand signals must be displayed during cycling" in the absence of their parents. From this it follows that grade 0 learners are both in the presence and absence of their parents exposed mostly to "the use of safety belts" and "safe places to play" and least to "the use of a tricycle" and "situations where rules for cyclists must be applied". Learners in the foundation phase and intermediary phase are confronted both in the absence and presence of their parents mostly with "the crossing of a road/street" and "the use of safety belts". Second to this, grade 0 learners and learners in the foundation phase are exposed mostly to situations where they must take decisions about "safe places to play". These three situations therefore show the highest frequency in all three relevant school phases. Learners in the foundation phase are exposed least to "situations where hand signals must be displayed during cycling", "situations where rules for cyclists must be applied" and "different destinations to which he travels by bicycle". Learners in the intermediary phase in turn are confronted least with "situations where hand signals must be displayed during cycling" and "situations where the child carries out dangerous actions and experiences the results". It appears that the total population of learners is exposed both in the absence and presence of their parents least to "the use of a tricycle/bicycle" and "the application of hand signals during cycling".
- Parents teach grade 0 learners most about "safe places to play", "the use of safety belts" and "positive attitudes towards road use" and least about "where to ride with a tricycle". It became clear in the above that the latter theme is also the situation to which grade 0 learners are exposed least both in the absence and the presence of their parents. Parents of learners in the foundation phase teach their children most about "safe places to play", "how to cross a road/street" and "the use of safety belts" and least about "rules for cyclists" and "the learning of hand signals". In this light it can be said that parents of learners in the foundation phase teach their children most about "how to cross a road/street", "safe places to play" and "the use of safety belts". Compared to this, "the learning of hand signals" and "rules for cyclists" is taught least. Learners in the foundation phase are exposed respectively the most and the least in both the absence and the presence of their parents to these situations. In the intermediary phase parents teach their children most about "how and where to cross a road/street" and "the use of safety belts". This group of learners is taught least about "rules for cyclists" and "the learning of hand signals". Themes about which parents teach their children in this phase most and to which they are exposed most in both the absence and the presence of the parents, are "the crossing of a road/street" and "the use of safety belts". A theme about which parents teach their children least, and to which children are also exposed least both in the absence and presence of parents in the relevant school phase, is "the learning of hand signals during cycling". Common themes which are taught most in all school phases and to which learners are exposed most in both the absence and presence of parents, are "the crossing of a road/street", "safe places to play" and "the use of safety belts". It was found that parents teach cycling education to their children least with specific reference to "the use of a tricycle" in grade 0 and "the learning of

hand signals" in the primary school. Apart from this, respondents also indicated that learners in all school phases are exposed least to these themes both in the absence and presence of their parents.

- The average opinion of parents and teachers of learners in all three relevant school phases is that they have "reasonably much" knowledge of the possible limitations experienced by young road users in traffic situations. This indicates a predominantly "average" rate of response. (As a measure of control for the above finding, questionnaires made provision for respondents to mention at most two alternative limitations of road users in grade 0, the foundation phase and intermediary phase. Fewer than a third of teachers and parents of learners in the relevant school phases reacted to this, the exception being parents of grade 0 learners, of whom 44,83% responded.) The conclusion is that only a minimum number of respondents on the one hand understand the concept "limitation" and on the other hand show insight in the limitations of young road users during traffic participation. It should, however, be mentioned that respondents who did respond to this, offered sensible reactions. Parents of learners in all school phases agree that they can describe as "reasonably adequate" their knowledge about limitations, which make children vulnerable in the traffic situation.
- All teachers and parents of learners in grade 0, the foundation phase and intermediary phase are of the opinion that parents and the school are "definitely" responsible for Road safety education. Teachers for grade 0 and the foundation phase as well as parents of learners in the foundation phase are of the opinion that traffic safety authorities "definitely" are responsible for Road safety education, while teachers and parents of learners in the intermediary phase and parents of learners in grade 0 are of the opinion that traffic safety authorities are responsible for Road safety education only "to an extent". Teachers for the foundation phase responded that traffic officials are "definitely" responsible for Road safety education, but other teachers and parents are of the opinion that traffic officials are responsible for it "to an extent". Teachers and parents of grade 0 learners are of the opinion that the church is "not at all" responsible for Road safety education, while teachers and parents of learners in primary schools are of the opinion that the church is responsible for Road safety education "to an extent".
- The average response of teachers and parents of learners in grade 0, the foundation phase and intermediary phase indicates that Road safety education is regarded as "essential" for all children. Teachers of learners in the intermediary phase respond that the current Road safety education practice is "totally inadequate". All other teachers and parents describe the current practice in schools as "reasonably adequate", which indicates a predominantly average response, compared to the former negative response. All respondents (i.e. teachers and parents of learners in grade 0, the foundation phase and intermediary phase) agree that the ideal Road safety education practice should be "compulsory" for all learners. What is striking about the general remarks and comments, which respondents could make, is the plea for Road safety education to be incorporated in the school curriculum and to be compulsory for all learners in all school phases. Based on this, it may be said that the importance and necessity of Road safety education is generally recognised.

#### Analyses of the target group

This study attempts to develop a core curriculum for Road safety education for learners in the pre-primary and primary school phases. For this reason a distinction was made between learners in the age group five to six years (i.e. the grade 0 learners) and learners in the primary school phase, between the ages of six and twelve. The latter phase in turn is divided in the foundation and intermediary school phases. In the light of this distinction, findings about the common limitations and characteristics of the target group may be stated as follows:

- It was found that learners from age five, in other words the total spectrum of road users for whom the core curriculum is intended, are susceptible to Road safety education and can be

equipped and protected by means of training and supervision. Reasons for this finding are, for example, the fact that this group of learners can to a large extent accept responsibility and act independently. According to this the limitations experienced by road users younger than five cannot be ascribed to a lack of Road safety education.

- Some of the limitations experienced by grade 0 learners in traffic participation, are as follows:
  - Children under the age of six usually are not able to deal with basic traffic actions such as successfully crossing a street/road.
  - Impulsiveness, increased vitality, curiosity, fickleness, willfulness and unpredictability.
  - The height of the child which on the one hand makes it difficult to spot him/her in the traffic situation and which on the other hand limits his/her vision, especially where he/she attempts to cross a street between parked vehicles.
  - Dangerous experimenting with concepts such as speed, power, quantity, time, space.
  - A lack of relevant traffic experience and an inability to relate previous traffic experience with future actions.
  - Visual blindness and limited peripheral vision.
  - Limited sensitivity for sounds, particularly with boys.
  - Localising sound.
  - Poor memory, illogical reasoning ability, inability to think abstractly and poor decision making skills.
  - Memorising rules without true insight.
  - Poor hand dominance.
  - Ego-centeredness and self-centeredness.
  - Rushing out as a result of limited social skills.

The following are findings about the limitations which make the learner in the primary school phase vulnerable in traffic situations and which therefore should be included in the core curriculum for Road safety education:

- Impulsiveness, especially in the foundation phase.
- The danger of irresponsibly reacting to emotional experiences in the traffic situation.
- Ego-centeredness up to eight and/or nine years.
- Poor social skills and communication ability, which are particularly undermined by ego-centeredness.
- Confusion regarding long distance vision and vision over shorter distances in learners in the foundation phase.
- Localising sound up to age eight.
- Short span of attention and insufficient ability to concentrate, particularly in learners in the foundation phase.
- Limited ability to properly interpret road signs.
- Rigid application of traffic rules without showing true insight.
- Experimenting with increased power, vitality and self-
- The following are some of the themes resulting from the analysis of the developmental characteristics and limitations of the target group which should be addressed in the core curriculum for Road safety education:
  - The danger of impulsiveness and thoughtless reaction to internal stimuli, particularly with learners in grade 0 and the foundation phase.
  - The danger of rushing out.
  - Grade 0 learners are characterised by ego-centeredness, curiosity, fickleness, impulsiveness, unpredictability and increased vitality.
  - The development of the senses, especially the visual sense up to ages six to eight, and the auditory sense up to age twelve.

- Sensitivity for sounds, particularly with boys.
- Identification, selection and localising sound up to age eight.
- Peripheral vision, especially among learners in grade 0 and the foundation phase.
- Limited understanding and estimation of concepts like time, speed, distance, space, power, size and energy in learners in all school phases that were involved in this study.
- Limited anticipatory ability, resulting in unpredictable, unsafe behaviour up to the end of the concrete operational phase (age eleven).
- Concepts such as big-small, near-far, high-low, in front-behind, fast-slow, right-left, up-down, above-below, in-out and forward-backward.
- The limitation experienced in particular by grade 0 learners and learners in the foundation phase because of their size, height and body proportions during traffic participation. This limitation is related to concepts like "see and be seen".
- Cognitive uncertainties because of the transition between cognitive stages.
- Concrete and rigid thoughts based on sensory experiences.

#### The place of road safety education within Curriculum 2005

- The analyses of the place and role of road safety education in the learning area of life-orientation within the spectrum of Curriculum 2005. The intra-integral character of outcomes based education makes provision for the integration of road safety education in all learning programmes. Outcomes based education and its characteristic of lifelong learning are aimed at, among others, the shaping of high quality citizens. Road safety education exhibits the characteristics of lifelong learning, of which the envisaged result is a mature civilization, traffic maturity and accident-free traffic participation. This implies that road safety education should be given a rightful place in Curriculum 2005.

#### Analyses of road safety education curricula of 14 countries in Southern Africa and overseas

- In Belgium, Austria, Denmark, Spain, France, Israel, New Zealand and Japan road safety education takes place along the lines of an official curriculum. However, countries such as the United Kingdom, Germany and the Netherlands do not have an official curriculum for road safety education. In these cases road safety education takes place by means of an unofficial curriculum. Road safety education along the lines of an official curriculum appears to be the ideal situation - this premise necessitates the present study.
- In most countries the presentation of Road safety education takes up ten to forty lesson hours during the primary school phase. On the one hand Road safety education is offered as an independent learning programme in these lessons. On the other hand it is integrated in a variety of learning programmes. Because of the obstacles posed to Road safety education by the current uncertainty about the implementing of Curriculum 2005, it is recommended that Road safety education should be integrated with all the existing learning programmes in South African schools.
- Themes appearing in curricula have a progressive character. The same themes are taught at different school phases, but on different cognitive levels and in different degrees of detail. Themes are selected on the basis of the target group's level of development and according to their limitations, age and road user role(s). It was found that themes that were identified along these lines, addressed the most essential aspects of traffic safety.
- Curricula of almost all fourteen countries which were studied, commonly indicate three basic themes, namely the three relevant road user roles which are occupied during the pre-primary and primary school phases: pedestrian, cyclist and passenger.
- Common themes occurring in the curricula of most countries were listed above. These themes will be combined with themes that were prioritised in questionnaires by respondents. Prioritising is based on the exposure of the young road user to certain traffic situations and

according to the extent of education in the dealing with such situations. The proposed learning content and the outcome thereof for Road safety education for learners in grade 0, the foundation phase and intermediary school phase, will serve as recommendation.

- A system of so-called "contact teachers" is in place in countries such as Belgium, Denmark and Estonia. The Netherlands have a network of "traffic parents" with the same purpose and function as the former. In this way teachers and parents are directly involved with Road safety education and other teachers and parents are inevitably also involved and advised. This network proves to be effective in the promotion of Road safety education. South Africa has no similar system.
- Apart from the system mentioned above, young road users also receive invaluable Road safety education at "Children's Traffic Clubs" in countries like the United Kingdom, Zimbabwe, Austria, Spain and Japan. These educating programmes complement the Road safety education that is offered to learners in schools. Children's Traffic Clubs do not only involve young road users, but parents are also made aware of traffic safety and of Road safety education.
- In most countries the presentation of cycling education and training takes place from age nine. It is clear that cycling education (which is of a more theoretical nature) should precede cycling training, which involves practical work sessions in cycling skills.
- The emphasis is continuously on practical work sessions and exercises after theoretical lessons in Road 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.

Although the development of a core road safety education curriculum is not a short-term solution, the value of this curriculum, which is based on long-term education and a life-long learning process, cannot be denied. The implementation of this core curriculum in South African pre-primary and primary schools can doubtlessly contribute to reduce accidents, deaths and injuries.

This paper is thus an attempt to call on all educators to empower a new generation of road users so that they will be traffic-safety educated, in an attempt not only to effect a reduction in accidents, with their accompanying pain and suffering, but also to promote neighbourly love to the welfare of fellow road users and to the glorification of the Creator of our beautiful country, South Africa!

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# **EMPOWERMENT THROUGH TRAFFIC SAFETY EDUCATION**

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