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EDUCATION IN TRAFFIC SAFETY<sup>1</sup>

INDEXED

Автомобили - дорожные  
Автомобили - дорожные - РКУ

Introduction

As a result of the discussions of the Technical Advisory Committee for the programme on the prevention of road traffic accidents, a list of programme activities for the period 1978-1983 was prepared in 1977. These activities include a Study on Education in Traffic Safety, conducted with a view to identifying and analysing the situation in several European countries, and, on the basis of their experience, making recommendations for new educational approaches in the field of traffic safety.

Background

Education is considered to be one of the major measures which could be used in promoting traffic safety, either for *primary prevention*, in order to eliminate or decrease the risk of the injury-producing accident or only the material effect, or for *secondary prevention*, in order to make the public aware of, and willing to use, safety devices which prevent injury or reduce its severity.

As with every preventive measure, and from the standpoint of a systems approach, education cannot be considered as an isolated measure, but should be seen in the context of other countermeasures and of the contributions by other disciplines to education, combining epidemiological, biological, physiological, medical, psychological, sociological and cultural aspects with those of the physical environment. This implies that knowledge, attitudes and behaviour have to be integrated with ecological aspects in planning holistic strategies for prevention.

As a basis for defining more efficient strategies for road traffic accident prevention and, in particular, for improving traffic safety education as one of the main tools in the context of such strategies, it would be useful:

- (a) to review approaches currently used in various countries for traffic safety education, in particular:
  - the role of educational measures within the global strategies for traffic safety;
  - the general philosophies or concepts forming the basis of education and its aims and objectives;
  - study of the methods used;
  - organizational patterns of traffic safety education and institutional settings;
  - legislative basis;
  - the role of health education in traffic safety education; and
- (b) to analyse the problems as identified in (a) and to evaluate tentatively the effectiveness of the various educational approaches in terms of accident rates in the countries as well as on the basis of existing fundamental theories and empirical studies concerning learning principles and education in relation to behaviour.

<sup>1</sup> Summary of the essential findings of a study carried out by Professor W. Böcher, Institute of Traffic Education of the University of Essen.

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### Results of the Study

1. The increasing frequency of road traffic accidents and the relative seriousness of the consequences are the main reasons why traffic safety education has been made a priority task in almost all countries.
2. Road traffic accidents which result in recognizable damage have been registered and statistically evaluated in practically all countries for a relatively long time. The methods of statistical recording, however, vary from country to country, and this renders any attempt at international comparison difficult. It would be fallacious to assume that all accident events become known to the authorities (e.g., only 66% of injuries resulting from road traffic accidents and treated in hospitals in Rotterdam were known to the police authorities; for accidents involving children in Copenhagen, the corresponding figure was as low as 25%).
3. Statistical results are often meaningless unless they relate to defined reference indices. The latter vary from country to country and are either: total population (or 100 000 inhabitants), number of people actively participating in road traffic, number of motor vehicles, number of people holding a driver's licence, petrol consumption, GNP, length of the road network, traffic density, etc.
4. In general, it may be stated that:
  - the relative mortality from road traffic accidents is significantly higher in highly industrialized countries than in less industrialized countries (this, however, is not a statement on absolute accident figures);
  - the general trend of traffic accidents is different for different age groups (e.g., a general decrease in the age group 1-4 years);
  - relatively, the highest rate of accidents (30%) occurs within the age group 15-24 years (=15% of the total population in Europe);
  - there is generally a more unfavourable trend towards involvement in road traffic accidents in the age group 60 years and over, as compared with the age group 21-59 years;
  - male traffic participants exhibit a higher accident rate than female traffic participants;
  - traffic accidents are relatively frequent during the period in which a traffic participant first "joins" a certain type of traffic (relative peak of accident frequency among "child" pedestrians, cyclists, moped users, drivers of motorcycles, drivers of motor cars);
  - there is a correlation (not necessarily linear) between the traffic accident trend and the general development of traffic, especially the rapidity of expansion of motorization;
  - a comprehensive analysis of available data does not reveal a correlation of traffic mortality and traffic injury rates between countries, e.g., the percentage of traffic mortality is higher in the industrialized countries of Europe than it is in the USA.

Despite these recognizable trends as listed there is still a lack of concise, comprehensive and detailed understanding of the accident situation. The present study brought no improvement in this respect. Characteristically, it confirmed that:

- the statistical basis is not uniform in the different countries; this also applies to various situations in a given country;
- there is no uniform trend of traffic accidents to be recognized in Europe, probably because of the desynchronized development of motorization in the various countries;
- also in regard to different age groups there is no uniform trend of traffic accidents in the different countries;
- there is no uniform trend over the years; rather, there are variations, both positive and negative, for individual years and countries; this applies equally to fatal accidents and accidents resulting in injuries.

As a result, a scientific international comparison is neither possible nor justified. The observed trend in road traffic accidents is explained differently by different countries, and no systematic form of interpretation can be recognized. This would seem to confirm that both accident

frequency and accident seriousness depend on a great number of variables, some of which do not appear to be well known or to have been properly recognized. It is therefore difficult to arrive at an unbiased evaluation of the results of relevant action programmes; similarly, it is difficult to design a rational traffic safety education programme that would be universally applicable. Also, an analysis of the relevant published literature does not lead to any conclusive results in these respects.

5. In general, it can be stated that our modern age is characterized by rapid technological changes, including an enormous expansion of traffic and transportation, especially road traffic. Concurrently, there is an increase in traffic hazards, and this in turn has led in practically all countries to increased efforts to either decrease these hazards and their consequences or to prevent their occurrence. Traffic safety education programmes are one of the means to this end.

6. Traffic development has been different in different European countries as regards time of onset, type of traffic, intensity, and so on. Consequently, traffic safety education shows differences from country to country as regards conception, content and priorities. This also reflects differences in socioeconomic and general living conditions, economic potentials and cultural values. Despite these differences, a general trend seems to be noticeable, which takes the form of moving away from mere teaching and training in traffic regulations towards more comprehensive conceptions of traffic safety education, taking into consideration the overall behavioural conditions of people in the context of their specific environment.

7. Traffic safety education as understood in the European setting is but one component of the general traffic safety effort and forms part of the overall education process of people in a society; in particular, it forms part of the process of social education.

8. Regarding the approaches chosen in different countries of the European Region, the following may be distinguished:

- a more restricted policy, the main aim of which is accident prevention, and a more comprehensive policy which also aims at forming, or changing, attitudes and social behaviour;
- narrower and wider definitions of the overall concepts of traffic education measures.

In the majority of cases, traffic education is interpreted as "any measure conducive to influencing people as traffic participants in a positive way". The objective of traffic education is seen both as a means to ensure adequate protection and as a means to develop increased individual competence. Education, engineering and enforcement as the classical means of approach to traffic safety should be seen as interactive components of an integrated concept, and all three should be pursued in a well balanced manner. Technical measures and legislative provisions are considered as necessary complements to educational approaches. A particularly favourable effect is expected from technical measures, as these would almost automatically be conducive to stimulating the desired behaviour.

9. The basic theoretical conception of traffic education differs in the various countries of Europe; this is explained by the general state of traffic development, the intensity of motorization and the density of traffic, and partly also historically.

10. Regarding the relation between traffic education and health education, there seems to be a consensus to consider both as separate fields with similar problems and methods. A comprehensive approach, bringing together health and traffic education efforts, is considered advantageous by the majority of those who replied to the questionnaire.

11. For traffic education to be successful, it is generally recognized that a number of basic principles have to be observed. These are:

- the necessity of a systems or multifactorial approach, taking into consideration ecological, sociological, psychological, and pedagogical aspects;
- the integration of efforts and functions of safety education, as opposed to fragmented sectoral activities;
- the principle of activation;
- the principle of motivation, with emphasis on positive motivation;
- education programmes must be reality-oriented and problem-oriented;
- environmental aspects must be included.

12. Regarding methodology, it is agreed that a more comprehensive approach is needed than has been adopted in the past. Mere lecturing and theoretical learning are not sufficient and should be complemented by learning on the basis of models, learning under "laboratory" conditions, and learning in actual traffic situations. Further, the learning process should be well phased and correspond to the respective state of cognition, knowledge and experience.
13. Regarding the use of mass media for purposes of traffic safety education, knowledge is scanty, both as regards the optimal type of medium to be used and as regards the optimal mode of utilization of the different media. This is due to the lack of objective evaluation of individual campaigns. Evaluation of individual campaigns is always difficult as the campaigns themselves are usually part and parcel of more comprehensive action programmes. In any case, it would be useful if the public media would place more emphasis on what may be called "pedagogical reporting", e.g., using the opportunity of reporting on certain events to give positive recommendations on correct behaviour and reaction in the particular situation and showing how the negative consequences of the event in question could have been avoided.
14. Parents and teachers are mentioned as the main mediator groups in traffic education for children. Parents usually accept primary responsibility for traffic education of their children, but are frequently uncertain as to the methodology and approaches to be used. Among teachers there is a notable discrepancy between the decidedly positive opinion as to the need for traffic safety education in the school and the relatively poor response in practice regarding the actual implementation of traffic teaching programmes.
15. Regarding traffic education activities by the health services, the present situation is unsatisfactory in most countries. Hitherto, the contribution by the health and in particular the medical services has been concentrated in the first instance on the organization of first-aid and emergency services and on problems such as driving under the influence of alcohol and drugs. Other concerns have been problems of safety, e.g., the use of safety belts, the placing of small children on the back seat of the car, etc. Among the preventive measures to be mentioned are medical examinations prior to the granting of a driving licence. In future, health services should participate actively in the teaching aspects of traffic safety education, e.g., in the context of the school health team, and engage more intensely in traffic safety.
16. Existing community services, organizations and institutions as well as interested lay personnel should be more fully deployed in traffic safety education. Most countries have established central institutions for traffic safety. The designations, functions and responsibilities of these vary from country to country. These institutions may have a public, private, or mixed status. Frequently several institutions or bodies coexist in one and the same country; their respective objectives, competences and priorities vary. Better coordination at the central level of these various bodies and institutions and of the various traffic safety activities in a given country are matters of urgent priority.
17. In recent years the need for systematic evaluation of individual measures and action programmes has been increasingly recognized. Such evaluation should be made an integral part of all relevant programmes. However, in view of the complexity of traffic situations and educational processes there should be no excessive optimism regarding the possibilities in this respect, especially as there is a distinct lack of objective criteria upon which such evaluation could be based.
18. There is general agreement that traffic safety education should concentrate in the first instance on specific target groups, especially those at high risk. The following are most frequently mentioned: children (of both pre-school and school age), cyclists, young moped users, inexperienced beginner drivers, professional drivers, handicapped and disabled persons, and the elderly. Apart from verbal instruction (teaching) regarding traffic regulations, etc., traffic education should have as one of its main aims the promotion and encouragement of a sense of partnership among all road users. Traffic safety education thus becomes an important instrument of overall social education.
19. Traffic safety education for children must be adapted to their physical and mental or intellectual capabilities and the social and family conditions in which they live and grow up; it must also be directed towards influencing the attitudes and behaviour of other road users with regard to children on the road and towards creating environmental conditions conducive to traffic safety. Such education for children should be "idol-oriented" rather than concentrating on instruction. It should begin at pre-school age (with parents, kindergarten staff, members of children's clubs, etc., as the main mediators) and continue throughout school life. Regular, systematic and continuous traffic safety education at school is generally being postulated and has been so for a long time. It should be an integral part of the overall educational process of children. Apart from teaching basic principles and rules of safety, a main aim of traffic safety education for children should be seen in arousing safety consciousness and in positively influencing attitudes and behaviour.

20. While traffic safety education seems to be a fairly well established practice at primary school level, least progress is being achieved at secondary school level, mainly because of the lack of relevant training of school teaching staff. In the majority of cases traffic education is not a compulsory subject of its own within the general teaching programmes, but rather it is taught sporadically and often only touched upon when the occasion arises in the context of other teaching subjects. Practical exercises in real traffic situations are the exception rather than the rule. At least one teacher at each school should have undergone specialized training in traffic safety education and be made responsible for coordinating all the traffic safety activities of that school.

21. Specific practical traffic safety measures in schools are: bicycle training, the introduction of a school crossing service, identification of safest routes to and from school, organization of school transport systems, driver education courses, etc.

22. Young beginner-drivers (up to the age of about 25) are the group of road users most at risk and showing the highest accident rate. Two main factors are responsible for this: lack of experience and a definite tendency to risk exposure at this age. Safety education here should be directed mainly at influencing behaviour, possibly through the aid of peer-groups, group discussions, selected practical exercises, mental training, etc.

23. Another specific risk group are young moped users and motorcyclists. While generally a special driving licence is required for driving motorcycles (and is also being postulated for the use of mopeds), traffic safety education measures are usually and primarily left to, or expected from, the schools and/or private organizations. Safety education should not only be confined to teaching the theory and practice of driving, but should be comprehensive and include such aspects as influencing behaviour and attitudes through motivation of the target group.

24. Traffic education of car drivers increasingly includes - over and above the compulsory instruction on traffic regulations and driving practice - measures of "safety training". Specific programmes are directed towards influencing attitudes and behaviour in terms of developing a sense of partnership and care for other road users, increasing the awareness of risk, improving the possibility of risk assessment, and reducing the incidence of hazardous driving. Methodologically, this could be achieved through discussions, attitude-forming exercises and practical training to promote a sense of partnership and considerateness.

25. The earlier theory which implies the existence of certain groups of "risk drivers" who show an inherent disregard for traffic safety is no longer maintained today. Rather, it has been recognized that certain attitudes and types of behaviour in road traffic are greatly influenced by the conditions of the social environment of the individual and by the general conditions of society. This has clear implications for the future orientation of traffic safety education.

26. The handicapped and disabled are a group whose safety in traffic should be a matter of particular concern. The basic problem here is that, while this group of road users is particularly vulnerable to traffic hazards, its total exclusion from active participation in traffic would increase the risk of social isolation. Traffic education for this group should thus aim at promoting increased independence, self-reliance and maximum rehabilitation. At the same time, specific traffic education measures for this group should be supplemented by suitable measures for planning and shaping the environment in accordance with the specific requirements of this group.

27. One specific target group of traffic safety education are migrant workers and their children, but no specific traffic safety education programmes seem to exist for them.

28. The elderly are another group of road users who are specifically at risk. In order to plan traffic education for them intelligently it is necessary to know their habits, attitudes, capabilities and interests. The importance of the functional age (as opposed to the calendar age) and the interrelations between the process of aging and experience have to be taken into consideration. Many of the aspects mentioned have been investigated in recent studies and are becoming progressively better understood. One main aim of traffic education for this group should be to reduce inherent anxieties, apprehensiveness, unsureness and feelings of insecurity in traffic. A number of European countries have specific traffic education programmes of different types for the elderly, including the dissemination of information through the mass media and the organization of group discussions.

29. There is very little, if any, exchange of information between the countries of the European Region regarding the results of studies and investigations in the field of road traffic safety education, and the experience with various approaches in one country is hardly known in another. It would be helpful and advisable to establish an international documentation centre whose main function would be the collection and dissemination of relevant information, research results and experience gained by the various countries in their respective action programmes.

30. Equally, there would be a need for targeted international comparative studies on various problems of traffic safety education, and this may well require the setting up, or appointing, of an international coordinating institution.