

PREVENTING CHILDREN'S INVOLVEMENT IN AUTOMOBILE ACCIDENTS: FORMS OF TRAFFIC-SAFETY EDUCATION IN SELECTED EU COUNTRIES (PART 2)

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Abstract: *The involvement of children and adolescents in traffic accidents on our heavily traveled streets and roads is a serious public-health problem. That involvement is usually traceable to the failure of one or more of the participants in a given traffic situation to apply, or even to possess, either the information, the judgment, or the motor skills which are necessary to ensure an individual's safety in traffic and the safety of those around him. Many European countries have developed systems of traffic-safety education to inculcate the necessary information, judgment, and skills in their young people. Those systems are generally well-thought-through and well administered. The goal of the present study is to survey the traffic-safety educational systems of selected EU countries, to compare and contrast them, and to assess which of their features it would be wise to adopt in the creation of a system of traffic-safety education adapted to specifically Czech needs.*

The first part of the study (Stojan, M., "Preventing children's involvement in automobile accidents, forms of traffic-safety education in selected EU countries," part 1, in School and Health in the 21st Century, monographic collection of research intentions MSM0021622421. Brno: Masaryk University, 2006) sets out the survey results in the following areas:

- Traffic-safety as a required or elective subject.*
- Topics covered in traffic-safety programs.*
- Training of traffic-safety teachers.*
- The funding of traffic-safety programs.*
- Taking account of students' ages and developmental levels in the design of traffic-safety programs.*
- Traffic-safety teaching approaches and methods; the integration of traffic-safety programs with the broader school curriculum.*
- The time budget for traffic-safety instruction.*
- Goals, content, forms, and methods of traffic-safety education.*

The second part of the study sets out the problems that attend the implementation of traffic-safety programs in schools; describes the media and materials that have been found useful in traffic-safety instruction, [material omitted]; describes methods for evaluating the effectiveness of traffic-safety programs in schools [. . .]; and discusses how traffic-safety curriculums and experience can be disseminated and exchanged internationally.

Key words: *traffic-safety education, media and technologies for traffic-safety education, publishers of didactic aids and resources for traffic-safety education, the financing and distribution of aids, evaluation of systems of traffic-safety education and their respective analyses, transfer and exchange of traffic-safety curriculums.*

Present state of the problem

A country's entire population has an important stake in promoting traffic-safety education as a means of reducing children's involvement in traffic accidents. Traffic-safety education should begin at an early age and in the schools. Its thrust should be twofold: to create understanding of traffic behavior from the simple to the complex, and to instill habits of safe conduct in real-life traffic situations.

All countries that have instituted traffic-safety programs have done so in conformity with each country's individual culture and needs. It is possible, however, by a careful analysis of the programs of a number of countries, to derive a set of features that are common to all or most, that are of demonstrated effectiveness, and that recommend themselves for incorporation into the model best suited to one's own country,

For this study, data on the traffic-safety programs of twelve European countries provided the framework of research and analysis. These data were collected in conformity with research protocol MSM0021622421.

Our basic findings are that:

- a) From a child's earliest age, parents play a key role in any program intended to reduce children's involvement in automobile accidents. They can and should indoctrinate to their children safety behavior in traffic, respecting traffic regulations and overall correct traffic behavior.
- b) Traffic-safety education should begin at the pre-school level, where children can be taught the basic principles of how to conduct themselves safely outside of the home.
- c) Children ages six to nine progress through a graded program that focuses on traffic rules and on practical instruction in how to observe those rules on the street. Such instruction takes place both in the classroom and outside in real-life traffic situations. It makes use of role-playing, game activities inside and outside class, the use of computerized traffic simulations, etc.

- d) In upper primary-school classes, the material from the lower grades is broadened and deepened. Relevant material from other subject areas--physics, math, biology, physical education--is brought to bear on traffic-safety issues. Connections are also made to literature, geography, and civics.
- e) Learning traffic safety is a whole-life process. In middle school, traffic-safety education is further deepened. It seeks to develop in students the idea of the individual as a partner in traffic, and so prepare the ground he will enter to become a driver. Within the framework of traffic education in higher classes, it's not possible to offer better quality driving courses.
- f) Special attention should be given to auto schools, for example, how successfully they capitalize on the knowledge and skills their customers will have acquired in their primary and middle schooling and what kind of training their instructors have received.
- g) At all levels, the effectiveness of a traffic-safety program hinges on the quality of its teachers. Training in traffic-safety education should be incorporated into the curriculum of the pedagogical faculty for primary- and middle-school teachers-to-be. Links with other fields such as psychology should be encouraged. Similarly, thorough traffic-safety training should be required of all those whose work entails any kind of traffic-safety or traffic-management responsibility, e.g., teachers and examiners at auto schools, traffic policemen, civil servants involved with traffic management.

The goal of part 2 of the research study

The goal of this part of the research study for the project MSM0021622421, "School and health in the 21st century," is to map the programs of traffic education at schools and other educational institutions in selected EU countries with respect to the following:

- Identification of the main problems in implementing traffic-safety education in schools.
- Instructional media and teaching materials for traffic-safety education.
- Financial aids
- The people that provide resources
- Evaluating the effectiveness of traffic-safety programs in schools.
- Innovation in the traffic-safety curriculum.
- International transfer and sharing of traffic-safety educational experience and curriculums; regional adaptation of such material.

The research conditions

- The need for a structured system of institutional traffic-safety education is indisputable.
- For traffic-safety education to be effective in schools of all types and levels and at other institutions, the thorough preparation of teachers is essential. Such preparation is best undertaken at pedagogical faculties.

- Safe conduct in traffic is, like other norms of desirable behavior, teachable and should be part of a child's education beginning no later than the first grade of primary school.
- A professional instructional and administrative staff is the best guarantee of success in teaching traffic safety to young people.
- It is important that those involved in teaching traffic safety be provided with the all the necessary instructional material and aids.
- Traffic-safety programs should be periodically evaluated for effectiveness, including the effectiveness with which they have been incorporated into the broader school curriculum.
- Improvements in traffic-safety education should be disseminated and exchanged internationally and, where needed, adapted to local conditions.

Characteristics of the research set and the method of research

The countries chosen for the survey had to meet two basic criteria:

- Be on the same level of traffic development as the Czech Republic;
- Be able to make available the full range of information and data required for the study.

The body of information and data from each country was subjected to a uniform analysis and evaluation. Measures of a material, technological, evaluative, and administrative character were applied:

- The frequency of use of various types of traffic-safety teaching material.
- Leading authors of such material.
- Leading editors and sponsors of such material.
- Teaching aids offered free to traffic-safety teachers.
- The chief obstacles to implementing traffic-safety programs in schools.
- Intervals of periodic assesment and innovation in the traffic-safety curriculum.
- The posture to this periodic assesment
- International transfer and exchange of traffic-safety educational material.

The basic research methods used are comparative analysis and statistical rating

The research results

Our survey is based on traffic-safety educational data from the following countries: Belgium, Denmark, Finland, France, Italy, Germany (Bavaria), Netherlands, Austria, Spain, Sweden, Switzerland, Great Britain.

Data were classified into one of the following categories:

1. Media and other resources and aids used in traffic-safety instruction.

Macrodiapositives, videos, computer simulations, didactic games, textbooks, and workbook all figured importantly in our sampling of teaching aids. Not surprisingly, for the 11 to 15 age group, the most popular and effective traffic-safety teaching aid is video

programs. They ranked first in popularity in 83.3 percent of the countries surveyed. It is easy to see why, for demonstrating and explaining common traffic situations, they recommend themselves so readily to a generation for which the image has eclipsed the printed word as a source of information.

Instructional games and computer simulations ranked second in overall popularity. The use of computer software for traffic-safety education has increased with the expansion of the range of material available, with the growing technological comfort level of the intended audience, and with the expanding provision of the necessary hardware at schools.

It is worth noting that in five countries (41.6 percent of the sample) the most popular traffic-safety teaching aids are the traditional ones: textbooks and brochures.

For youths aged 15 to 18, video is the favored instructional medium in eight out of the twelve surveyed countries (66.6 percent). It is especially popular among this age group in France, Austria, and Spain. In Germany and Sweden (16.6 percent of the sample), macrodiapositives are also popular, probably because of their excellent processing of files and the algorithmic structure of their graphics and texts. In these same countries, instructional games keyed to various aid bases are also popular. Occasionally seen are journalistic traffic-safety campaigns, as also the student research project carried out in the locality of the school. Spain and Great Britain (16,6%) present textbooks, workbooks and brochures on the first place. In the spectrum of media, nonmaterial resources such as student research projects in the locality of the school (Denmark) or a specific journalistic campaign(Spain) turn up sporadically.

2. Subjects outlining and bringing out didactic material for traffic education

The listing of the subjects, providing or participating in the outlining and publishing of didactic materials for traffic education in individual inquired countries, is various and contains a few types of office, associations caring for or overseeing traffic safety, different kinds of insurance companies, autoclubs, specialized publishers, private companies and honored professionals and authorities.

For the age group 11–15 years, that is the higher level of primary school, the didactic aids are, in the biggest number of 7 countries (58,3 %), outlined by the offices (DSCR, Ministry of interior, Ministry of education). The category of insurance companies appears in the report from 6 countries (50 %), local authorities from 5 countries (41,6 %). In both cases the rating of these subjects is very unbalanced. France is rated the best, Germany and Great Britain the worst. In other countries the rating of publishing meaning of these subjects is better than average. Associations for traffic safety are shown as the most common and with the best rating: The highest or very positive coefficient of ranking expressing the priority meaning in the overall publishing potencial was reached in 9 countries (75 %) and in 6 cases (50 %) they were represented by private associations- in Denmark, France, Italy, Germany, Netherlands and Austria, and in 3 cases (25 %) public associations- Belgium, Spain and Sweden. Autoclubs in four countries (33,3 %) with very good ranking are getting involved in publishing didactic materials for this age group. For the age group 15–18, that is, for the children of middle schools, private and public associations for the safety on roads are ranked first place in eight countries

(66,6 %) in the importance of the whole production system. From these eight countries, five are private (41,6 %) and three are public (25 %). Though in 6 countries (50 %) also insurance companies and local authorities co-operate on the concept of didactic aids and programs, Germany and Great Britain have the worst ranking. The total opposite is France and Netherland, who obtained the priority mark for the same subjects. A very important editorial help is offered by insurance companies in Belgium, France, Spain and Sweden. In five countries (41,6 %) the ministries with an average mark placed in the hierarchy of the editorial meaning (France, Germany, Spain, Great Britain). Autoclubs are introduced with a good or very good mark in Belgium, France and Germany.

3. The system of financing didactic materials for traffic education in schools

A very important factor for the equipping of schools with didactic materials and aids for traffic education is the system of their distribution and payment. In the indicators acquired by saving, there are three ways, in which schools take on the media, either for free, partly free and partly for a fee or just for a fee, according to the forms and measurements of their subsidizing by the producers or third subjects. For the age group 11–15 the basic didactic aids are offered for free in 6 countries (50 %), partly free and partly paid in 9 countries (75 %). In Belgium, France, Italy, Germany and Austria, there are both systems. In 4 countries (33,3 %), Denmark, Finland, Netherlands and Sweden, the didactic aids for traffic education for older students of primary schools are for a fee. Also for the age group 15–18, the basic didactic aids are offered for free in schools in 6 countries (50 %). The system of distribution and payment copies (except for Finland, that doesn't present the type of payment for middle schools) the system for primary schools.

4. The main problems of the realization of traffic education at schools

The main problems of realization of traffic education at schools are: little or no preparation of the teachers, not enough didactic materials, not enough finances for the formal and material backup of the lessons, no curriculum and not enough lesson time. Also unreachable or no equipment for the practical training is presented sporadically, also the insertion of this subject between optional subjects or no insertion in the curriculum at all, and not enough information.

In the description of the situation in examined countries, the main problem in the 11-15 age group in 10 cases (83,3 %) is the insufficient preparation of teachers, in 8 countries (66,6 %) it's the lack of curriculum and in 10 countries (83,3 %) it's the lack of time for lessons. The relatively most bearable deficiency is the lack of finances and didactic materials, even though this problem is presented by all countries except Switzerland.

For this age category of children and relevant schools, in Netherlands materials, there is a reservation enforced for the nonexistent equipment for practical training and in Austrian materials there is a warning about the basic mistake, that traffic education is not an individual mandatory subject.

For the realization of traffic education for youth 15-18, there is once again the problem of insufficient preparation of teachers in 10 countries (83,3 %), and in Belgium, Denmark, Germany, Austria and Sweden this handicap is rated as the

worst. In 8 countries (66,6 %) the main problem is the lack of curriculum (rated the worst in France and Austria) and in 9 countries (75 %) lack of time for the lessons (especially in Italy, Spain and Sweden). Austria and Spain think that the lack of didactic aids is the most serious problem, in Netherlands and Austria it's the lack of finances, in France, Italy and Austria it's the non-existent or insufficient curriculum, and in Netherlands and Austria it's the lack of time for the traffic education lessons. Austria very fiercely criticises the fact, that traffic education is not an independent and mandatory subject.

5. The periodic analysis of the curriculum

From the results of research it is clear, that from 10 countries only 3 countries (25 %) – Denmark, Finland and Netherlands put the curriculum of traffic education for the age group 11–15 through periodic analysis. In Netherlands the curriculum is analysed every 4 years and the teaching methods are redrawn every 10 years. The other countries (except Switzerland and Great Britain) respond negatively towards the analysis of the curriculum, but they do generally respect its necessity. For the age group 15–18, the curriculum is analyzed and innovated only in Denmark.

6. The main sociocultural and sociopolitical reasons of periodic innovations of the curriculum

The most important reasons for the periodic curriculum innovation in the inquired countries are as follows: the change of lifestyle and of the society structure, changes in the problematics of traffic systems and of the level of active and passive safety of conveyance, including the degree of danger and types of automobile accidents. Other reasons for the curriculum innovation are the fundamental changes in the pedagogic approach and the teaching concept in schools, new pedagogic methodological and technological information, results of traffic research and changes in the traffic legislation. Using the analytic-synthetic ranking, the results of the research concerning the innovation of curriculum of the age group 11–15 will have to keep in mind the changes in lifestyle and traffic problematics in the inspection and innovation of the curriculum according to 7 countries (58,3 %), according to 8 countries (66,6 %) they will have to keep in mind the changes in the society structure and according to 5 countries (41,6 %) it will be the development of the types of automobile accidents and injuries.

For the age group 15–18, the main cause of the curriculum innovation are the basic changes of lifestyle in Belgium, Italy, Austria and Spain (in Spain including the changes of legislation), the types of automobile accidents and the degree of threat by accidents in France and Austria, and new information in traffic problematics in Austria and Sweden uncovered by a traffic research.

Denmark lists the general developmental changes in the pedagogic approach and in the conception of the educational process as the main cause of curriculum innovation, while Finland finds the main cause in the reorganization of the structure of teaching plans. In Spain, the curriculum innovation is set by law.

7. The use of existent curriculum, the transferring and adaptation in other countries' conditions

The use of existent curriculum after the adjustment of the content, forms, methods and resources is possible according to Finland, France, Italy, Germany, Netherlands, Austria and Sweden, while the opinion presented by Belgium and Denmark is negative. In all these cases, the opinions about the problematics (in both age groups) are the same, except for Germany, that is against the transfer of curriculum for the 5–18 year olds. The cause of this exception is probably Germany's respect towards the specific dissimilarities in traffic systems of individual countries, that are shown (or should be shown) within the framework of traffic education in the predriving and driving preparation of middle school students.

8. The reasons of the appropriateness of the transfer and effectiveness during the adaptation of the curriculum in other countries

Factors, that give reasons for the positive posture of the curriculum adaptation in other countries, that appear most frequently: the harmonization of education within the framework of bigger territorial units (such as the European Union), the convergent production of traffic safety culture, bigger effectiveness of the use of created didactic materials, programs and methods, the comparability of results of traffic education in different countries and easier detecting causes of failure and also the general minimalization of expense. Collective philosophy during the outline of the traffic education systems (says Netherlands) shows up independently as a reason or the excellent level of some parts of traffic education in partner countries, for example the preparation of cyclists with minimum effort while outlining these courses (Austria).

For the age group 11–15, the most frequent reason (7 countries, 58,3 %) of the takeover and adaptation of curriculum worked out in other countries is the creation of a convergent culture of traffic safety (Finland, France, Italy, Germany, Netherlands, Spain, Sweden). The effectiveness of the results figures in second place (6 countries, 50 %). A big meaning (5 countries, 41,6 %) is attributed to the possibility of having already created didactic and methodical materials and procedures (Finland, France, Germany, Austria, Spain).

It is not surprising that even for youth 15–18, the most common reason of transfer and adaptation of the curriculum worked out in other countries is also the creating of a convergent traffic safety culture. The awareness of urgency and sophistication of solving the problematics of accidents and injuries and the Europeanism is beginning to get promoted more and more in the political thinking. The effectiveness of the results and harmonization of traffic education is the priority in 4 countries (33,3 %). It is surprising, that in this category only a very small meaning is ascribed to the possibility of having used materials available and to the minimalization of the cost related to traffic education. These reasons are presented by only 2 countries—France and Spain (13,3 %). This fact reflects the generally higher interest in the highest adequacy system of traffic education to the specific conditions of individual countries, rather than the economic effectiveness.

The discussion of the results and foreign inspiring impulses

- *Traffic education should be a compulsory part of teaching plans at primary schools*
Traffic education and training should be a part of general education. Compulsory traffic education is a guarantee, that it is pursued in a systematic and progressive way, that is indispensable for gaining adequate knowledge, skill and postures.

- *Teachers must have access to the adequate preparation for traffic education within the framework of their studies*

Teachers must be offered specific preparation for traffic education in the framework of their university studies, in which they familiarized in detail with all the relevant suggestions. According to the experience from Austria, this preparation should be put through at least 1 hour a week for 1 semester. The preparation of teachers should also include competences, that would allow them to lead even practical training professionally in the conditions of real traffic.

The possibility of further training of pedagogues for leading traffic education with a goal to update their knowledge and their pedagogic skill also has a big meaning. Such specific postgradual studies should be bonused in the career code.

- *Traffic education must be based on official curriculum*

The existence of curriculum is the basis of the effectiveness of traffic education. The curriculum should reflect the strict correspondence with the rules of the prevention of traffic negatives and accidents and should include developmental, psychological, legislative, health and specifically transportational aspects according to the target group with the relation between the goals, content and teaching strategy.

- *Traffic education should permeate through the curriculum in cross-section themes or as a separate subject*

Through the integration of traffic education into different tuitional disciplines, the whole lesson can become an effective combination of theory with real needs, practical applications and life practise. Such a motivational factor causes the rise of interest in school education.

- *Curriculum of traffic education should be periodically analysed and innovated*

The periodic analysis of curriculum is the key step for their evaluation, innovation and update towards the real needs. The innovation should harmonize goals, content and strategy of traffic education with changing traffic problems, lifestyle and social needs.

- *In traffic education it is needed to stress the training in real conditions with elements of creativity, readiness and defensive behavior.*

During the practical training, the meaning of defensive behavior in traffic, which is marked as a traffic maneuver, during which accidents and danger are eliminated, should be stressed. This is related to carefulness, foresight of situations and correct deciding: who has the ability to foresee the development of traffic situations, is usually the one who has enough time to prepare for them and react.

- *State authorities are responsible for the provision of the production and the financing of quality didactic materials for traffic education of children and youth*

Didactic materials should be outlined by competent subjects, financed by the state and offered to schools for free. They must be carried out on modern attractive media comparable to other updated industry for the spreading of information, enlightenment and entertainment. The responsibility for the establishment of such a situation is in the hands of state authorities.

- *The terrain treatment of the countries of the third world with quality traffic educational programs is possible by the international transfer and the specific adaptation of existing curriculum.*

The traffic education curriculum in individual countries differs not just in goals, content, strategies, but even in structure- some are just instructions, others are worked out into detail. Even so, there exists a whole row of collective priorities in these projects for primary schools in the EU. As a positive factor we can consider also one of the results of the research, in which more than half the countries are for the possibility of transfer, mutual convergence and harmonization of existing curriculum. Without this tradition, the countries of the third world can adjust much more quickly and economically to the more advanced countries by transferring their existent traffic education systems and their adaptation to the specific home conditions. The most time and economy-saving solution is probably the formation of an expert working group for the transfer of the curriculum and for the preparation of the same curriculum for all EU countries, that would solve the problem on an international level, with the initial assignment to agree on goals, content, main methods and strategies of traffic education. A place for local specifics, traffic-technical conditions, cultural influence and a different mentality and language must be preserved.

Conclusion:

After the evaluation of the research the first phase provided through the comparative analysis is a picture of the situation in traffic education in chosen countries of the EU from the system and didactic point of view. In the second phase, the acquired information in the same EU countries was used to evaluate the situation of the security of traffic education of children and youth from the organizational, economical, material, technical and internationally cooperational point of view. Because the choice of inquired countries was subordinated to the criteria of comparability with the Czech Republic, the gained initiatives for the systemic solution of the investigated problem in the Czech Republic are relevant and inspirational.

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PREVENCE ÚČASTI DĚTÍ NA DOPRAVNÍCH NEHODÁCH V ZRCADLE ROZSAHU A FOREM DOPRAVNÍ VÝCHOVY DĚTÍ A MLÁDEŽE VE VYBRANÝCH ZEMÍCH EU, ČÁST 2

Souhrn: Dopravní nehody a podíl dětí a školní mládeže na jejich následcích je závažným negativním fenoménem intenzity dopravy současnosti. Jejich původ spočívá většinou v selhání některého z prvků dopravního systému, který tvoří jeho účastníci a dopravní prostředí, v němž se mobilita realizuje. Častým důvodem je zejména nedostatečná připravenost jednotlivých aktérů na vzájemnou bezpečnou interakci. Výchova a výcvik žádoucích znalostí, intelektuálních i motorických dovedností a správných návyků chování je předmětem systémů dopravní výchovy. V mnoha evropských zemích je tento systém velmi dobře koncipován a organizačně zabezpečen. Cílem studie je poukázat na rozdíly vybraných zahraničních systémů a artikulovat při jejich kritickém vyhodnocení podněty pro optimalizaci situace v ČR.

V první části studie (Stojan, M. Prevence účasti dětí na dopravních nehodách v zrcadle rozsahu a forem dopravní výchovy dětí a mládeže ve vybraných zemích EU, část 1. In *Škola a zdraví 21*. Monografický sborník výzkumného záměru MSM0021622421. Brno: Masarykova univerzita 2006) byly vyhodnoceny výsledky zahraničního šetření tématických oblastech:

- obligatority nebo fakultativnosti realizace dopravní výchovy na školách,
- subjektů realizujících dopravní výchovu na školách,
- přípravy učitelů ke kompetentnímu vedení DV,
- realizace dopravní výchovy na školách z hlediska existence jejich vyučovacích osnov,
- realizace dopravní výchovy na školách z hlediska věku a vývojové úrovně žáků pro zařazení dopravní výchovy do výchovně vzdělávacího systému,
- forem výuky a výcviku dopravní výchovy a míry integrace učiva dopravní výchovy s jinými vyučovacími předměty,

- časového rozsahu výuky a výcviku dopravní výchovy,
- cíle, obsahu, forem a metod dopravní výchovy.

Druhá část této studie reflektující výsledky následující etapy šetření v rámci výzkumného záměru MSM0021622421 je věnována vyhodnocení parametrů týkajících se definování hlavních problémů realizace dopravní výchovy na školách, charakteru médií a používaných didaktických materiálů včetně subjektů jejich produkce, prostředků na úhradu didaktických technologií a jejich poskytovatelů, postoji a argumentům školských orgánů k pravidelné evaluaci úrovně a efektivity DV na školách a na ně navazující reflexní analýze a inovaci osnov, a konečně prezentovanému názoru na možnost mezinárodního transferu osnov a zkušeností s DV a jejich adaptace na regionální podmínky.

Klíčová slova: dopravní výchova, média a technologie pro DV, vydavatelé didaktických pomůcek a prostředků pro DV, distribuce a financování pomůcek, evaluace systémů DV a jejich reflexní analýza, transfer osnov DV