ROAD SAFETY EDUCATION AND ACTIVITIES IN GERMANY

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ABSTRACT

Road Safety is an important issue in Germany since the mid of the 20th century when the number of cars and road traffic injuries and fatalities increased. Since then a variety of traffic safety measures was developed to approach the problem.

To increase road safety it is important to regard the three factors: the human field, the infrastructure and the vehicle based technology. That leads to measure of education, enforcement by law, improvement of infrastructure and innovations of technology.

Established educative measures are the traffic education in pre-school and elementary school as well as the driving licence system and driving training system. Even though these measures are established and proven to be effective there are continuously developed to work even better. That led for example to the introduction of a zero-alcohol policy for novice drivers in 2007 and the revision of the driving licence system for young drivers. In 2004 started a pilot project to test the effects of accompanied driving for 17 year old drivers (after passing a driving licence test) who are given a full driving licence when turning 18. After the successful pilot the accompanied driving was fully introduced into law in 2010. A Study analysing the effects shows the positive effect (reduction of road traffic accidents and traffic offences: about 20%) of these measures (Franz-Dieter Schade, Hans-Jürgen Heinzmann 2013).

A safe and error-forgiving infrastructure is important for safe road traffic. Therefore it is important to consider not only road capacities when (re-)designing a road, but the road safety of all road users. For this reason the road safety audit was introduced in 2004 for checking only safety aspects which is now obligatory for all rural roads and motorways, but not yet for urban roads.

For this it is also important to have continuous studies to generate up-to-date findings about e.g. road designs that tend to be safe and road designs which should be avoided. E.g. in the 1990’s it was common to give cyclists space on the sidewalk, nowadays it is said to be safer for a cyclist to drive on the road so that the car drivers can see the cyclists better.

Together with safer cars and driving assistant technology it was possible to reduce road traffic fatalities dramatically down to about 3,300 (about 30% of fatalities in 1991) (statista GmbH 2015).
1. ROAD SAFETY SITUATION IN GERMANY

Road Safety is an important issue in Germany since the mid of the 20th century when the number of cars and road traffic injuries and fatalities increased. Since then a variety of traffic safety measures was developed to approach the problem.

Fatalities increased with the level of motorization until crucial road safety measures in all kind of fields were taken such as the speed limit on rural roads, the implementation of an allowed blood-alcohol-level for car drivers, mandatory helmet and seatbelt usage, the introduction of air bags, principles of road network design towards self-explaining roads, improvements of rescue services and the road safety audit among other educative and technology-based measures (e.g. Figure 1).
2. OVERVIEW ROAD SAFETY PROGRAM

To increase road safety it is important to regard especially the three factors: the human field, the infrastructure and the vehicle based technology. These fields are addressed by the Federal Ministry of Traffic and Digital Infrastructure’s Road Safety Program 2011-2020 which aims to reduce road traffic fatalities by 40% until 2020 (Bundesministerium für Verkehr, Bau und Stadtentwicklung 2011). Within the program the ministry is financing, organizing and coordinating research projects, measures of education, enforcements by law, improvements of infrastructure and innovations of technology.

In 2015 the ministry looked onto the interim results of the current program and was able to say that the fatalities were reduced so far by about 16% comparing 2011 to 2014. Looking on age groups a it is noticeable that the number of fatalities of children could be reduced about 17% and a significant reduction of 33% of fatalities of persons aged 18-24 could be observed. Looking on transport modes on urban roads, the two groups with the highest number of fatalities are pedestrians and cyclists and on rural roads car driver and motorcyclists. (Bundesministerium für Verkehr und digitale Infrastruktur 2015)

For that chapter 3 focuses on selected successful measures for these two age groups.

3. SELECTED ROAD SAFETY MEASURES

In the following some crucial measures, implemented during the last decade, are presented focusing on the important age groups of school children and young drivers.

3.1. Measures for School Children

3.1.1. School Route Maps

A guideline for the development of school route maps based on a research project on the “Development, spread, and usage of school route maps” is placed at the disposal of states and municipalities as part of the national traffic safety program.

School route maps are an important support tool for parents and children in finding and walking the safest ways to school. An example is shown below (cf. Figure 2).
School route maps for primary schools mainly target parents of first-year pupil, although a newly developed school route map can also support parents of children in other age groups.

As the map emphasizes walking distance, the map area extends about one kilometer in radius around the school, correlating generally with the school district.

School route maps can also address parental drop-off/pick-up traffic, cycling, or school bus usage depending on the children’s mode of transport.

A school route map consists usually of the following parts:

- a cover letter to the parents;
- general safety advice for going to school;
- a school route map with the following information:
  - location of school
  - problematic spots along the way to school
  - explanatory pictures and a legend
  - guidance for handling problematic spots
  - concrete recommendations for ways to school (where applicable)
  - spots for crossing
  - spots for crossing guards (where applicable)
• scale;
• the publisher;
• the contact person; and
• the year of issue

(Leven et al. 2012)

3.1.2. Parent Taxi Stops
Insufficient experience is weighing heavily on road traffic. Children ages 10 to 15 cannot recognize and evaluate dangerous situations correctly. This explains the growing number of efforts aiming to shift the mobility behavior of children toward autonomous participation. (Allgemeinder Deutscher Automobil-Club e.V., Resort Verkehr 2013)

Therefore, the national traffic safety program of 2009 mentioned the problem of “parental taxi traffic” at schools.

“Parental taxi traffic” is an underestimated danger around schools. Parents often violate parking rules in front of schools and thereby interfere with other road users.

The German Road Safety Organization advises against giving children a lift to school for the following reasons:

• teachers and police state that a large part of the traffic problems around primary schools originates from parental traffic;
• it is better for children to walk because the exercise is good for health and fitness;
• walking to school improves concentration in class;
• children gain important experiences as road users (cf. Figure 3);
• sharing a common way to school stimulates social behavior; and
• walking to school is more eco-friendly.

(Verkehrswacht Medien Service 2014)
The “Parental taxis at primary schools: A code of practice,” published by the automobile club ADAC in 2013, helps to estimate the scope of the problem area and suggests measures to reduce the traffic or find a more compatible arrangement such as deconcentration via Parent Taxi Stops.

Recommendations from the guide:

For the taxi stop:

- The implementation should be agreed upon by the local authorities
- Nurseries should be taken into consideration, as they create overlapping traffic
- The measures should be accompanied by publicity efforts to encourage acceptance among parents and residents
- The taxi stop should be combined with other mobility projects like “Walking Buses” (children walking together in a bigger group) or days of action

For the way from the taxi stop to school:

- The distance from the taxi stop to the school should be at least 250 meters to ensure that the children get exercise and learn competence in road traffic
- The route should be safe and interesting to ensure a high acceptance among children and parents
- The route should not feature difficult crossings; if such crossings are unavoidable, they should be secured by traffic lights, “zebra” crossings, or crossing guards
- The route should be in a zone with slow car traffic
- The route should be adequately illuminated and cleared of snow in the winter
• The route should feature good lines of sight, especially at the driveways of private properties.

(Leven et al. 2012)

3.2. Measures for young drivers

3.2.1. Accompanied Driving

In 2004, an “accompanied driving” pilot project was introduced as a new approach to driving education in Germany. The trial ran for six years and generated studies about the effects. These studies showed such positive effects that the accompanied driving was fully introduced into driving education nationwide in 2011 based on the Driving License Regulations (Bundesministerium für Verkehr, Bau und Stadtentwicklung).

The approach of accompanied driving is grounded in the need to prolong learning time. Through this approach, a young driver does not begin driving autonomously after three to six months of training but can benefit from the knowledge of the accompanying person and has an overall learning time of up to 18 months before driving on their own. Based on the Driving License Regulations, the accompanying person is, before and during the trip, supposed to be exclusively a contact to assure the accompanied driver wherever the circumstances permit.

The training concept is designed so that drivers can take the training at driving school from 16½ years onward (1 year earlier than under the former system, cf. Figure 4), take the driving test at the minimum age of 17, and obtain a preliminary driving license, which is converted into a full driving license when the driver turns 18 (Bundesministerium für Verkehr, Bau und Stadtentwicklung; Funk, Dittrich 2010).

![Figure 4: Prolonged learning time (Funk, Dittrich 2010), modified](image)

3.2.2. Allowed Blood Alcohol Level and the Zero-Alcohol Policy for Novice Drivers

Since 1998, the general permitted blood alcohol limit has been 0.50 %/₀₀ for car drivers. A blood alcohol level of over 0.50 %/₀₀ is punishable as an administrative offense under §24 of the Road Traffic Act (StVG). A blood alcohol of 1.1 %/₀₀ is considered indicative of absolute unfitness to drive and is
punishable as a felony under the penal code (§315c / §316 StGB). For cyclists the blood-alcohol-level of 1.1 %/0 is now being discussed to be reduced to 0.8 %/0.

Young drivers are particularly susceptible to the problem of the combination of drinking while partying and driving; a high rate of young drivers cause accidents while drinking and driving. Young drivers with a low alcohol level have already a highly increased accident risk. Because of this, a zero-alcohol policy for novice drivers was introduced in 2007. Based on the Road Traffic Act, the policy states that young drivers (under 21 years old) and novice drivers in their probation periods are not allowed to drink any alcohol when driving.

A research study about the effects of this new law accompanied its implementation, looking into accident occurrence and traffic offenses caused by the influence of alcohol.

The study showed that the zero-alcohol policy had a considerable effect on the road safety of young drivers. Data on accidents and traffic offenders showed considerable decreases in not only accidents caused by drunken novice drivers but also the number of alcohol offenses by novice drivers in the year following the introduction of the new law. The study also found a high acceptance of the zero-alcohol policy among young drivers. (Holte et al. 2010)

4. CONCLUSION
To improve the safety on urban and rural roads it is important to farther promote established educational and infrastructural measures such as traffic education, the road safety audit and the work of accident commission, but it is also important to develop and test new measures to reach the goal of a safe traffic environment.
5. PUBLICATION BIBLIOGRAPHY


Leven, Tanja; Leven, Jens; Gerlach, Jürgen (2012): Schulwegpläne leichtgemacht. Der Leitfaden. Edited by Bundesanstalt für Straßenwesen.

