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TRAFFIC SAFETY AND MOBILITY EDUCATION AS PART OF THE SAFE SYSTEM APPROACH



European Transport Safety Council



This publication is part of the LEARN! project. The project is coordinated by ETSC and supported by Fundación MAPFRE and the Flemish Foundation for Traffic Knowledge (VSV).

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ETSC, Fundación MAPFRE and VSV would like to thank the following experts for providing invaluable guidance and support for this project:

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LEARN! Traffic Safety and Mobility Education as part of the Safe System approach

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This paper focuses on the role of traffic safety and mobility education in the Safe System approach. It extends the LEARN! Manual's section on education as part of a larger approach to improve road safety.¹

Collisions and underlying system errors

Collisions as well as deaths and injuries are almost always the result of a combination of factors. These are partly due to conscious but also to unconscious or unintended unsafe acts of road users. In the majority of collisions, road users play a role as the dominant weak link. Estimates about the share of human causes in the occurrence of traffic crashes vary, depending on the study.

In addition, underlying errors in the design of the traffic system also play an important role. Such system errors can occur in various places and are represented in the so-called Swiss Cheese Model developed by James Reason.² Underlying system errors, such as the poor condition of road infrastructure or unclear regulations, increase the chance of a collision occurring, especially if they are combined with human factors such as risky behaviour or distraction among drivers.

A good road safety policy is therefore always based on the Safe System approach, which focuses on mapping out and eliminating all factors that increase the risk or severity of collisions. Examples of such a system approach are "Sustainable Safety" in the Netherlands and "Vision Zero" in Sweden and Norway. The Safe System approach is considered to be international best practice in road safety by the World Health Organisation³ and the Organisation of Economic Cooperation and Development.^{4,5} Both organisations recommend that all countries, regardless of their level of road safety performance, follow the Safe System approach. The European Commission also based its road safety policy framework for the decade 2021 to 2030 on the Safe System approach.⁶

Humans in the Safe System approach

In the Safe System approach, the vulnerability of humans is recognised, as is the fact that they make mistakes and do not always adhere to rules. This applies even more to children and youngsters, who also have a number of physical and psychological limitations that can compromise their safety.

The Safe System takes these characteristics and limitations into account ("safety by design"). This means that the traffic environment must be in line with road users' capacities, and with the impulses that humans have by their nature. The environment must thereby provide support and protection (including recognisable and predictable roads, forgiving roads and safe vehicles). Moreover, information and education should prepare road users as well as possible for their participation in traffic. Lastly, enforcement is necessary to check if road users comply with the rules and, if not, correct them. A Safe System approach therefore is an integral system that encompasses the three Es of road safety measures: Engineering (infrastructure and vehicles), Education (education, training and information) and Enforcement (regulations and enforcement).

Traffic Safety and Mobility Education should never stand alone

Within the Safe System approach, traffic safety and mobility education never stands alone, but is combined with other measures that address the underlying factors in road safety. A simple example to illustrate this: if at certain intersections many collisions occur with children who cycle to and from the school, one can opt to intensify traffic education efforts in schools so that the children know exactly what dangers they must specifically look out for and what rules they must adhere to. However, an in-depth analysis of the collisions could show that traffic flows at those specific intersections are not conflict-free, so that cyclists systematically run the risk of being hit by, for example, right-turning car traffic (left-turning in the United Kingdom and Ireland). This is an underlying system error. In this case it is obvious that the increased efforts for traffic safety and mobility education should be combined with measures to eliminate the system error. In concrete terms, the traffic flow at the intersections in question may be improved by adjusting the traffic lights so that all possible conflicts between cyclists and cars are eliminated (provided that cyclists and car drivers adhere to the rules).

1 Part I.2 in: ETSC (2021), The LEARN! Manual for developing and evaluating traffic safety and mobility education activities. <http://bit.ly/learn-manual>

2 Reason, J. (1990) The contribution of latent human failures to the breakdown of complex systems. *Philosophical Transactions of the Royal Society (London)*, series B. 327: 475-484.

3 WHO (s.d.). Global Plan for the Decade of Action for Road Safety 2011-2020. <https://bit.ly/2R0AdsQ>

4 OECD (2008). Towards Zero: Ambitious road safety targets and the safe system approach. <https://bit.ly/3dwfKpp>

5 OECD (2016). Zero road deaths and serious injuries. Leading a Paradigm Shift to a Safe System. <http://bit.ly/2QF2shw>

6 European Commission (2019), Commission Staff Working Document: EU Road Safety Policy Framework 2021-2030 - Next steps towards "Vision Zero". SWD(2019)283. <https://bit.ly/3glXjpl>

Responsibility of other road users

Since children by nature have important limitations when it comes to safe traffic participation, their safety is more often than not in the hands of other road users. Road users should never expect children to behave as “small adults”, even in relatively straight-forward traffic situations.

The Vienna Convention on Road Traffic therefore expressly states that drivers must show extra care in relation to the most vulnerable road-users, and in particular children, amongst others.⁷ This principle has been incorporated into the traffic legislation of all countries that have signed the Vienna Convention.

Specifically, it means that drivers are obliged to adjust their speed and to pay extra attention as soon as they notice children or other vulnerable road users, or can expect that they are nearby (for example in school environments, on school routes and in the vicinity of playgrounds).

The responsibility for the safety of children also partly lies with the parents, who do well to make their child familiar with participating in traffic as pedestrians and cyclists from an early age. Only in this way can children gain sufficient traffic experience; this lays the necessary foundation for safe traffic behaviour at a later age, when they have become independent road users.

⁷ United Nations Economic Committee for Europe (UNECE) (1968/2006), Convention on Road Traffic (2006 Consolidated Version).
<http://bit.ly/2RRMK0b>

