

# THE STATUS OF TRAFFIC SAFETY AND MOBILITY EDUCATION IN EUROPE

January 2019





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[www.trafficsafetyeducation.eu](http://www.trafficsafetyeducation.eu)

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# EXECUTIVE SUMMARY

Education is considered an essential part of the integrated approach to traffic safety. While it is important to view road safety education as a lifelong learning process, this report focuses on how such education is given at primary and secondary education in Europe.

Even though the overwhelming majority of European countries have signed the UNECE's Convention on Road Traffic and thereby committed to provide road safety education in schools at all levels, this first overview of traffic safety and mobility education in Europe shows that in practice this commitment is not always fulfilled. Only in the Czech Republic, Ireland and Germany is road safety education provided at all levels.

While road safety education is provided to children in primary education all over Europe, it is generally not given to children and youngsters in secondary education in 19% of the states. Moreover, the overview reveals that traffic safety and mobility education is generally only sparsely addressed in secondary education in those states where it is given. This while traffic mortality steeply increases after 13 years of age, and those children and youngsters in high schools could therefore benefit from receiving road safety lessons structurally.

For both primary and secondary education, this report shows that traffic safety and mobility education is not a dedicated subject in the vast majority of states (respectively 72% and 83%). In addition, the amount of hours primary school children receive road safety education differs widely across Europe and even within states.

While exams are an important tool to verify that the established educational objectives are met, they are only taken in one third of the European states for primary education and only in four of the twenty-nine states where road safety education is generally given at secondary level.

In terms of educational content, most states across Europe address traffic rules and signs as well safe behaviour at primary level, and this is subsequently expanded to include the risks faced by young drivers at secondary level.

The overview furthermore shows that the provision of education for teachers differs widely across Europe, however only in Poland and Slovakia is it addressed structurally.

Although traffic safety education is considered an essential part of the integrated approach to traffic safety, little is currently known about its effectiveness. More should therefore be done to improve the quality and quantity of evaluations of traffic safety and mobility education programmes.

*Education is considered an essential part of the integrated approach to traffic safety.*



# INTRODUCTION

With over 25,000 people still dying on European roads every year, it is vital that every measure is taken to improve road safety. In addition to vehicle safety measures, infrastructure engineering and enforcement, traffic safety and mobility education has an important role to play in making Europe's roads safer.

The LEARN! project (Leveraging Education to Advance Road safety Now!) by the European Transport Safety Council (ETSC), Fundación MAPFRE and the Flemish Foundation for Traffic Knowledge (VSV) aims to improve the quality of traffic safety and mobility education in Europe by providing information, tools and resources to education experts as well as recommendations on policy measures to decision makers.

The project focuses in particular on children and youngsters, as they have a right to grow up safely and traffic safety should therefore be an important and natural part of their everyday life. After all, children and youngsters are road users every day as passengers, as pedestrians, as cyclists, and as users of nascent modes of transport such as electric scooters.

Traffic safety for children and youngsters is the adult's responsibility and involves physical arrangements, the use of safety equipment, education and training, guidance and support. They must gradually be given more and more responsibility for themselves and their safety. The most important learning in this regard is practical: through their own experiences. If good habits are established when the children are still small, it is likely that they will grow up to become responsible road users.

Adults are important role models. The choice of the form of transport to the day-care centre and to school, work and leisure time activities affects the child's traffic education. Schools and kindergartens must consider traffic safety as part of their HSE work, their cooperation with parents, and the implementation of activities scheduled throughout the year.

The overwhelming majority of European countries have signed the UNECE's Convention on Road Traffic (also known as the "1968 Vienna" Convention)<sup>1</sup> and have thereby committed to provide road safety education.

**"Article 3(5bis). Contracting Parties will take the necessary measures to ensure that road safety education be provided on a systematic and continuous basis, particularly in schools at all levels."**

However, without a unifying framework for the provision of such education at UNECE or even EU level, European countries have all implemented their own distinct systems. This report provides an overview of the status of traffic safety and mobility education across Europe from both a legal as well as a practical perspective. It sets out where in Europe such education is given, at what level (e.g. primary and/or secondary), if it is required by law, who teaches the course, and how the lessons are structured.

This report also looks at the road safety situation for children and youngsters as well as the EU's role in traffic safety and mobility education, and examines mobility education from the wider perspective of health and sustainability.

<sup>1</sup> United Nations Economic Committee for Europe (1968/2006), Convention on Road Traffic (2006 Consolidated Version). <http://bit.ly/2RRMK0b>  
Cyprus, Iceland, Ireland, Kosovo and Malta have not signed the Convention on Road Traffic.

# PART I

# DEFINING TRAFFIC SAFETY AND MOBILITY EDUCATION

For the purpose of the LEARN! project, the following definition<sup>2</sup> has been established:

Traffic safety and mobility education covers all measures that aim at positively influencing traffic behaviour patterns, with an emphasis on:

- Gaining knowledge and understanding of traffic rules and situations;
- Developing and improving skills through training and experience;
- Strengthening and/or changing attitudes and intrinsic motivations towards risk awareness, personal safety and the safety of other road users to contribute towards a safety-minded culture;
- Providing the tools necessary for a well-informed choice of transport mode.

## 1.1 Setting the Age Group

Before the definition is described in more detail, it is important to discuss the target age group for the LEARN! project, as addressing educational activities for all age categories would go beyond the scope of this project.

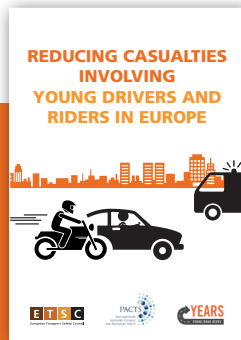
The project concerns educational activities for children and youngsters up to the age of 18 years old, with a focus on primary and secondary education (6 - 17 years old)<sup>3</sup> as that is the target group of the vast majority of educational activities.

Road safety statistics would have justified looking at children and youngsters up to 25 years old, as young road users between 15 and 24 years old are overrepresented in death and serious injury statistics: while they represent 11% of the population, they account for 17% of road deaths. As many youngsters gain access to powered two-wheelers and passenger cars during this period, this would require the inclusion of driver and rider education in this project as well. While vital to the safe participation of young drivers and riders in traffic, given its specialised focus, driver and rider education is better addressed separately.

Even though the vast majority of educational activities are targeted at children and youngsters, it is nevertheless important for road safety education to be seen as a life-long learning process, encompassing all age groups from young children to the elderly. Each age group may face different challenges, yet all could benefit from gaining more knowledge, improving their skills and contributing towards a safety-minded culture.

<sup>2</sup> Starting point for the definition was the definition for road safety education as established by the ROSE25 project. This ROSE25 definition was expanded based on extensive consultation with the project's Expert Panel. ROSE25 (2005), Booklet Good Practice Guide On Road Safety Education, p. 25. <http://bit.ly/2GeDJgi>

<sup>3</sup> In the majority of European states, 6 is the age at which the child starts primary education and/or is obliged to go to school. In most EU Member States the age at which one finishes his or her secondary education is 18 or 19. Most 17 year olds are therefore assumed to still be attending secondary education: this age has therefore been chosen as the upper limit. For more information on the European states' education systems: European Commission (2018), The structure of the European education systems 2016/17. <http://bit.ly/2zWGAVu>



For more information on the risks faced by young road users (15-25), the factors behind the young road user problem as well as the countermeasures which could be taken, please see ETSC's Report "Reducing Casualties Involving Young Drivers and Riders in Europe" (2016). The report is available at <http://etsc.eu/GCX2p>

## 1.2 Exploring the Definition

The aim of traffic safety and mobility education is to positively influence behaviour patterns that result in safer traffic. Elementary to traffic safety and mobility education is *the transfer of knowledge and gaining an understanding of traffic rules and situations as well as the development and improvement of skills needed to participate safely in traffic through training and experience.*

Traffic safety education also encompasses those measures that *strengthen and/or change one's attitude as well as intrinsic motivation towards safe participation in traffic* with the aim of bringing about a safety-minded culture. Important in this regard is self-insight and reflection on own and others' attitudes, motivations and behaviours.

This safety-minded culture consists of two aspects: a personal and a social. The former concerns the strengthening of attitudes and motivations regarding the individual's participation in traffic by enhancing their risk awareness and personal safety.

The social aspect concerns the strengthening of attitudes and motivations of the individual's interaction with other road users and the attention paid to their safety. The creation of a culture of willingness is considered important, as road users share the space on the road and road safety should therefore be seen as a shared responsibility. In addition, this social aspect also encompasses interfering with the risk behaviour of others, by commenting on it, saying no to it or by withdrawing from it.

Further to the political concern (by establishing political agendas) and the social control (in terms of laws and regulations and their enforcement), a traffic safety culture is strongly related to the knowledge and information that should be communicated to road users by training and learning at cognitive and practical level.<sup>4</sup>

Finally, traffic safety and mobility education also covers those measures that provide the tools necessary to make an *informed decision about which mode of transport to take.* Important in this regard is the promotion of active and sustainable transport modes.

Walking and cycling - the active modes of transport - should be encouraged, as cyclists and pedestrians do not endanger other road users as car drivers do, due to their lower speed and mass. In addition to health and quality of life benefits, promoting active travel as an attractive alternative to motorised transport will furthermore decrease traffic noise, pollution and congestion, notably in urban areas.

In order to encourage the use of active modes, it is important that the key principles of safe walking and cycling are taught and that pedestrians and cyclists learn how to handle possibly risky situations from a young age.

The use of public transport should furthermore also be encouraged, as the core public transport modes (bus and rail) are the safest modes of land transport. Trips by public transport, including walking or cycling to and from their access points, are collectively safer than car trips and less polluting for the environment.

<sup>4</sup> Machata et al (2018), TraSaCu Stakeholder guide to integrate Traffic Safety Culture in road safety strategies. <http://bit.ly/2FcFDg6>



However, active modes may not always be the safest option available and it is therefore important that awareness is raised about the local context, so that a well-informed decision can be made by the road user on which mode of transport to take.

### 1.3 A Note on Effectiveness

Traffic safety education is considered an essential part of the integrated approach to traffic safety, as it teaches and corrects behaviour that is clearly related to traffic safety.<sup>5</sup> The generally-preferred method for determining the effectiveness of a road safety measure is the reduction in fatalities and collisions.

The overall goal for traffic safety education is also to reduce the amount of fatalities and collisions. However, a correlation between this reduction and educational activities is difficult to establish since many factors besides education influence this overall goal.

As collisions occur relatively infrequently, and since the target groups of the individual educational activities are small, changes in behaviour are instead chosen to determine the effectiveness of education projects.<sup>6</sup> Knowledge, skills and attitudes are known to influence a person's behaviour on the road, and it is in turn known that a correlation exists between behaviour and the risk of being involved in a collision. Changes in knowledge, skills, motivations, behaviour and attitudes are therefore useful parameters for measuring the effectiveness of educational activities.

However, very little is known about the effectiveness of traffic safety education. The scope of relevant studies is usually too small to generalise and it is, furthermore, generally not tested whether the established learning objectives were also met in practice.<sup>7</sup> A meta-analysis of 674 studies evaluating traffic safety education programmes resulted in only 15 studies that met the methodological requirements, although even the methodological quality of these 15 studies was considered generally poor.<sup>8</sup> This meta-analysis however dates from 2002 and while traffic safety education might have changed in the meantime, more recent analyses are not available.

It is therefore important that education projects are designed and evaluated based on proven behavioural theories, as is for example done in the Norwegian Council for Road Safety's model for behaviour modification that is used as a model for quality assurance and evaluation of traffic safety programmes.<sup>9</sup>

The principle "there is no harm in trying" should furthermore not be applied to traffic safety education. Projects that are poorly designed can in fact have an adverse effect and the money as well as time could better be spent on well designed and evaluated projects and measures instead.<sup>10</sup>

The lack of evaluations, both in terms of quantity as well as quality, underlines that more should be done to improve the evaluation of education projects all over Europe. Both outcome evaluations (changes in behaviour) and process evaluations (the project's pedagogical quality) should be undertaken in order to improve the quality of traffic safety education in Europe.

A forthcoming LEARN! publication, a manual on best practice guidelines for designing, testing, implementing and evaluating traffic safety and mobility education, will look into measuring the effectiveness and the theory-based design and evaluation of educational activities in greater detail.

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<sup>5</sup> Vissers, Hegeman & Slinger (To be published), Development and implementation of a 'road safety education' checklist to measure and promote the quality of educational interventions.

<sup>6</sup> SWOV (2017), Factsheet Verkeerseducatie. <http://bit.ly/2EejM6O>

<sup>7</sup> SWOV (2017), Factsheet Verkeerseducatie. <http://bit.ly/2EejM6O>

<sup>8</sup> Duperrex, O., Bunn, F. & Roberts, I. (2002), Safety education of pedestrians for injury prevention: a systematic review of randomised controlled trials. <http://bit.ly/2QLTE9W>

<sup>9</sup> Trygg Trafikk (2017), The Norwegian Council for Road Safety's model for behaviour modification

<sup>10</sup> SWOV (2017), Factsheet Verkeerseducatie. <http://bit.ly/2EejM6O>

# PART II

## THE ROAD SAFETY SITUATION FOR CHILDREN AND YOUNGSTERS IN EUROPE

The road safety of children and youngsters has improved considerably in almost all European countries over the past decade. Yet, 1,188 children and youngsters under the age of 18 were killed in the EU in 2016 alone and more than 19,500 have been killed over the last ten years. Many more sustained life-changing injuries.

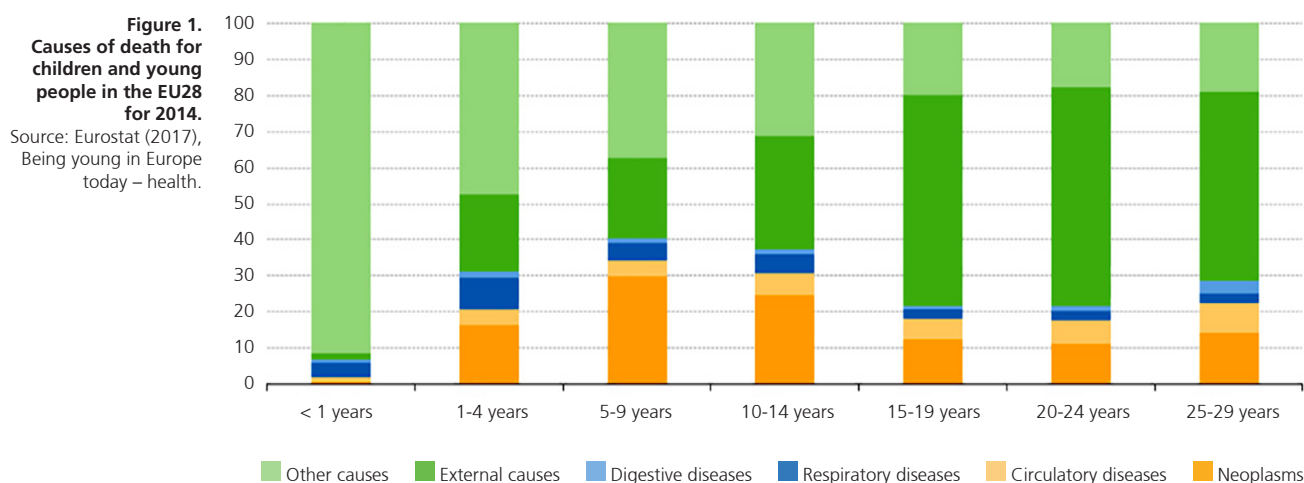
The impact of these deaths and life-changing injuries on families and communities is immeasurable. But these numbers of deaths and injuries are not inevitable.

This chapter builds upon ETSC’s report “Reducing Child Deaths on European Roads”<sup>11</sup>, which looked at the road safety of children (up to and including 14 year old), and extends it by including road safety data for 15, 16 and 17 year olds to provide an overview of the road safety situation for the project’s target age group.

### 2.1 Road Deaths in Comparison to Other Causes of Death

Collisions on the road are a significant cause of death of children and youngsters in Europe. On average in the EU, one in thirteen child deaths after the first birthday results from a road collision, with proportions varying from 4% in the UK and Sweden to over 14% in Latvia and around 13% in Croatia and Finland.<sup>12</sup>

For youngsters between the age of 15 and 19 years transport accidents are regrettably the main cause of death, accounting for 25% of all deaths in this age category.<sup>13</sup> Figure 1 shows the distribution of causes of deaths for persons under 30, with road deaths included as a main external cause.



<sup>11</sup> ETSC (2018), PIN Flash Report 34, Reducing Child Deaths on European Roads. <http://bit.ly/2zOw8zt>

<sup>12</sup> Child is defined as up to and including 14 years of age. ETSC (2018), PIN Flash Report 34, Reducing Child Deaths on European Roads. <http://bit.ly/2zOw8zt>

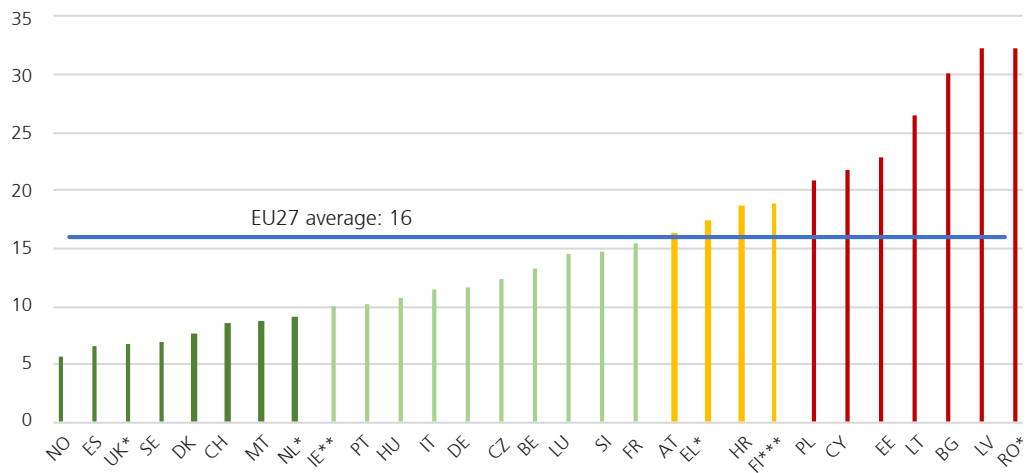
<sup>13</sup> Eurostat (2017), Being young in Europe today – health. <http://bit.ly/2UU1QEK>

## 2.2 Mortality of Children and Youngsters Differs Widely across Europe

For children and youngsters in the EU, there were on average 16 killed on the road per million child and youngster (aged 0-17) population between 2014 and 2016. It should be underlined that the road death rate of 15, 16 and 17 year olds contributes to half of this figure, as the average for children up to and including 14 years old is 8 deaths per million child population.<sup>14</sup>

However, children and youngsters do not benefit from the same level of safety everywhere in Europe. The road fatality rate for children and youngsters in Norway is over 5.5 times lower than in Latvia and Romania. Countries with an overall good road safety performance also tend to have a good road safety performance for children and youngsters.

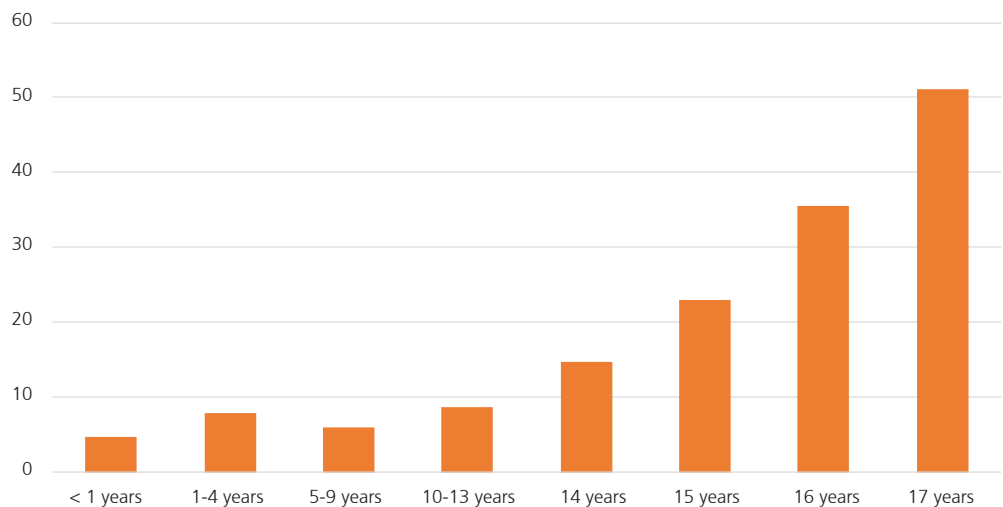
**Figure 2. Deaths per million child and youngster (aged 0-17) population.**  
Average number for 2014-2016 or the last three years available. (\* EL, NL, RO, and UK – 2013-2015 data; \*\* IE – provisional data for 2015-2016; \*\*\* FI provisional data for 2016. SK is excluded from the figure and average due to insufficient data)



## 2.3 Mortality Increases Steeply after 13

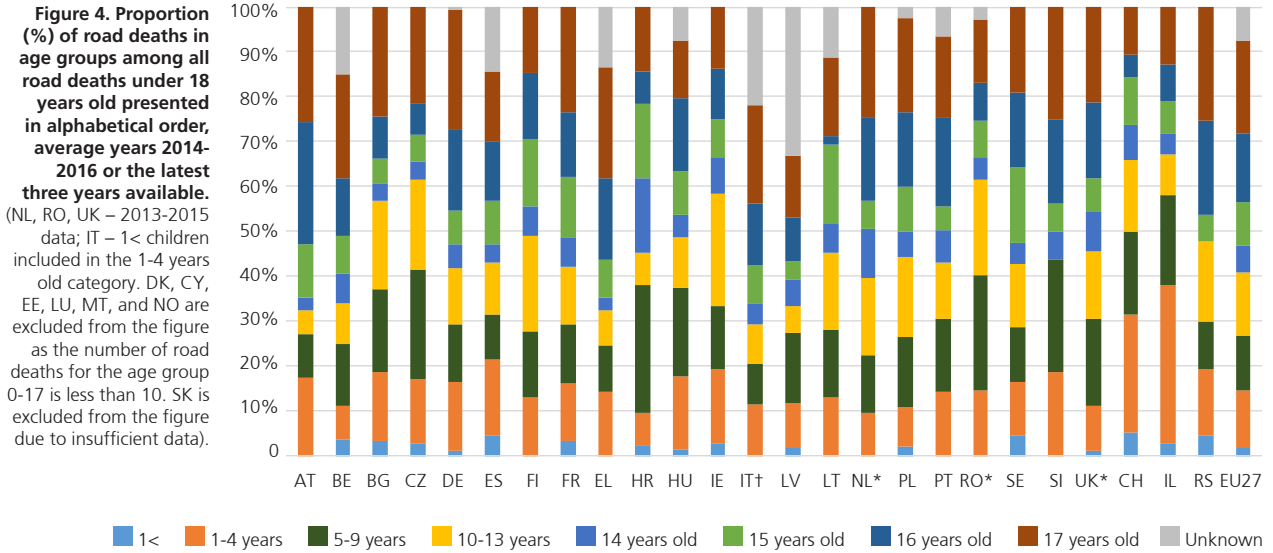
Children aged 10-13 have higher road mortality than children aged 5-9. As part of normal child development, children aged 10-13 are more likely to move around unaccompanied by adults, in particular travelling to and from school. But once they reach the age of 14 and progressively acquire access to powered two wheelers and cars, their road mortality starts to increase steeply.

**Figure 3. Road deaths by age group per million population of each age group, averages 2014-2016 for the EU27.** (SK excluded due to insufficient data).



<sup>14</sup> ETSC (2018), PIN Flash Report 34, Reducing Child Deaths on European Roads. <http://bit.ly/2zOw8zt>

In the EU, on average, children below one year old represent around 2% of all road deaths under 18 years, the 1-4 year age group 13%, the 5-9 year age group 15%, the 10-13 age group 14% and the 14-17 age group 51%, as reflected in figure 4.



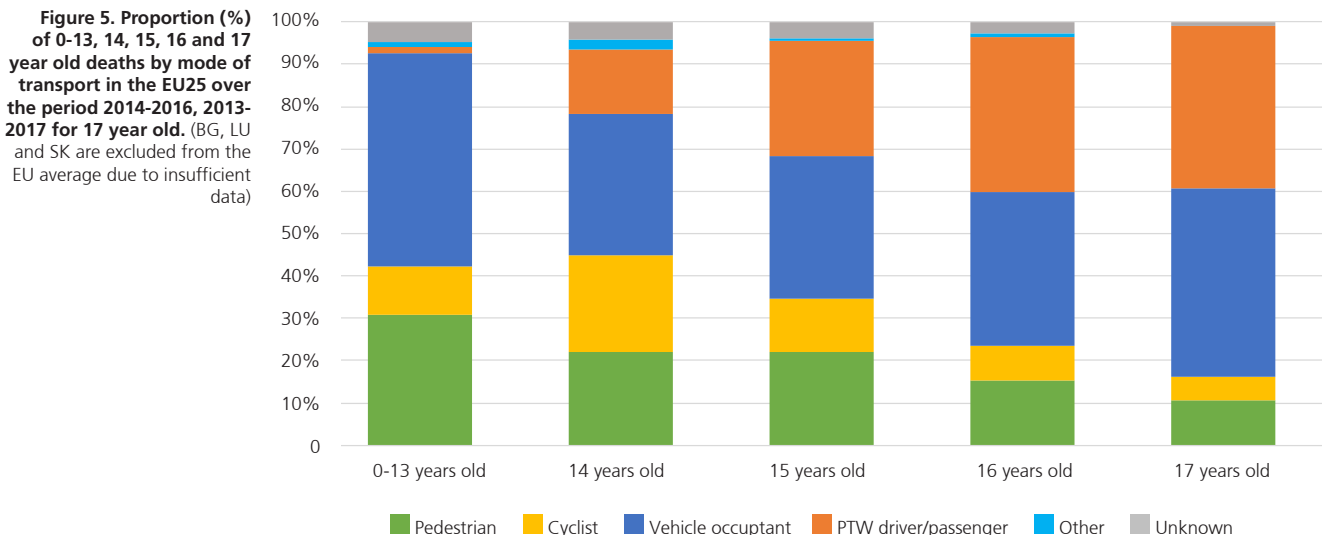
## 2.4 Modal Shift after 13 Years of Age

To illustrate the risk of death associated with changes in modal use with increasing age figure 5 shows the distribution of 0-13, 14, 15, 16 and 17 year old road deaths by mode of transport over the period 2014-2016 in 25 EU countries.

51% of 0-13 year old children die as car occupants, 31% as pedestrians and 11% as cyclists. Up to 14 years old, the ways in which children travel are often dictated by the choice of parents.

As from 14 years youngsters become more mobile and more independent road users. The proportion of powered two wheeler (PTW) user deaths starts to increase steeply at the age of 14. In several European countries driving licenses for mopeds can be obtained as of the age of 14.

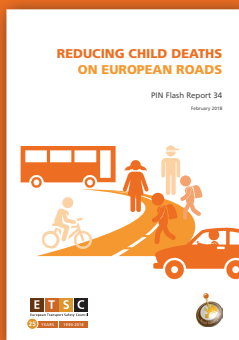
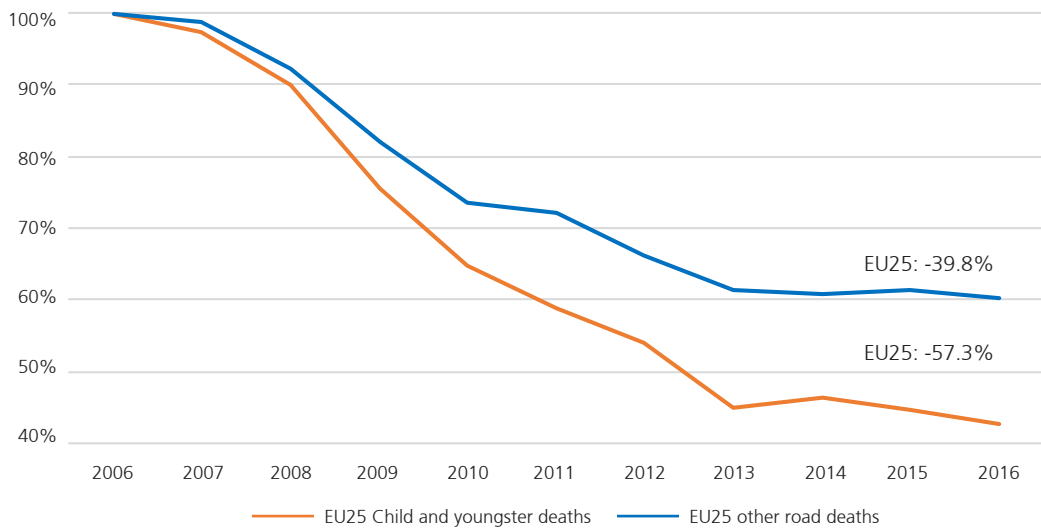
Powered two wheeler rider and passenger deaths represent 15% of all 14 year old, 27% of 15 year old, 37% of 16 year old and 38% of 17 year old road deaths.



## 2.5 Children and Youngsters are Safer Today than Ten Years Ago

Over the last decade, road fatalities amongst children and youngsters have decreased significantly in the EU. While 2,639 children and youngsters died on roads in the EU25 in 2006, the figure was 1,128 in 2016.<sup>15</sup> This represents a decrease of 57.3%, while other road deaths have only decreased by 39.8% over the same period.

**Figure 6. Relative development in the number of road deaths for persons under 18 years old and other road deaths in EU 25 over the period 2006-2016.** BG, LT and SK are excluded due to insufficient data.



For more information on the progress of improving child safety over the last decade as well as the main measures for reducing the risks to children read ETSC's PIN Flash report 34 (2018): "Reducing child deaths on European roads".

The report is available at <http://etsc.eu/PINFlash34>.

<sup>15</sup> Bulgaria, Lithuania and Slovakia are excluded from these figures due to insufficient data for the full period 2006-2016. 54 children and youngsters died on roads in Bulgaria in 2016 and 6 in Lithuania, bringing the total road deaths under 18 years in 2016 to 1188, as mentioned in the introductory paragraph of this chapter.

# PART III

## THE EU'S ROLE IN TRAFFIC SAFETY EDUCATION

Unlike for vehicle or infrastructure safety, the EU is not allowed to set rules or standards for traffic safety education. In line with Articles 6 and 165 of the Treaty on the Functioning of the European Union (TFEU)<sup>16</sup>, the EU may only carry out actions which support, coordinate or supplement the actions of the Member States and it has to respect their responsibility for the content of teaching and the organisation of the education systems.

While this explains why there are no dedicated EU laws on traffic safety education, it does not mean that traffic safety education is not addressed at all at EU level.

Two pieces of EU legislation for example do include educational targets, albeit indirectly. The Driving Licence Directive (2006/126/EC)<sup>17</sup> sets out minimum requirements for driving tests. While the exact content and form of the tests is left to the Member States, the Directive sets out which knowledge requirements should be covered in the tests and thereby indirectly sets educational targets. A similar argument could be made for Directive 2003/59/EC on the initial qualification and periodic training of drivers (the CPC Directive)<sup>18</sup>, as it sets minimum requirements for the knowledge and skills that professional drivers need to demonstrate.

The European Commission furthermore funded the ROSE 25 project in the early 2000s, which developed a good practice guide on road safety education.<sup>19</sup> The guide sets out ten steps for the successful implementation of road safety education in Member States, focusing on the institutional framework, the involvement of parents and teenagers, and the life-long learning concept. The tenth step on strengthening research, evaluation and quality control underlined, among others, the value of a common understanding of evaluation designs and a structured exchange between experts. The guide furthermore sets out examples and recommendations for actions focusing on certain target audiences.

The European Commission also funded the "AVENUE for Traffic Safety" project between 2010 and 2013. The project included: experiential training programmes for road safety education and a network of regional, national and local road safety knowledge centres, which were given access to specialised tools such as simulators.<sup>20</sup>

Nevertheless, road safety education is only sparsely addressed by the EU when compared to other areas of road safety. This is reflected in the European Commission's Strategic Action Plan on Road Safety<sup>21</sup>, which sets out its intended actions to improve road safety, including regulatory measures and the launch of studies. However, for education it merely seeks voluntary commitments from the education sector (for example by making road safety part of regular curricula) without outlining any specific action points.

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<sup>16</sup> European Union, Consolidated version of the Treaty on the Functioning of the European Union (TFEU). <http://bit.ly/2zQI97q>

<sup>17</sup> European Union, Directive 2006/126/EC on driving licences. <http://bit.ly/2UDoUa3>

<sup>18</sup> European Union, Directive 2003/59/EC on the initial qualification and periodic training of drivers. <http://bit.ly/2C6ixvN>

<sup>19</sup> ROSE25 (2005), Booklet Good Practice Guide On Road Safety Education. <http://bit.ly/2GeDJgi>

<sup>20</sup> AVENUE for Traffic Safety. <http://bit.ly/2s95PQc>

<sup>21</sup> European Commission (2018), Europe On The Move - Sustainable Mobility for Europe: safe, connected and clean. Annex I. <http://bit.ly/2RtiqZN>

# PART IV

# THE STATUS OF TRAFFIC SAFETY AND MOBILITY EDUCATION IN EUROPE

## 4.1 An Overview of Traffic Safety and Mobility Education in Europe

The responsibility for traffic safety and mobility education thus lies with the Member States in Europe. Without a unifying framework at European level, this raises the question of how Member States individually approach road safety education. Are there distinct differences and similarities to be found in their approaches?

This report presents a first overview of how traffic safety and mobility education is given in EU Member States (and other European countries – see box). The report highlights general trends in Europe, while giving examples of the countries' individual approaches. An overview per country for several of the overview's themes is set out in the annexes.



This report looks at all EU Member States, except for Romania for which no data were available. Belgium was divided into Flanders and Wallonia as road safety education is a community competence<sup>22</sup>, while the United Kingdom was similarly divided into England & Wales on the one hand, and Scotland on the other.<sup>23</sup> In addition to the EU's Member States, Albania, Bosnia Herzegovina's Republic of Srpska, Iceland, Kosovo<sup>24</sup>, Norway, Serbia and Switzerland provided data for this report.

ETSC, Fundación MAPFRE and VSV are grateful to the national experts who provided the information on which this overview of traffic safety and mobility education is based.

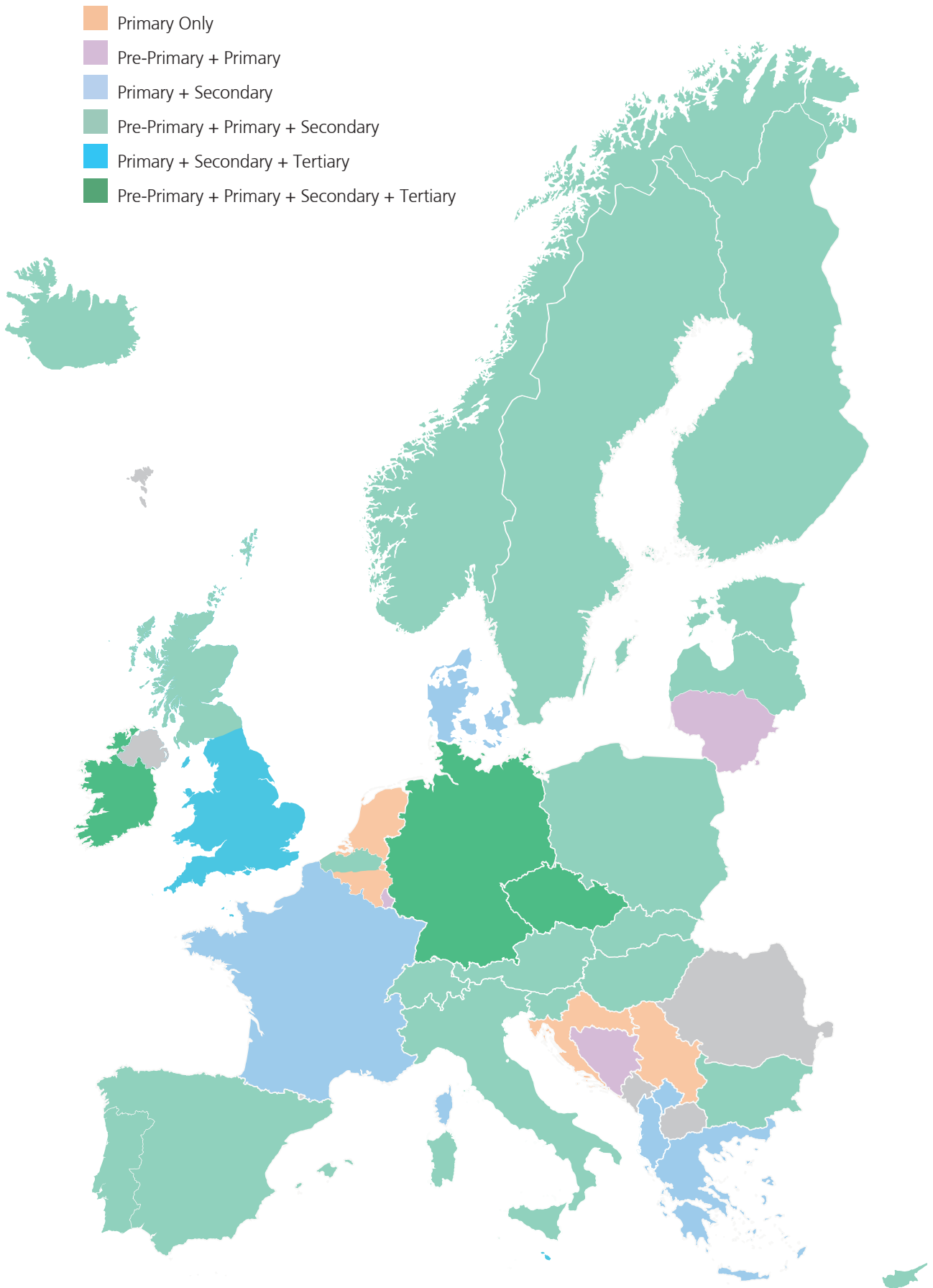


<sup>22</sup> In Belgium, the competence for education lies with the country's three community authorities (Flemish, French and German-speaking). Given the small size of the latter (80,000 inhabitants), we have chosen to focus on the situation in the Flemish and French communities. These are referred to as "Flanders" and "Wallonia" respectively in this report, although this is not fully correct political terminology.

<sup>23</sup> Northern Ireland has not been included in this report due to insufficient data.

<sup>24</sup> Throughout this report this designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ opinion on the Kosovo declaration of independence.

**Overview of the levels of education at which traffic safety and mobility education is given.**





#### 4.1.1 Traffic Safety and Mobility Education across Europe

Road safety education is given at primary schools in all European countries. For Croatia, the Netherlands, Serbia and Wallonia this is also the only level of education at which children are generally given road safety lessons. For the large majority (81%) of states, road safety education is also given at secondary schools, while in a slightly slimmer majority (69%) of states it is given at pre-primary education.

In Malta and England & Wales as well as in the Czech Republic, Germany and Ireland, traffic safety and mobility education is furthermore given at tertiary education, with the latter group representing the only three states in Europe where such education is given at every level of education.






In 21 states road safety education is given at three levels, with lessons given at pre-primary, primary and secondary levels being the most frequently used form (19 states).

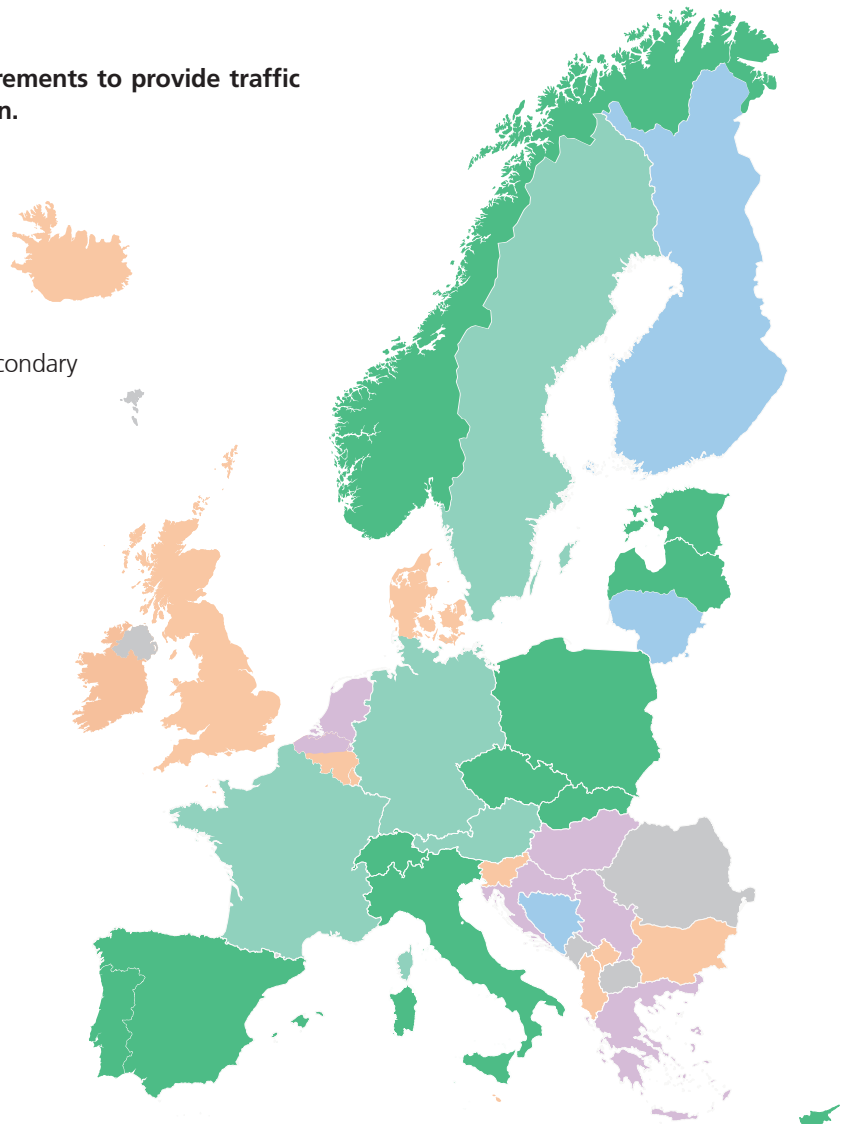
#### 4.1.2 Where is Traffic Safety and Mobility Education Required by Law?

While road safety education is given in all European countries, 12 states do not require schools to provide road safety education at any level by law. Most states (24) however require such education to be given at elementary schools.

15 states furthermore require road safety education to be given at secondary level, while 14 states require it at pre-primary. No state in Europe requires road safety education at tertiary level.

#### Overview of the legal requirements to provide traffic safety and mobility education.

-  No legal requirement
-  Primary
-  Pre-Primary + Primary
-  Primary + Secondary
-  Pre-Primary + Primary + Secondary





### *Responsibility for Traffic Safety Education*

#### **4.1.3 Who is Responsible for Traffic Safety Education?**

In most states (81%), the final responsibility for traffic safety education lies with the Ministry of Education. This responsibility is furthermore sometimes shared with other actors, for example with the Ministry of Transport (5), the police (5), a governmental agency (2) and non-governmental organisations (3). In Luxembourg, this responsibility is also shared with a commercial organisation.

In Finland and the Netherlands this responsibility lies with a governmental agency, such as the Finnish National Agency for Education. In Scotland, the governmental agency Transport Scotland is responsible for the co-ordination of national road safety education activities, while the implementation is the responsibility of Scotland's 32 local authorities. In England & Wales the responsibility for road safety education lies with the local highway authorities.

In Ireland, uniquely, the Ministry for Transport is the entity ultimately responsible, although in practice the Road Safety Authority is responsible for the implementation and delivery.

Only in Denmark and Sweden does no government authority have the final responsibility for road safety education, and instead responsibility is placed on respectively the school and the headmaster. However, while schools in Denmark are required to teach traffic safety education, this is not verified by any Ministry, resulting in a variety of efforts taken by the schools with some teaching it, while others do not.

In Germany, the responsibility for school education is with the Federal States. Only pre-school education as well as tertiary education is under the competence of the national level. With the aim to provide harmonised traffic education at school level, the Conference of Ministers of Education of the Federal States have however agreed on common basic rules related to the content and the quality of traffic education.<sup>25</sup>

#### **4.1.4 The Supply of Educational Material**



### *Supply of Educational Material*

Traffic safety education material is provided by more than one supplier in the vast majority of European states. Some publishing companies have specialised in the development of road safety and mobility teaching material and work closely with educational authorities. Road safety and mobility-related NGOs also develop teaching materials. In Germany, the Association of Accident Insurers as well as the insurance sector also develop teaching and learning materials.

In Croatia no separate educational material is provided as the topic is part of another subject at school. In Iceland and Lithuania the material is provided solely by the Ministry of Education, while in Latvia this is done by the Road Traffic Safety Directorate.

Greece's Institute of Education Policy has set up a website where teachers can download approved material from various organisations, such as the Ministry for Transport and RSI Panos Mylonas (an NGO).

Given that road safety education is given predominantly at primary and secondary levels of education, this report will focus in more detail on how education is given and organised at these two levels. However, the next section will first provide an overview of how teachers are educated on traffic safety and mobility issues.

#### **5.2 The Education of Teachers**

How traffic safety and mobility education is addressed during the education of teachers differs greatly across Europe. In Albania, the Netherlands and Switzerland it is only addressed to a very limited extent at teacher training colleges. There is also no regular provision of such education for teachers in France as well as England & Wales, although in the latter region local projects have tried to introduce this, albeit not consistently over time.

<sup>25</sup> Ständige Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland (2012), Empfehlung zur Mobilitäts- und Verkehrserziehung in der Schule. <http://bit.ly/2TFIG4Q>



## Education of Teachers

In the Czech Republic, Finland and Norway it depends on the college whether or not the teacher is trained in traffic safety and mobility education, while in Iceland and Serbia such training is offered as elective courses. Teachers in Germany receive some training during an internship period after having finalised their tertiary education.

In Cyprus, periodical seminars to train teachers are organised by the Pedagogical Institute. Non-mandatory seminars are also organised in Portugal, where accredited training activities have been developed for teachers of various levels of education, as well as in Greece, where training has been based on good practices from EU funded projects such as AVENUE for Traffic Safety.<sup>26</sup>

In Slovenia meetings for teachers are regularly organised, notably for those teachers who coordinate the cycling exam for fifth graders, while in Italy training is provided during information days.

Information is provided to teachers in Ireland, where stands with materials are available in tertiary education institutes, in Lithuania, where teachers receive updated methodological material, and in Scotland, where local governments' road safety teams deliver material adapted to the needs of the training college. Teachers in Ireland are also provided with road safety programmes that have been developed with the involvement of teachers.

In both Flanders and Wallonia, traffic safety and mobility education is not part of the curriculum. Nevertheless, non-mandatory training by different NGOs is offered in both communities of Belgium. In Denmark, trainee teachers receive a brief introduction to educational material provided by the Danish Road Safety Council.

Only in Poland and Slovakia is traffic safety included in teacher training programmes. In Poland, teachers giving road safety education need to complete a dedicated 18-month post-graduate course in 'techniques with elements of road safety education'. In addition, teachers who prepare pupils for a "bicycle licence" need to have completed a 1- or 2-day course. Although no such education exists yet in Hungary, a project is ongoing which would implement a module on the education of road safety.

### 4.3 Primary Education

#### 4.3.1 Time Spent Learning

Traffic safety and mobility education is not a dedicated subject at primary schools in the majority (72%) of states in Europe. A slighter larger majority of states (78%) do not mandate a minimum number of teaching hours by law.

Interestingly, out of the ten states in which road safety education is a dedicated subject, only Austria and the Czech Republic have also set a required minimum number of teaching hours. Conversely, a minimum number of hours is required in Albania, Republic of Srpska, Germany, Greece, Hungary and Slovakia, even though it is not a dedicated subject there.

The minimum number of teaching hours required by law varies significantly between states. While children in Hungary receive 6 lessons of 45 minutes per year, children in the Czech Republic receive 20 hours of road safety education per year, and in Republic of Srpska the number is 23 hours per year (and 40 hours for optional classes).

In Greece, the number of hours varies for the different grades. While grades 1, 3 and 4 receive road safety lessons for 1 hour per week during one trimester, this is 1 hour per week for the whole year for grade 2. Ten hours per year are furthermore given to Greek children in grades 5 and 6.



## Time Spent Learning

<sup>26</sup> AVENUE for Traffic Safety. <http://bit.ly/2s95PQc>

In states where there is no minimum hour requirement, the number of teaching hours also varies widely, both between states as well as within states. In the Netherlands children receive roughly 45 minutes of road safety education each week. Teachers in Lithuania dedicate 40 hours per year, teachers in Slovenia 25 hours, and teachers in Malta 10 to 20 hours.

In Cyprus, 10 to 15 sessions of 45 minutes are given each year, while the topic is addressed at most one hour a month in France and Latvia. In Luxembourg one activity a year is dedicated to road safety, while in Iceland an expert provides an hour of road safety education each spring, after which the teacher continues the lessons.

In Flanders, children have on average 20 hours of road safety education each year, however this varies considerably by school, as is the case in Belgium's other community, Wallonia, where it varies from 10 days a year to none at all. Although there is a big variety in the amount of road safety lessons in Denmark, these lessons are primarily given to the youngest pupils and much less to the older.

It also varies a lot across Sweden, as it is up to the school's headmaster to decide how much time is reserved for teaching children about road safety. The same decision is left to the teachers in Portugal and Poland. Moreover, teachers in the latter state remarked that the time currently dedicated to the topic was limited and they would like to have more time for it, especially in grades where the "bicycle licence" programme is given.

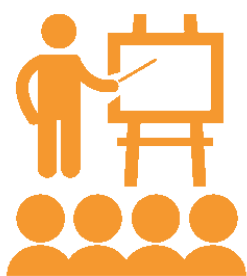
In seven states it was unknown or too difficult to estimate how many hours of road safety education was given on average in elementary schools. For example, teaching hours in Norway are decided for the whole year and cover all main subject areas, basic skills and competence aims. Therefore, as the schools are supposed to work interdisciplinary, it is impossible to report how many lessons per year or per month are given for one single topic within the subject. In Norway they underline the importance of also giving traffic education when the children are outdoors, either playing in the neighbourhood or going on a trip.

Similarly, for Estonia and Kosovo it was also not possible to estimate the average amount of hours spent on traffic safety and mobility education, as the subject is integrated in other subjects. This is similar to Germany, where mobility and road safety education is integrated into the syllabus in primary schools, but with different amount of hours depending on the Federal State.

#### **4.3.2 Structure of the Lessons and Exams**

The traffic safety education lessons contain both theoretical and practical elements in almost all states in Europe, except for Albania, Kosovo, Latvia and Portugal, where only theoretical lessons are given. Nowhere in Europe is road safety education given only through practical lessons.

Exams are not held for road safety education in the majority of European states (67%). Albania and Kosovo do have written exams, while Wallonia, the Czech Republic, and Lithuania hold practical exams. Children in Flanders, Germany, the Netherlands, Poland, Slovakia, Slovenia and Switzerland have both a written and practical exam. In Norway, 70% of the schools use the NCRS' educational bicycle learning resources, including the "cycling test", however this is not considered an exam.



#### *Structure of the Lessons and Exams*

### 4.3.3 What Do Children Learn?

The topics generally addressed in elementary schools across Europe can be defined in two broad categories: traffic rules and safe behaviour.



#### *Traffic Rules and Safe Behaviour*

In most states, children are taught about the traffic rules and the meaning of traffic signs when they are in elementary school. Most children across Europe also receive lessons in safe behaviour on the road focussing primarily on behaving safely as a pedestrian and cyclist, including lessons on how to cross the road safely. Several countries also focus on how to behave safely using public transport and as a passenger in a car.

Lessons are furthermore dedicated to how to get safely from home to school in Bulgaria, Iceland, Germany, Luxembourg, Norway, Poland, Serbia and England & Wales. In Finland, Germany and Sweden, the road safety of their local neighbourhood is focused on during the lessons.

Children also learn how to recognise the risks on the roads as well as how to deal with them in Austria, Flanders, Denmark, Hungary, Iceland, Ireland, Lithuania, the Netherlands and Serbia. The use of protective as well as safety equipment is furthermore taught to children at elementary schools in Finland, Poland and Serbia.

A differentiation between age groups in primary education is also made in several states. For example, young children in elementary schools in Denmark are trained in being a safe pedestrian, while pupils of 11 and 12 years of age receive bicycle training. In Scotland, the younger children are, amongst others, taught to wear a seatbelt and crossing roads safely, while for older primary school children the focus is more about not being distracted while on the road, making the safest choice possible and dealing with peer pressure.

In Germany, the former “road safety” education moved into a broader “mobility” education taking into account not only the safety aspects, but also sustainability and environment, social competence and independent mobility.

### 4.3.4 Educational Goals

Educational goals and/or objectives for traffic safety and mobility education are set in a majority of states (64%). Across the EU, these goals follow the topics taught in class and can therefore also be generalised in objectives on understanding traffic rules and signs on the one hand, and objectives on acquiring the skills and knowledge necessary to behave safely in traffic as a pedestrian, cyclist or passenger on the other hand.

In Flanders for example, educational objectives are already set at pre-primary education level (kindergarten), with goals set to recognise in their surroundings where they can play safely and where not, to realise that traffic involves risks and to be able to apply elementary traffic rules under supervision.

For primary education, the objectives in Flanders are split into traffic education objectives and mobility education objectives. The former includes the goals of identifying dangerous traffic situations in the wider school environment, having the necessary skills and understanding of traffic rules to be able to move independently and safely as a pedestrian and cyclist on familiar routes, and showing a willingness to take into account other road users.

The goals for mobility education at primary schools in Flanders include that the pupils know the most important consequences of the growing use of cars, to be able to compare the pros and cons of possible alternatives, and that they are able to plan a simple route with public transport.



#### *Education Goals*

In Finland, the goals for first and second graders amongst others focus on the pupils' independent and safe mobility in their surroundings and improving skills and knowledge as pedestrians and cyclists. During the third to sixth grades, the goal is to widen the children's independent mobility to a larger area and to include public transport. Special focus is placed on their safe cycling skills and ensuring their own and other people's safety.

The required outcomes as defined in the road safety curriculum in Serbia for grades 1 through 4 include that children behave safely when walking from home to school, and understand that the road and the pavement are not play areas.

For fifth grade the goals include the ability to make a distinction between safe and unsafe behaviour of pedestrians, cyclists and vehicles, to behave properly as a road user, to use protective equipment while riding a bicycle and to understand the necessity of wearing a seat belt, as well as acting responsibly as a passenger and showing respect to other road users.

Sixth graders in Serbia also have to understand the connection between good infrastructure and the safety of its users, and demonstrate correct and safe behaviour as pedestrians and cyclists in a mock-up road layout and/or via computer simulation.

In Norway there are specific competence aims related to physical education, in which the aim of the training is to enable the pupil to comply with traffic rules for pedestrians and bicyclists after the fourth grade and to enable the pupil to ride a bicycle safely as a means of transport after the seventh grade. In addition, the pupil has to explain why physical activity is important in everyday life.

#### **4.3.5 Who Provides the Lessons?**

It is common across Europe that the lessons could be given by different entities in primary education. In the majority of states (67%), the teacher responsible for the class usually give the road safety lessons to the children, while in 15 states a teacher responsible for a certain subject may give the lessons.



#### **Who Provides the Lessons**

Only in Denmark is a dedicated teacher for traffic safety and mobility education a possibility. While the teacher in Switzerland is also a teacher dedicated to the subject, this is mostly a police officer. Police officers furthermore provide lessons or assistance in Austria, Belgium, Cyprus, France, Germany, Poland, Portugal and Serbia. While primary school teachers in Germany give the general mobility and safety lessons, the cycling training and exam are done by police officers who are specially trained.

It is also common that the lessons are given by external experts, which include the previously mentioned police officers. This is the case in 61% of the European states. In roughly half these cases, the external experts are not paid for the lessons they give. In Iceland and Portugal the schools themselves pay for the external experts, and while this is also the case for Belgium and the Netherlands, governmental authorities in those states share this burden with the schools. Governmental authorities in Hungary and Ireland solely carry the costs for the external expert in their schools.

The Road Safety Authority in Ireland provides a National Road Safety Education Service where ten dedicated Road Safety Promotions Officers visit each school in a three year cycle.

External interventions in France are mainly made on a voluntary basis, while certain experts in Denmark also provide their lessons for free. In Cyprus and Greece, the external experts belong to a non-profit organisation, which in turn receives subsidies from sponsors for various activities, which could include traffic safety lessons at schools.

## 4.4 Secondary Education

This section sets out the status of traffic safety and mobility education in the 29 European states where it is generally given at secondary levels. As this type of education is generally not given in the remaining seven, they have not been included in this analysis.

### 4.4.1 Time Spent Learning

Road safety education is a dedicated subject at secondary schools only in France, Iceland, Italy, Norway and Switzerland. None of these countries however have a minimum legal requirement for the amount of hours that the subject should be given at secondary schools. Such a requirement is only found in Albania (12 hours per year), Cyprus (eight 45 minute lessons per year), and Slovakia.

Of the states where there is no legal minimum requirement, only in Latvia do pupils receive traffic safety education once a month. In Greece, a 'thematic week' has been introduced for the first three grades of secondary school, during which the teacher can choose out of four subjects related to health, including traffic safety. For the latter three grades in Greece's secondary education, traffic education activities are also a possibility during a dedicated teaching day in the last four months of the school year.

In the other states it is less structured and furthermore not well known. In France for example, pupils receive generally less than four hours of road safety education per year, however they do not receive lessons every year. While French pupils between 11 and 15 have two compulsory theoretical exams, the teachers are not required to prepare the pupils for these exams. In addition, a half-day road safety awareness training is compulsory in high schools and apprentice schools, although no exam is taken at the end of the training.

Pupils in Iceland may have two days of road safety education in spring as well as a few trips where traffic rules are reviewed. In both Flanders and Slovenia, the amount differs greatly from school to school, with 1 to 2 days generally given in Flanders, and lectures lasting between one and six hours given in Slovenia.

In Austria and Portugal, the amount of road safety education is decided upon by the teachers, while in Denmark, Hungary and Malta this depends on the school. Also in Sweden there is a lot of variation between schools across the country.

For Bulgaria, Estonia, Kosovo, and Poland it was difficult to estimate how many hours of education was given to pupils, as the subject was integrated in other subjects. It was similarly difficult to estimate it for Finland, because the subject is generally offered as an optional course.

Also for Norway it was difficult to estimate how many hours of traffic education are generally given, as pupils can choose an elective course on road safety and traffic in addition to their normal curriculum. If chosen, the pupil would have two hours of classes per week, however it is up to the school to decide which choice of subjects they want to offer to the pupils. The course can furthermore be set up in a way that would allow pupils to take the first part of their driving licence trajectory as part of the subject. Schools would however have to follow the provisions of the Traffic Training Regulation in such case.



*Time Spent  
Learning*

#### 4.4.2 Structure of the Lessons and Exams

Contrary to primary education, the traffic safety and mobility education lessons at secondary level are solely theoretical in the majority of states (16), while in the other 13 states it is both theoretical as well as practical. Nowhere in Europe are only practical road safety lessons given to pupils in secondary schools.

No exams are taken in 25 of the 29 states where traffic safety and mobility education is generally given at secondary level. While a written test is conducted in Albania, France and Kosovo, only in Slovakia do pupils have written as well as practical exams.

#### 4.4.3 What Do Youngsters Learn?

Knowledge on traffic rules, safe behaviour (as a pedestrian, cyclist, passenger and public transport user) as well as recognising and avoiding risks remain important topics taught at secondary schools.

A significant amount of states furthermore address the risks and challenges of being a young driver, including the risks of speeding as well as driving under the influence of alcohol and drugs. The danger of distraction, notably by smartphones, is also addressed, not only in the context of being a young driver, but also as a pedestrian, cyclist or rider. Austria, Flanders, Finland, France, Germany, Italy and Latvia furthermore focus specifically on driving mopeds safely as well.

Pupils in Denmark, France, England & Wales as well as Scotland receive lessons in recognising the effects of peer pressure and dealing with the pressure to take high-risk actions by saying no.

Children in Cyprus furthermore examine statistical data on road accidents and develop proposals for improving the safety of young road users, while sustainable mobility concepts are introduced to pupils in Greece.

Sustainable mobility also features prominently in Germany, where pupils are given lessons in amongst others alternatively powered engines and technologies, the economic and environmental aspects of mobility, as well as the development and design of future-oriented sustainable mobility.

#### 4.4.4 Educational Goals

Educational goals and/or objectives for road safety education are only set in 14 out of the 29 states where traffic safety and mobility education is generally given at secondary level. Out of those 14 states, the Czech Republic, Latvia, Poland, Portugal and Slovakia furthermore set different educational goals and/or objectives for different levels of education, i.e. traffic education differs for students preparing for vocational school compared to those preparing for university.

In Flanders, only general objectives for road safety education at secondary level are set in the framework of personal health and safety goals, and include being able to apply traffic rules and using personal and public transport safely. The objectives are however not binding and furthermore no exam is taken to verify they are met.

While all pupils in Cyprus' secondary schools should develop appropriate behaviour on the road, be able to provide first aid and be able to judge the human, social and cultural factors contributing to collisions, different additional objectives are set for the first three years of secondary education and the last three years.



### What Do Youngsters Learn?



During the first three years, 12- to 14-year-olds are expected to develop the abilities to identify and evaluate factors causing collisions as well as the means to protect themselves, to behave safely with others in their daily environment, and to engage with personal and collective actions to prevent, reduce or even eliminate road collisions. During the last three years, 15- to 18-year-olds are also expected to identify the factors that could affect their behaviour as a pedestrian, cyclist, passenger and as a future young driver.

In Norway, specific competence aims for after the tenth grade are set and are related to the natural sciences subject curriculum, elaborating on how traffic safety equipment prevents and reduces injuries in collisions.

In Denmark, no formal objectives are established by a Ministry. However, the Danish Road Safety Council does provide schools with a chart on the theory of change that includes objectives as expected outcomes.

### THEORY OF CHANGE: LIVE INTERVENTION

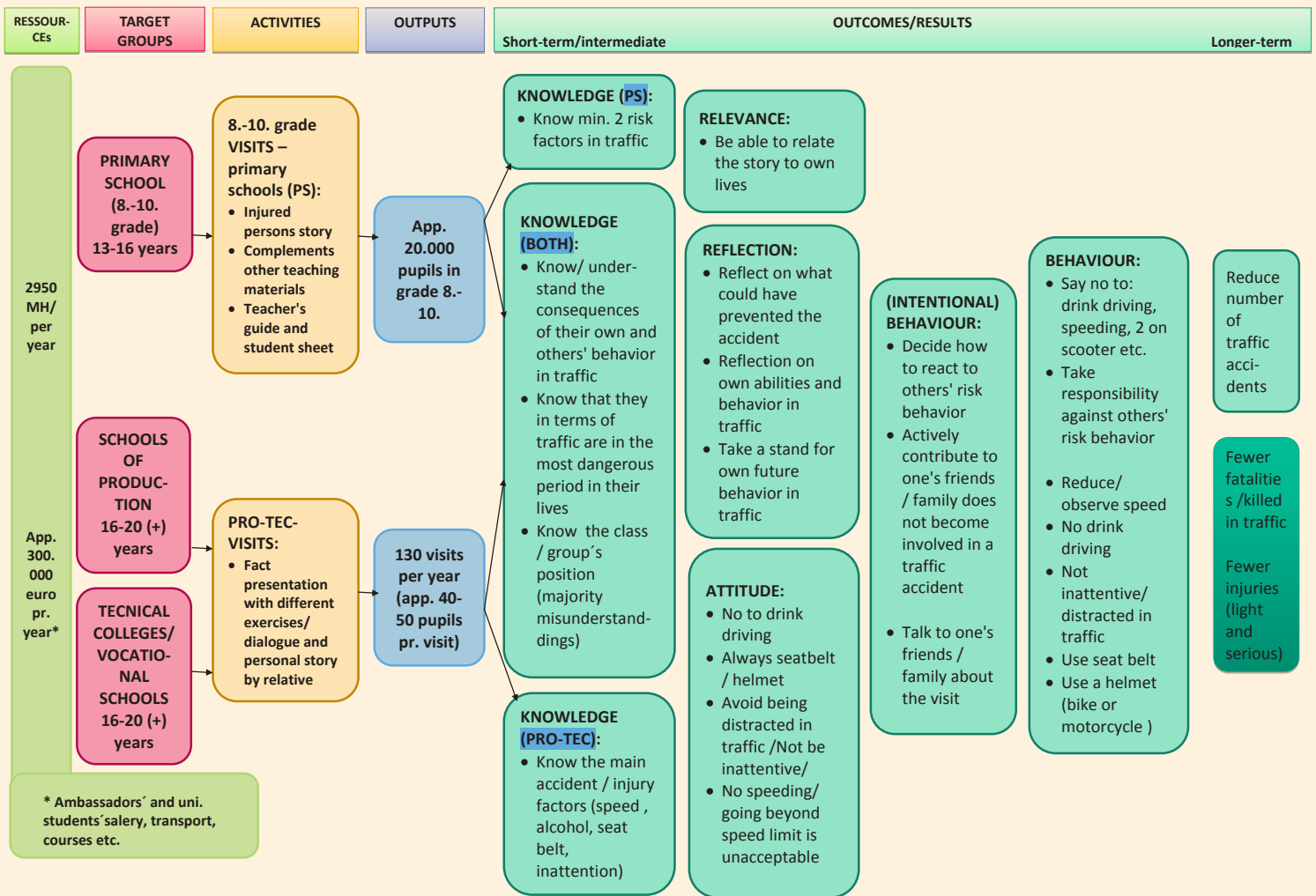


Figure 7. Theory of Change chart for interventions (Danish Road Safety Council)

#### **4.4.5 Who Provides the Lessons?**

Traffic safety and mobility education is also given by different entities in secondary education, and in 11 states it could be given by different actors. For example, the lessons in Iceland and Italy could be given by the teacher responsible for the class, the teacher responsible for a certain subject or by an external expert.

It is common for the teacher responsible for a certain subject to provide road safety education in 15 states, while in 10 states the teacher responsible for the class could give such education. Only in Norway and Switzerland would a dedicated traffic safety and mobility education teacher provide the lessons. However, in Switzerland this is usually a police officer.

External experts provide road safety lessons in 14 states. In Italy, Malta, Poland, Spain and Sweden, such an external expert would not be paid for the lessons, while in Iceland and Portugal the schools pay the external experts. Ireland and Slovakia are the only states where the relevant ministry would pay the external expert to give such lessons, while Switzerland is the only state in which the police sometimes fund the lessons by the external expert.

The lessons in Denmark are free if the external expert is provided by the Danish Road Safety Council, however if provided by other experts a cost could be charged. In Slovenia, the police or governmental agencies provide such lessons for free, while experts from non-governmental organisations would be paid for the lessons provided. In Flanders, the funding for external experts is shared between the school and VSV as the governmental agency, while in Cyprus and Greece the external experts belong to a non-governmental organisation which in turn may be subsidised by sponsors to provide such lessons to schools.

In Greece, an external expert is usually invited by the teacher who has undertaken the responsibility to teach or coordinate traffic education in one or different grades and classes, with the associated costs for implementing the educational programmes usually covered by governmental agencies and municipal authorities as well as private sponsors.

The ten previously mentioned dedicated Road Safety Promotions Officers in Ireland also visit each secondary school in a three-year cycle.

# PART V

## MOBILITY EDUCATION: LINKING TRAFFIC SAFETY WITH SUSTAINABILITY AND HEALTH

In many European countries, health and environmental topics are high on the agenda as themes treated in the educational curriculum. Since traffic safety is essentially a public health issue and mobility choices have an impact on both the environment and public health, this chapter offers a wider perspective on traffic safety and mobility education.

Most countries also promote sustainable mobility choices. From a policy point of view, it makes sense to integrate sustainable mobility and road safety measures, including education, to encourage the use of active transport modes by children and youngsters while at the same time increasing their safety as vulnerable road users. In the following sections we will give a short overview of international policies, study findings and recommendations related to these topics.

### 5.1 Road Safety and Sustainable Mobility: International Policies

In September 2015, the United Nations General Assembly adopted a number of Sustainable Development Goals (SDGs). The SDGs address global challenges such as climate and environmental degradation but also the risk of death in road traffic.<sup>27</sup>

Two of the SDG targets are specifically related to road safety: target 3.6 aims to halve the number of global deaths and injuries from road traffic accidents by 2020 and target 11.2 seeks to provide access to sustainable and safe transport systems, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons. In line with the Global plan for the decade of action for road safety 2011–2020<sup>28</sup>, the World Health Organization (WHO) proposed a number of actions to improve road safety, including measures to protect vulnerable road users and to promote physically active transport modes such as walking and cycling.<sup>29</sup>

At the European level, the European Commission acknowledged that EU transport policy should aim at ensuring sustainable mobility for all citizens, “decarbonising” transport and making full use of technological progress.<sup>30</sup> The European Commission’s 2011 Transport White Paper recognised that in urban areas, walking and cycling, together with public transport, often provide better alternatives not only in terms of emissions, but also of speed: they could readily substitute the large share of trips which cover less than 5km. The European Commission therefore stressed that facilitating walking and cycling should become an integral part of urban mobility and infrastructure design.<sup>31</sup>

<sup>27</sup> United Nations (2015), <http://bit.ly/2C7ONHO>; World Health Organization Europe (2017). <http://bit.ly/2BaBNzG>

<sup>28</sup> UN Road Safety Collaboration (2011), Global plan for the decade of action for road safety 2011–2020. <http://bit.ly/2B8Svzo>

<sup>29</sup> World Health Organization Europe (2017), Road Safety. Fact sheets on sustainable development goals: health targets. <http://bit.ly/2BaBNzG>

<sup>30</sup> European Commission (2010), Towards a European road safety area: policy orientations on road safety 2011–2020. <http://bit.ly/2QrAsPp>

<sup>31</sup> European Commission (2011), White Paper: Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system. <http://bit.ly/2rw8yTD>

In 2015, the EU ministers of transport adopted a declaration on cycling as a climate friendly transport mode.<sup>32</sup> The European Commission is working on further integrating cycling into transport policy by giving more attention to increased road safety in relation to cycling, by encouraging cities to adopt Sustainable Urban Mobility Plans (SUMPS) which should address cycling and walking, and by supporting a wide range of programmes and expert groups aiming to increase the modal share of cycling in European cities.<sup>33</sup>

The European Commission is aware that real or perceived road safety risks remain a decisive obstacle for many potential cyclists and pedestrians. As national and local governments are increasingly involved in promoting cycling and walking, this will require that more and more attention is paid to road safety issues for these modes of transport.<sup>34</sup>

## 5.2 Active Transport and Health

### 5.2.1 Physical Activity and Healthy Lifestyle

The WHO has set out global recommendations on physical activity for health.<sup>35</sup> Different types and amounts of physical activity are required for different health outcomes. The WHO recommends that children and youngsters aged 5–17 years old should accumulate at least 60 minutes of moderate to vigorous physical activity daily. Adults aged 18–64 years should do at least 150 minutes of moderate or 75 minutes of vigorous physical activity (or an equivalent combination of both) throughout the week.<sup>36</sup> Active transport modes such as walking and cycling are examples of moderate physical activity that can contribute to a healthy lifestyle.

Studies undertaken to assess the economic benefits of walking and cycling have shown that active mobility brings both physical and mental health benefits that largely outweigh possible increased exposure to pollution or safety risks. It has been shown that replacing regular car trips by either regular cycling trips (e.g. commuting trips of 5 km each way) or regular walking trips (e.g. pedestrian commuting trips of 2.5 km each way) brings a net benefit of around EUR 1 000 for every person who decides to switch from using a private car to an active form of mobility.<sup>37</sup>

### 5.2.2 Health Effects of Walking

Current evidence suggests that moderate intensive physical activity, including walking, is essential for maintaining good health, while a sedentary lifestyle contributes to reduced health outcomes at different levels.<sup>38</sup> Indirect benefits may include those resulting from the substitution of trips undertaken by car with trips undertaken on foot (particularly short distance urban trips, and trips where the combination of walking and use of public transport is possible). Replacing car use by public transport also results in a reduction in negative environmental and health-related consequences<sup>39</sup>, including air and noise pollution.

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<sup>32</sup> EU ministers for Transport (2015), Declaration on Cycling as a climate friendly Transport Mode. <http://bit.ly/2Bd9ssl>

<sup>33</sup> European Commission. Clean transport, urban transport. <http://bit.ly/2ry5gPx>

<sup>34</sup> European Commission (2010), Towards a European road safety area: policy orientations on road safety 2011–2020. <http://bit.ly/2QrAsPp>

<sup>35</sup> World Health Organization (WHO) (2010), Global recommendations on physical activity for health. <http://bit.ly/2EtWwBW>

<sup>36</sup> OECD/ITF (2012), Pedestrian Safety, Urban Space and Health. <http://bit.ly/2QUs4aN>

<sup>37</sup> Rabl A, & de Nazelle A (2011), Benefits of Shift from Car to Active Transport. In: OECD/ITF (2012). <http://bit.ly/2QUs4aN>

<sup>38</sup> Cavill N, Kahlmeier S, Racioppi F (2006); US Department of Health and Human Services (1996); Warburton et al. (2010); World Health Organization (WHO) (2010).

<sup>39</sup> Dora C, Philips M (2000), Transport, environment and health. <http://bit.ly/2QpaJql>

The OECD's International Transport Forum (ITF) concluded that walking is a physical activity for persons of all ages that can be incorporated as part of everyday life, providing great health benefits for the population as a whole. It therefore has great potential to contribute to high level government agendas for more sustainable development. Ensuring that walking is an attractive alternative and complement to motorised transport is a core response to the challenges of climate change, fossil fuel dependency, pollution, maintaining mobility for an ageing population, and health, amongst others.<sup>40</sup>

### 5.2.3 Health Effects of Cycling

According to an ITF report on Cycling, Health and Safety, a discussion of the impact of cycling on road safety should not be isolated from a broader discussion of the overall health impacts of cycling. The concern that increasing the number of cyclists may increase crash numbers or risks, results from the deleterious effects of crashes on cyclists' health. However, collisions are not the only factor that affect cyclists' health – exposure to air pollution can negatively impact cyclists' health just as cycling-related exercise can (greatly) improve it.<sup>41</sup>

ITF stressed that cycling can greatly reduce clinical health risks linked to cardiovascular disease, obesity, Type-2 diabetes, certain forms of cancer, osteoporosis and depression. This health-improving effect is robust across different studies and in different geographical contexts, and is greatest when moving from largely sedentary lifestyle patterns to more active ones. There is evidence that the range of morbidity-reducing effects is even greater than that of mortality-reducing effects – not only does cycling reduce disease-related deaths but it also contributes to substantially better health.<sup>42</sup>

For large European cities, it was found that the positive health gains for an individual resulting from a switch from car to bicycle commute on average add up to €1343 per year. The negative health impacts, including those linked to crash-related mortality, result in a loss of €72/year – 19 times less than the benefits.<sup>43</sup> The principal finding that health benefits from cycling dwarf all other variables is robust to a range of assumptions regarding specific variables and monetary values.<sup>44</sup>

ITF concluded that the positive health impacts of cycling far outweigh the negative health impacts. Reviewing evidence from studies looking at the full spectrum of cyclist health impacts (including crash-related injuries and air pollution) while controlling for exposure and crash under-reporting indicates that the estimated health benefits of cycling are several orders of magnitude greater than the health dis-benefits of cycling.<sup>45</sup>

## 5.3 Sustainable Mobility and Road Safety Measures should go Hand in Hand

The fact that pedestrians and cyclists are vulnerable in traffic does not mean that walking and cycling should be discouraged as unsafe transport modes. It is important to remember that they account for much larger proportions of journeys made and time spent using the roads. Increasing numbers of pedestrians and cyclists can result in 'safety in numbers' reducing overall risk as well as risk for individuals.<sup>46</sup>

Moreover, cyclists and pedestrians do not endanger other road users as much as car drivers do because of their lower speed and mass. So shifting a substantial proportion of short-distance car trips to walking, cycling and public transport can, if accompanied by measures to reduce the risks of walking and cycling, increase overall road safety. As active travel is being encouraged for health, environmental, congestion and other reasons, the safety of active transport modes must be addressed urgently.<sup>47</sup>

<sup>40</sup> OECD/ITF (2012), Pedestrian Safety, Urban Space and Health. <http://bit.ly/2QUs4aN>

<sup>41</sup> OECD/ITF (2013), Cycling, Health and Safety. <http://bit.ly/2QSM1Pe>

<sup>42</sup> OECD/ITF (2013), Cycling, Health and Safety. <http://bit.ly/2QSM1Pe>

<sup>43</sup> Rabl A, & de Nazelle A (2012), Benefits of shift from car to active transport. In: OECD/ITF (2013).

<sup>44</sup> OECD/ITF (2013), Cycling, Health and Safety. <http://bit.ly/2QSM1Pe>

<sup>45</sup> OECD/ITF (2013), Cycling, Health and Safety. <http://bit.ly/2QSM1Pe>

<sup>46</sup> ETSC (2013), Integrating Safety into the EU's Urban Transport Policy. <http://bit.ly/2EgVjJ5>

<sup>47</sup> ETSC (2016), The European Union's role in promoting the safety of cycling. Proposals for a safety component in a

Transport safety should therefore be considered as an essential component of sustainable mobility and mobility planning. In attempting to secure change in urban mobility patterns, road safety can be regarded as a critical challenge, largely because of the social and economic cost of road collisions. As such, safety should be tackled at all levels of mobility planning. Real and perceived safety can have a profound effect on modal choice especially in terms of the most sustainable modes of travel – walking and cycling - and ability to access public transport.<sup>48</sup>

When it comes to cycling, it has been proven that where pro-cycling and pro-safety policies are deployed hand-in-hand, an increase in ridership can be accompanied by a concomitant reduction of injury risk. For example, in Copenhagen, bicycle travel increased by 20% between 1996 and 2010 while at the same time police-reported fatalities and serious injuries have dropped by 70%.<sup>49</sup>

To increase the safety of pedestrians and cyclists, one of the recommendations is to develop a policy of modal priority for road users, particularly in urban environments: the hierarchy being based on safety, vulnerability, and sustainability. Pedestrians should be at the top of the hierarchy, followed by cycling and public transport.<sup>50</sup> In general, authorities seeking to improve the safety of vulnerable road users should adopt the Safe System approach: policy should focus on improving the inherent safety of the traffic system, not simply on securing marginal improvements for pedestrians and cyclists in an inherently unsafe system.<sup>51</sup> This approach is endorsed by the European Commission.<sup>52</sup>

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future EU Cycling Strategy. <http://bit.ly/2UD06iD>

<sup>48</sup> ETSC (2013), Integrating Safety into the EU's Urban Transport Policy. <http://bit.ly/2EgVyJ5>

<sup>49</sup> OECD/ITF (2013), Cycling, Health and Safety. <http://bit.ly/2QSM1Pe>

<sup>50</sup> ETSC (2013), <http://bit.ly/2EgVyJ5>; ETSC (2015). <http://bit.ly/2Bcn86Z>

<sup>51</sup> OECD/ITF (2012) <http://bit.ly/2QUs4aN>; OECD/ITF (2013) <http://bit.ly/2QSM1Pe>

<sup>52</sup> European Commission (2013), First milestone towards an injury strategy. <http://bit.ly/2BsiADk>

# ANNEX I

## Levels of Education at Which Traffic Safety and Mobility Education is Generally Given

	Pre-Primary	Primary	Secondary	Tertiary
Albania				
Austria				
Belgium (Flanders)				
Belgium (Wallonia)				
Bosnia Herzegovina (Republic of Srpska)				
Bulgaria				
Croatia				
Czech Republic				
Cyprus				
Denmark				
Estonia				
Finland				
France				
Germany				
Greece				
Hungary				
Iceland				
Ireland				
Italy				
Kosovo				
Latvia				
Lithuania				
Luxembourg				
Malta				
Netherlands				
Norway				
Poland				
Portugal				
Serbia				
Slovakia				
Slovenia				
Spain				
Sweden				
Switzerland				
UK (England & Wales)				
UK (Scotland)				

# ANNEX II

## Legal Requirement to Provide Traffic Safety and Mobility Education

	No legal requirement	Pre-Primary	Primary	Secondary	Tertiary
Albania					
Austria					
Belgium (Flanders)					
Belgium (Wallonia)					
Bosnia Herzegovina (Republic of Srpska)					
Bulgaria					
Croatia					
Czech Republic					
Cyprus					
Denmark					
Estonia					
Finland					
France					
Germany					
Greece					
Hungary					
Iceland					
Ireland					
Italy					
Kosovo					
Latvia					
Lithuania					
Luxembourg					
Malta					
Netherlands					
Norway					
Poland					
Portugal					
Serbia					
Slovakia					
Slovenia					
Spain					
Sweden					
Switzerland					
UK (England & Wales)					
UK (Scotland)					



# ANNEX III

## Entities Responsible for Traffic Safety and Mobility Education

	Ministry of Education	Ministry of Transport	Governmental Agency	Police	NGO	Commercial Organisation	Other
Albania							
Austria							
Belgium (Flanders)							53
Belgium (Wallonia)							
Bosnia Herzegovina (Republic of Srpska)							
Bulgaria							
Croatia							
Czech Republic							
Cyprus							
Denmark							54
Estonia							
Finland							
France							
Germany							
Greece							
Hungary							
Iceland							
Ireland							
Italy							
Kosovo							
Latvia							
Lithuania							
Luxembourg							
Malta							
Netherlands							
Norway							
Poland							
Portugal							
Serbia							
Slovakia							
Slovenia							
Spain							
Sweden							55
Switzerland							
UK (England & Wales)							56
UK (Scotland)							57

<sup>53</sup> In Flanders there is a shared responsibility: the Ministry of Education is responsible for the curriculum, the Ministry of Transportation for the funding, and a non-governmental organisation (VSV) for the execution.

<sup>54</sup> In Denmark, the schools themselves have the final responsibility.

<sup>55</sup> In Sweden, the headmasters have the final responsibility, if the school provides traffic safety and mobility education.

<sup>56</sup> In England and Wales, the local highway authorities (local government) carry the statutory responsibility.

<sup>57</sup> In Scotland, governmental agency Transport Scotland is responsible for the co-ordination of national road safety education activities, while the implementation is the responsibility of Scotland's 32 local authorities.

# ANNEX IV

## Primary Education

	Dedicated Subject		Lesson Format			Exams				Educational Goals	
	Yes	No	Only theoretical	Only practical	Both	None	Written	Practical	Both	Yes	No
Albania											
Austria											
Belgium (Flanders)											
Belgium (Wallonia)											
Bosnia Herzegovina (Republic of Srpska)											
Bulgaria											
Croatia											
Czech Republic											
Cyprus											
Denmark											
Estonia											
Finland											
France											
Germany											
Greece											
Hungary											
Iceland											
Ireland											
Italy											
Kosovo											
Latvia											
Lithuania											
Luxembourg											
Malta											
Netherlands											
Norway											
Poland											
Portugal											
Serbia											
Slovakia											
Slovenia											
Spain											
Sweden											
Switzerland											
UK (England & Wales)											
UK (Scotland)											

# ANNEX V

## Secondary Education

	Dedicated Subject		Lesson Format			Exams				Educational Goals	
	Yes	No	Only theoretical	Only practical	Both	None	Written	Practical	Both	Yes	No
Albania											
Austria											
Belgium (Flanders)											
Bulgaria											
Czech Republic											
Cyprus											
Denmark											
Estonia											
Finland											
France											
Germany											
Greece											
Hungary											
Iceland											
Ireland											
Italy											
Kosovo											
Latvia											
Malta											
Norway											
Poland											
Portugal											
Slovakia											
Slovenia											
Spain											
Sweden											
Switzerland											
UK (England & Wales)											
UK (Scotland)											

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