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Problems in training and examining of cyclists in Poland

Abstract: The article presents a diagnosis of the problems that affect the quality of the level training and examination of cyclists in Poland. The first part presents statistics on accidents involving cyclists in Poland in the recent years. The current system of training and examining cyclists as well as teachers and instructors is described successively. Additionally, examples of good practice that are used by countries with highly developed cycling culture are shown. Based on the assessment of the current state of affairs and the analysis of the issues, appropriate conclusions were drawn, and recommendations were proposed. They can contribute to the awareness of the need to change the approach in the Polish cycling education system and ultimately to increase the cyclist's sense of safety in road traffic, thus reducing the number of injuries and fatalities.

Keywords: Cycling safety; Cyclist; Bicycle training; Training of cyclists; Examining of cyclists; Cycling education; Cycling licence; Cycling proficiency test.

Introduction

Despite the fact that the number of fatalities by cyclists is decreasing year by year, the statistics of accidents with their participation are still alarming. Poland has one of the highest rates of cyclists mortality in road accidents among all European Union countries. Communication problems in recent years have popularized the bicycle as a means of transport. The growing number of active cyclists also causes an increase in accidents and collisions. Most of these incidents could have been avoided if road users followed the applicable rules. Due to the fact that cyclists are among the vulnerable road users, special attention must be paid to ensuring their safety.

In countries with highly developed education and bicycle infrastructure, children from an early age are taught how to anticipate dangerous situations on the road, they know road signs and traffic rules and can behave towards them. In Poland, outdated training methods and, above all, the lack of a practical bicycle education system is a serious problem. To educate generations of conscious cyclists, it is necessary to reform the training system from scratch.

Bicycle accidents in Poland

Statistics from the "Road Accidents" report of the General Police Headquarters show that the number of road accidents involving cyclists has been gradually decreasing in 2018-2020 (Table 1).

Tab. 1. Road accidents involving cyclists in 2018-2020 by area *Source: [1, 2, 3]*

Area	2018			2019			2020		
	Accidents	Killed	Injured	Accidents	Killed	Injured	Accidents	Killed	Injured
Built-up	4086	155	3753	3811	135	3504	3232	144	2974
Not built-up	626	131	506	615	123	495	536	105	429
TOTAL	4712	286	4259	4426	258	3999	3768	249	3403

According to police reports, failure to yield the right of way and incorrect turning maneuvers were the most common causes of accidents caused by cyclists (Table 2).

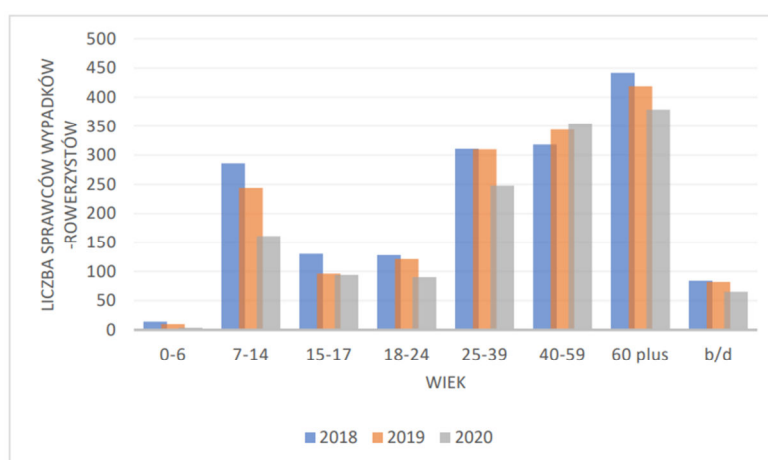
Tab. Błąd! W dokumencie nie ma tekstu o podanym stylu. Causes of road accidents caused by cyclists in 2018-2020 (own elaboration based on data of the General Police Headquarters in 2018-2020 *Source: [1, 2, 3]*

Reasons	2018		2019		2020	
	Total	%	Total	%	Total	%
Failure to yield the right of way	605	35,5	584	35,9	464	33,2
Incorrect turning maneuver	181	10,6	159	9,8	171	13,2
Speed not adapted to traffic conditions	113	6,6	139	8,5	184	12,2
Inappropriate behavior towards a pedestrian	119	6,9	98	6,0	65	4,7
Abnormal overtaking	76	4,4	69	4,2	90	6,4
Incorrect bypassing	62	3,6	54	3,3	71	5,1
Incorrect lane change	38	2,2	43	2,6	42	3
Failure to keep a safe distance from the vehicle in front	42	2,5	42	2,6	39	2,8
Failure to comply with traffic lights	38	2,2	34	2,1	28	2
Incorrect overtaking	42	2,5	35	2,2	46	3,3
Failure to comply with other signals	20	1,2	27	1,7	39	2,6
Rapid braking	15	0,9	15	0,9	19	1,4
Driving without the required lighting	15	0,9	22	1,4	27	1,9
Inappropriate crossing of cyclists	12	0,7	11	0,7	b/d	b/d
Incorrect U-turn	9	0,5	7	0,4	b/d	b/d
Other causes	326	19	287	17,7	96	6,7

The analysis of the effects of accidents by month shows that the number of accidents increases with the improvement of the weather and higher temperature. This is due to the

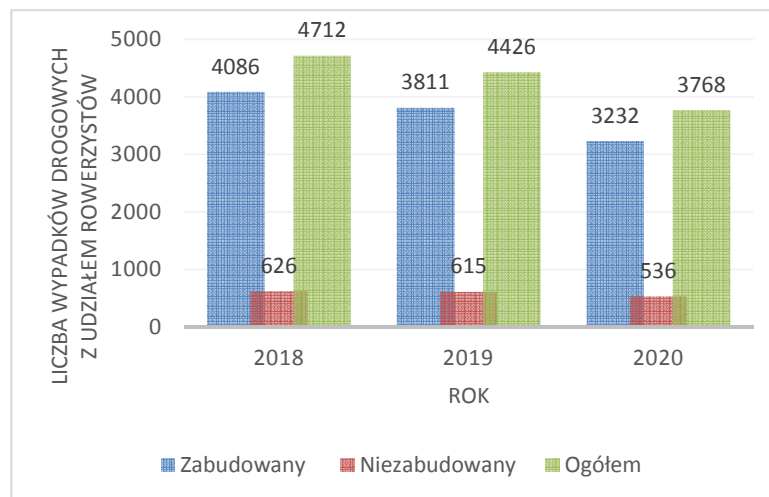
increased activity of cyclists during this period. In 2018, the largest number of accidents took place in June, in 2019 in August, and in 2020 in July. [1, 2, 3]

Due to the high number of accidents caused by underage cyclists and in the 25-60+ age group, cycling education should be widely available to people of all ages. Police data clearly show that the age group posing the most significant risk on the road and causing accidents with the largest share of fatalities in Poland are the elderly, often already having some neurological changes (Fig. 1). Children up to the age of 6, who rarely at this age can ride a bike on their own, make up a small percentage of cycling active people. Quite a large number of accidents are caused by children aged 7-14, who are just starting to learn to ride a bike or take their first steps in traffic. Cyclists aged 25-60 form the group that most often uses bicycle transport, which automatically causes many accidents. On the other hand, young people and young adults aged 15-24, who most often treat bicycles as transport to places of education or a form of recreation, from all groups active by bicycle, created the lowest risk on the road. [1, 2, 3]



1. Number of cyclists as perpetrators of road accidents in 2018-2020, broken down by age (own elaboration based on *Source: [1, 2, 3]*)

Most of the accidents in question took place in built-up areas (Fig. 2). Accidents in non-built-up areas were characterized by high casualty rates. In the years 2018-2020, about every fifth cyclist involved in a road incident was a fatality. For comparison, in the built-up area in 2018, it was every twenty-sixth, in 2019 every twenty-eighth, and in 2020 every twenty-second cyclist. [1, 2, 3]



Błąd! W dokumencie nie ma tekstu o podanym stylu.. Number of road accidents involving cyclists in 2018-2020 (own elaboration based on *Source: [1, 2, 3]*)

Cyclist law in Poland

In Poland, the documents specifying the authorization to drive a bicycle, the scope of classes for cyclists, and the examination for a bicycle license are:

- Act of June 20, 1997. Road Traffic Law - Journal of Laws 1997 No. 98 item 602 [18],
- Act of January 5, 2011 on vehicle drivers - Journal of Laws No. 30 item 151 [19],
- Regulation of the Minister of Transport, Construction and Maritime Economy of 12 April 2013 on obtaining a cycling license- Journal of Laws of 2013, item 512 [20],
- Regulation of the Minister of National Education on the core curriculum for pre-school education and the core curriculum for general education for primary schools, including for students with moderate or severe intellectual disabilities, general education for stage I sectoral vocational schools, general education for special schools preparing for work and for post-secondary schools of February 14, 2017 (Journal of Laws of 2017, item 356) [21].

The current system of training and examining cyclists in Poland

Cycling training in Poland

According to the provision in the Core Curriculum for General Education of Primary Schools for the subject of technology, "Schools should ensure that a student who is 10 years old can obtain a cycling license. It is allowed to organize classes preparing to obtain a cycling license not only during the technical subject but also during other classes, e.g. hours with a tutor [8]". The core curriculum has changed with the reform of the education system in 2017. Compared to the previous version, two new topics have been added to the current version, focusing on interpreting road signs, maintaining and adjusting the bicycle, as well as preparing it for riding (Fig. 3).

Technika – obecna podstawa programowa	Zajęcia techniczne – poprzednia podstawa programowa
Treści nauczania – wymagania szczegółowe	
II. Wychowanie komunikacyjne. Uczeń: 1) <u>bezpiecznie uczestniczy w ruchu drogowym, jako pieszy, pasażer i rowerzysta;</u> 2) <u>interpretuje znaki drogowe dotyczące pieszego i rowerzysty;</u> 3) <u>konserwuje i reguluje rower oraz przygotowuje go do jazdy z zachowaniem zasad bezpieczeństwa.</u>	4. Sprawne i bezpieczne posługiwanie się sprzętem technicznym. Uczeń: 2) <u>bezpiecznie uczestniczy w ruchu drogowym jako pieszy, pasażer i rowerzysta.</u>

Uwaga: wytłuszczono treści, które dodano w nowej podstawie programowej, natomiast podkreślono treści zapisane w obu podstawach.

Błąd! W dokumencie nie ma tekstu o podanym stylu.. Comparison of teaching content between the previous and the current core curriculum of the subject of technology *Source:* [8]

The suggested time that should be spent on content related to preparations for obtaining a cycling license is no more than 12 hours. "It is recommended to introduce traffic-related teaching content at grade IV level [8]." "It is recommended that the preparation for obtaining a cycling license should take place as part of a special course organized as part of the school principal's instructions [8]". The training should be extracurricular. Its scope can be implemented in each school individually, but it must be based on and meet the issues and detailed requirements contained in the core curriculum. School courses can be organized provided that special regulations are developed, which will specify, among others, the duration of the course, conditions of participation, and the scope of its completion. If the Provincial Road Traffic Center is located near the school, the training to obtain a cycling license may be organized there as part of the established cooperation. [8]

Training of non-primary school students applying for a cycling license

Classes for non-primary school students may be conducted in provincial road traffic centers and driver training centers with a certificate confirming the fulfillment of additional requirements.

The scope and rules for obtaining a cycling license by persons who are not primary school students are specified in detail in the Regulation of the Minister of Transport, Construction and Maritime Economy of 12 April 2013 on obtaining a cycling license. The document deals with 17 different issues, for each of which the teaching content and the purpose of the classes have been developed.

According to Art. 3 of the regulation "The trainee participates in classes that include: 1) theoretical classes - in the field of knowledge about road traffic and the skills to provide and behave when providing first aid to participants in road accidents; 2) practical classes - in the field of technical knowledge and improving the ability to ride a bicycle on the maneuvering area; 3) checking the necessary skills [6]".

Art. 10 specifies the duration of classes - „1. The duration of theoretical classes is 6 hours, including at least 1 hour of classes in the field of first aid skills and behavior during road accidents. 2. The duration of practical classes is 2 hours [6]”. It can be easily concluded that the duration of the classes is disproportionate to the number of topics required.

Persons training and examining for a cycling license

According to Art. 65 of the Act of 5 January 2011 on vehicle drivers "The necessary skills of the person applying for a cycling license are checked by:


- a teacher with specialized training in road traffic organized free of charge at the voivodeship road traffic center;

- a police officer or a retired police officer with specialist training in road traffic;
- examiner;
- instructor [19]”.

Examination of cyclists in Poland

The guidelines for conducting the cycling license exam are set out in the Regulation of the Minister of Transport, Construction and Maritime Economy of 12 April 2013 on obtaining a cycling license. According to Art. 22 "after obtaining a positive result of the examination, a cycling license is issued [6]" (Fig. 4). The exam itself, as well as obtaining a cycling license, is free.

WZÓR

KARTA ROWEROWA	
1. Nazwisko 2. Imiona 3. Data ur. 4. Adres zamiesz.: kod miejsc.: ul. nr budynku nr lokalu <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> Miejsce na fotografię 45 mm x 35 mm </div> <div style="text-align: right; margin-right: 20px;"> (podpis posiadacza) </div> <div style="text-align: right; margin-right: 20px;"> 5. Data wydania r. </div> <div style="text-align: right; margin-right: 20px;"> Seria A Nr 0000001 </div> <div style="text-align: center; margin-top: 10px;">  </div> 6. Nazwa podmiotu wydającego kartę rowerową <small>(podpis i pieczęć dyrektora lub kierownika podmiotu wydającego kartę rowerową)</small>	7. Zmiana adresu zamiesz.: kod miejsc.: ul. nr budynku nr lokalu <div style="text-align: center; margin-top: 20px;"> (podpis i pieczęć dyrektora lub kierownika podmiotu wydającego kartę rowerową) </div> 8. Miejsce na adnotacje

4. Cycling license template

Source: [6]

Art. 21 defines the rules for examining a bicycle license for primary school students. “The exam for primary school students consists of parts:

- theoretical - taking into account the content referred to in art. 41 sec. 1 of the Act;
- practical – carried out in a place designated by the principal of a primary school, enabling the necessary practical skills to be checked [6]”.

“The exam for primary school students is carried out on the date set by the headmaster of the primary school, which specifies the form of the theoretical part and the duration of the theoretical part and the practical part of the exam. The result of the theoretical part of the exam for primary school students is considered positive if the person taking the exam has obtained at least 80% of the possible points. The result of the practical part of the exam for primary school students is considered positive if the person taking the exam correctly performed at least 90% of the maneuvers and does not pose a threat to road traffic. [6]”.

The Polish examination system assumes that educational institutions individually develop regulations and procedures for obtaining a cycling license. On the basis of the analysis of these documents, significant disproportions were noticed in the way of training and examining young cyclists. Differences can be seen in the following areas:

- coordinator and teaching staff helping the student to obtain a cycling license,
- educational content taught during classes preparing to obtain a cycling license,
- duration of individual parts of the exam,
- form of conducting the theoretical exam (number of questions, required scope of knowledge),
- place where the practical exam takes place,

- skills that the student must demonstrate during the practical exam,
- exam date.

Children's cycling education

Most of a child's physical development occurs before the age of 7 and is further refined during adolescence. However, it is important to remember that cycling is a fine motor skill that requires a lot of practice to develop for the movements to become automatic and coordinated. Cycling in traffic involves two types of motor skills:

- basic bicycle handling skills:
 - balancing,
 - pedaling,
 - steering,
 - braking,
- safety skills:
 - traffic search, etc. moving your head while driving straight,,
 - joining road traffic,
 - braking to stop at traffic lights and stop signs,
 - signaling maneuvers when turning [9].

According to the applicable laws, the regulation of the minister, and the core curriculum, the practice of the above skills takes place in an artificially created environment, such as a bicycle town (Fig. 5), a school playground, or a sports hall. That is, in places where there is no possibility of interaction with other road users.



5. Cycling town in Wieliczka

Source: [10]

The main problems in the cyclists training system in Poland

Despite many good practices and initiatives developed over the years to increase road safety and minimize the number of accidents involving cyclists, people responsible for the implementation of cycling education in Poland still encounter many obstacles in the implementation of cycling activities.

Core curriculum and rules for obtaining a cycling license

The current core curriculum and the rules for obtaining a cycling license do not include road traffic classes and practical exams on the road. The lack of balance between learning theory and practice means that too much attention is paid to the theoretical part, which students are then unable to put into practice.

In Poland, there is also no institution dealing with the preparation, coordination, and organization of classes and examinations for a cycling license, as well as taking care of the training of teachers and instructors. As a result, schools and training institutions conduct classes according to their capabilities, which do not meet the expected standards.

Too few hours are allocated to communication education classes in primary schools. In addition, large groups in which communication education classes are conducted are not conducive to concentration and result in incorrect execution of teachers' and instructors' instructions. The cyclist training program in Poland focuses mainly on children, and there are gaps in the education of teenagers.

As for classes for non-primary school students, which are conducted in traffic centers, they last too short as for the scope of teaching content set out in the regulation.

Parental involvement

Insufficient involvement of parents and guardians in the child's motor development from an early age often results in the lack of ability to ride a bicycle. In such a situation, it is more difficult for teachers to meet the requirements of the core curriculum and properly prepare the student for the bicycle license exam.

Legal records

The legal provision stating that a person up to 10 years of age riding a bicycle is treated as a pedestrian and can only move on the pavement accompanied by an adult prevents the youngest cyclists from having previous practice in road traffic. According to the current law, children are excluded from using any infrastructure adapted for cyclists. This state of affairs means that teachers have no legal possibility to conduct bicycle classes in the field until the students pass the bicycle license exam.

Training place for cyclists

Analyzing the content of textbooks and other educational materials intended to prepare children and youth for the bicycle license exam, it can be observed that the rules of the road, maneuvers, as well as the rights and obligations of a cyclist are usually diversified with photographs or videos of cyclists moving in real road traffic (Fig. 6). It would not be unusual if not for the fact that the trainees do not later have the opportunity to test the acquired theoretical knowledge in practice. In Poland, at best, students have a chance to practice some maneuvers in a traffic town. The fact is that they are a good place to learn to ride a bike and start the adventure with cycling education, but for more effective and long-term results ensuring the sense of safety of cyclists on the road, practical lessons in traffic are necessary. Driving in an artificially created environment teaches schematic driving, does not stimulate imagination, and how to share the road with other road users.

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6. Excerpt from the manual "My first driving license - cycling license" regarding the avoiding maneuver

Source: [11]

Co-financing for training

Another serious problem affecting the Polish system of training and examining cyclists is the lack of financial support for preschool and school education in the field of road safety (Fig. 7). It is worth noting that this aspect varies greatly in all EU Member States. The subsidies can not only be used for better and more attractive educational materials, but above all, they allow for equalizing educational differences in the field of road safety.

Państwa	Edukacja przedszkolna			Edukacja szkolna		
	Brak wsparcia	Materiały (bezpłatne lub w specjalnej cenie)	Finansowanie z innych źródeł	Brak wsparcia	Materiały (bezpłatne lub w specjalnej cenie)	Finansowanie z innych źródeł
Austria	x				x	
Belgia		x			x	
Cypr	x				x	
Czechy		x			x	
Dania	x				x	
Estonia			x			x
Finlandia	x			x		
Francja		x				
Grecja	x			x		
Hiszpania		x			x	
Holandia		x			x	x
Irlandia	x				x	
Litwa (brak danych)	-	-	-	-	-	-
Luksemburg					x	
Łotwa (brak danych)	-	-	-	-	-	-
Malta	x			x		
Niemcy		x				x
Polska	x			x		
Portugalia		x			x	
Słowacja			x			
Słowenia		x			x	
Szwecja	x			x		
Węgry		x			x	
Włochy	x				x	x
Wielka Brytania		x			x	

7. Financial support for educational institutions implementing road safety education in EU countries, as of 2011

Source: [12]

Training system for young adults and adults

The cyclist training program in Poland focuses only on the youngest children. There are gaps in the education of older children and teenagers. What's more, the adult training system does not exist, despite the apparent need. Associations of active cyclists organize educational projects in individual cities on their own. Their success is largely influenced by subsidies from the city authorities, and these are in practice relegated to the margin of annual expenses.

Teacher Training Program

The process of training teachers, instructors, or trainers is equally important because it is their task to transfer knowledge and share experience in cycling. When analyzing the training program and its duration in individual Road Traffic Centres, large discrepancies can be noticed. They should not appear if we want to maintain certain standards. For comparison, in Denmark, teachers are trained by school safety coordinators once every six months. One such training lasts 3 days (21 hours), and it additionally includes e.g. cycling practical classes, newly introduced regulations, and research, as well as accident statistics [13].

Determining the qualifications of instructors and examiners

When analyzing the regulations, procedures, and instructions for obtaining a cycling license, one can come across records according to which the director of a school, WORD or driver training center, i.e. often a person who has no contact with everyday cycling, determines the qualifications of instructors and examiners (Fig. 8). Such a situation is unacceptable, because competences should be checked according to uniform categories.

Rozdział 6

Kwalifikacje dla instruktorów nauki jazdy i egzaminatorów.

- §29.1. Kwalifikacje wyznaczanych instruktorów i egzaminatorów określa dyrektor szkoły.
2. Warunkiem wystarczającym dla egzaminatora jest spełnienie wymogów art.109 ust.4 , art. 110 oraz 110a ustawy i wskazanie przez dyrektora szkoły
 3. Instruktor realizującym zajęcia praktyczne może być osoba, wyznaczona przez dyrektora szkoły na wniosek kierownika ośrodka, spośród osób posiadających prawo jazdy. W szczególności może to być osoba , o której mowa w §14 ust.1 pkt.3 Instrukcji;
 3. Instruktorzy i egzaminatorzy są obowiązani znać postanowienia Instrukcji i sposoby ich realizacji.
 4. kandydat na instruktora jest zaznajamiany z Instrukcją, wymaganymi dokumentami i terminami przez kierownika ośrodka szkolenia lub wyznaczoną przez niego osobę.
 5. Listę o której mowa w §15 ust 5 i 6 Instrukcji zatwierdza dyrektor szkoły podpisując obok kierownika ośrodka.

8. A fragment of one of the instructions on conducting training and exams for a cycling license *Source: [14]*

Technical condition of bicycles

For financial reasons, most Polish schools do not have bicycles on which it is possible to conduct cycling classes. What's more, private bicycles that are made available for the exam have incomplete equipment or are not adapted to the height of students.

Main problems in the system of examining cyclists in Poland

The fundamental problem of examining cyclists is still the low popularity of the cycling license. A large part of children does not take the exam and move around in traffic illegally, because according to the law in such a situation they cannot ride a bicycle alone.

Currently, the form of conducting the bicycle license exam in Poland is the subject of many discussions. Below, the issues of the individual parts of the exam that future cyclists struggle with are listed.

Issues during the theory test for a bicycle license

According to the current examination structure, the form of the theoretical examination is defined individually in the regulations or procedure for each examining institution. The instructors of the theoretical part are free to arrange questions, so the students do not know what to expect and how to prepare for the test. The lack of a nationwide database of questions examining bicycle license results in a disproportion between the level of difficulty in individual institutions.

Problems during the practical exam for a bicycle license

The practical part, which deals with practice only in name, is the main problem in the Polish system of examining cyclists. Preparations and the cycling license exam itself do not take place in real road traffic, but in an artificially created cyclist-friendly environment, which makes it difficult for most students to find their way around and apply the acquired knowledge on the road. Some schools test in a sports hall or on a school playground, which in no way reflects the real situation on the road (Fig. 9). What's more, you can read about bizarre situations when the examinees were supposed to simulate cycling by walking along the track marked by cones and sashes. It may seem a better situation to carry out the practical part in a bicycle town, but there you still test in artificial conditions. This could be compared to a situation where a driving license would be issued only on the basis of the skills presented in the maneuvering area. Referring to the article from the "Łódź on bikes" association, the simulated environment prevents the examinees from acquiring skills:

- “driving while being overtaken by a car;

- cycling across tram tracks;
- maintain balance when crossing curbs;
- master cycling while avoiding surface defects or maintaining balance after entering it;
- correct overtaking;
- crossing a lane (or several) of traffic in order to turn left;
- ride a bicycle path and let pedestrians pass at zebra crossings [15]”



9. An example of bad practice - an obstacle course on the school playground, not reflecting the real situation on the road *Source: [16]*

Another important problem that has a negative impact on the examination of cyclists is the lack of provisions in the regulations or the core curriculum for precise information on how the practical test should be conducted and what elements it should contain.

Compared to countries with a developed cycling culture, Poland has a small base of teachers, examiners, trainers, and instructors specializing in training in safe cycling and examining cyclists. This is an aspect that additionally makes it difficult to create a new form of the practical exam due to the fact that it is an event in which quite a large number of people must be involved.

Enforcement of cycling license possession

According to the tariff for 2022, the fine for "driving a vehicle other than a motor vehicle on a public road, in a residential or traffic zone by a person who is not authorized to do so" is PLN 200 [17]. Although the obligation to have a cycling license with them applies to all people aged 10-18 moving in road traffic, according to Polish law, children cannot receive a ticket, because they are not subject to the Code of Offenses. In practice, the provision can therefore only be enforced against persons who are 17 years old. Thus, the provision on enforcing a cycling license in Poland is a dead provision.

Good practices

In countries with highly developed education and bicycle infrastructure, children from an early age are taught how to anticipate dangerous situations on the road, they know road signs and traffic rules and can behave towards them. The greatest disproportions in individual cycling education systems result from the amount of time allocated to their implementation [18].

Cycling training

Most of the good practice activities concern the practical part of cycling training (Fig. 10). Classes are conducted by teachers, instructors, or police officers specializing in this field.

Children are equipped with helmets and vests, as well as a bicycle that meets the equipment standards.



10. Practical exercises in the field conducted as part of bikeability in England
Source: [19]

Bicycle exam

Countries with a high cycling culture organize a bicycle test in traffic, thus checking whether the youngest can apply theoretical knowledge in practice and demonstrate the acquired skills. Such an exam is carried out on a route designated in the city (Fig. 11), on which police officers or volunteers are stationed, who, based on a checklist, assess whether students are doing well (Fig. 12). The assumption of the exam is to reflect everyday cycling to the greatest extent, therefore no additional road signs are placed on the route and individual streets are not closed to traffic.



11. Verkeersexamen 2020 practical test route in Assen
Source: [20]



12. Practical road test VVN in the Netherlands

Source: [21]

Recommendations

In order to solve the problems and improve the effectiveness of the current form of training for cyclists and the way they are tested in Poland, appropriate steps should be taken immediately. Introducing changes should be based on solutions that have been developed in countries with a greater cycling culture.

Cycling training in Poland

As part of the reform, it is necessary to create a training scheme that will ensure the formation of a society of conscious cyclists. In the beginning, special attention should be paid to the education of children and youth, who in the future will pass on knowledge to younger generations. Successful cycling training is based on the cooperation of a group of people responsible for educating cyclists with various institutions. Coordination and communication between kindergartens, schools, police, and parents are also extremely important. The more intensive it is, the greater the chance of better results in the future. The cyclist training program should be formulated in a clear and accessible way by national authorities, while the task of teachers, instructors, and trainers should be to adapt it to the individual skills of the trainees. What's more, cycling education classes should have an attractive and innovative form. Examples of elements practiced as part of the road traffic course could be:

- pace zone 30 with parallel intersections,
- turning left from a priority road,
- turning left from a minor road,
- entry from the subordinate road to the intersection,
- driving on a traffic lane,
- riding on the road for bicycles,
- bicycle ride,
- entry from the road to the bicycle path,
- joining the bicycle path into the roadway,
- lack of continuity on the route,
- riding a separate lane for bicycles,

- riding a bicycle contralane,
- riding on a street with bicycle countertraffic,
- use of the bicycle lock,
- overtaking
- driving through a roundabout,
- secure bicycle parking.

It is recommended that actions and activities aimed at training cyclists achieve the best results:

- standardization of cycling education in a long-term process that will meet current needs and requirements,
- building awareness of the importance of cycling education among parents whose habits and practiced habits are a model for children,
- introducing the content of safe cycling at every stage of education (pre-school and school) in a specific and constant time frame,
- establishing an institution in Poland responsible for educating cyclists, which will be the coordinator of training, defining and enforcing requirements and standards,
- corrections in the legal provisions regarding the age limit for independent cycling,
- combining theory with practice during cycling education classes,
- providing the opportunity to practice cycling, initially in a safe and protected environment, and then in road traffic during cycling training,
- standardized preparation of persons conducting a bicycle course, training them according to specific standards,
- introduction of annual compulsory supplementary training for teachers and instructors,
- checking the knowledge and skills of trainers by introducing a mandatory competency exam for them,
- organizing cyclical campaigns to promote safe cycling among both children and adults.

The above activities must be long-term and be subject to continuous evaluation in order to meet the needs of society in the best possible way. The above-mentioned proposals will contribute to increasing the confidence of cyclists in road traffic and will significantly affect their safety.

Training of teachers, instructors and examiners

Teachers, instructors, and examiners should be role models and examples for young cyclists. Bearing in mind the fact that in many educational institutions cycling education is pushed to the sideline due to the fact that technical teachers are often not properly prepared for classes, modernization of their training system is essential.

There is a need for national guidelines for the teacher education curriculum and its duration. The schedule of such classes should additionally include practice in road traffic and end with a mandatory theoretical and practical exam in road traffic, which would check the acquired competencies. After such a course, people conducting cycling classes, adapting to the new concept of training, should know how to provide participants with a safe environment on the road and transfer theoretical knowledge into practice.

Examination of cyclists in Poland

The form of examining cyclists should also be reformed. The scheme of the theoretical part of the exam should be standardized. One solution could be to create a national database of questions that would test the required content of the training.

In turn, the practical exam for a bicycle license should be carried out in road traffic with reduced traffic intensity, which will be able to check the behavior of the cyclist in various road situations.

The essence and popularity of the bicycle license exam should be promoted, so that it becomes the next stage in the development of road safety.

Summary

The analysis of the above problems concerning the training and examination of cyclists in Poland showed that they do not concern only individual institutions, but the whole country. Errors in training and examining cyclists are mainly due to too much focus on theory rather than practice. The recommendations proposed above may contribute to increasing the safety not only of cyclists but also of all road users.

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