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CENTRE OF ROAD TRAFFIC SAFETY EDUCATION FOR CHILDREN AND YOUTHS – MODERN EDUCATIONAL CENTER IN ROAD TRAFFIC SAFETY

Summary. The paper is about the idea of establishment of road safety education center to improve road users behavior, which is in line with the National Road Safety Policy till 2020 of government of Poland. Through this center various educational activities, programs, European Union projects for road safety were launched since 2003. The authors have introduced those programs, showing their effectiveness as well have mentioned about future plan for expansion to achieve Vision Zero. The paper presents modern and effective approach to education today by setting up designed science centrum. The idea of implementing new technologies, innovative tools, laboratories, workshops in the long-lasting process of education to road safety hazards for main risk factors will improve road users behavior for reducing high number of road injuries and fatalities. It is important work from injury prevention point of view especially because the Poland government's interest in road safety. This center can be a model of innovative road traffic education for other countries.

CENTRUM EDUKACJI DZIECI I MŁODZIEŻY W OBSZARZE BEZPIECZEŃSTWA RUCHU DROGOWEGO – NOWOCZESNY OŚRODEK EDUKACYJNY W TRANSPORCIE DROGOWYM

Streszczenie. Artykuł przedstawia ideę utworzenia centrum edukacyjnego w zakresie poprawy bezpieczeństwa ruchu drogowego, zgodną z polityką państwa przyjętą w Narodowym Programie Bezpieczeństwa Ruchu Drogowego 2020. Realizowane edukacyjne programy i inicjatywy, europejskie projekty od 2003 r. są przedstawione w artykule, a ich efektywność wpływa na osiągnięcie Wizji Zero. Artykuł przedstawia nowoczesne i efektywne podejście do edukacji przez tworzenie centrów nauki. Zaangażowanie nowoczesnych technologii, innowacyjnych urządzeń, warsztatów i zajęć laboratoryjnych w długotrwały proces edukacji dotyczącej najważniejszych problemów bezpieczeństwa ruchu drogowego wpłynie na zmianę zachowań uczestników ruchu i zmniejszenie wysokiej liczby ofiar śmiertelnych i poszkodowanych wypadków drogowych. To ważny projekt z punktu widzenia prewencji oraz zainteresowania polskiego rządu problematyką bezpieczeństwa ruchu drogowego. Opisany model może być przykładem realizacji nowoczesnej edukacji w ramach BRD dla innych krajów.

1. INTRODUCTION

The development of civilization in the twentieth century changed the picture of society's life. In particular, progress in the field of transport, enabling the movement of people and goods in a short time, the increasing distance, affected a significant impact on economic and social life of every country. However, the development of transport in addition to the undoubted benefits causes negative consequences in terms of injuries and environmental damages, which all the time in the world has a growing trend. At the beginning of the twenty-first century, the World Health Organization (WHO) has announced that about 1.3 million people are killed on the roads each year. Road injuries are on the 9th position on the list of urgent causes of death. In this context, road safety as complicated and having particular economic and social importance problem should be taken very seriously both at international level and by the individual states and their citizens [1].

Modern approach to education is a very important issue those days. Education to improve road users behavior is a different kind of innovation projects in transport section, than developing road industry, aviation, and marine. Road transport as the most dangerous way of transport with the highest rank of death needs a long-term education and social communication with society. Education in the twenty-first century requires attractive forms of teaching, usage of interactive forms of education. Feasibility experiments, independent solution of the problems. Stimulating questioning support the theoretical knowledge and allows to know the science, give an inspiration and encourage to individual science actions.

Effectiveness of road safety education (RSE) depends today on interesting, modern forms of communication - technological and technical innovation, which change the attitude of road users. The most important issue are interactive, multimedia and innovative, techniques of education to show the consequences of risky behavior on life and health. Bad decisions due to the inappropriate behavior on the roads affect our and others lives. Today's RSE installations and simulators show the consequences of them. These practical experiments along with the theoretical process of education should eliminate or minimize threats on the roads and influence better state of roads safety [2].

Motor Transport Institute (MTI), specially Road Traffic Safety Centre develops national and local education's programs to improve road safety in Poland as well does reeducation programs for drivers, conducts periodic statistical analyzes of main problems of road safety (speed, alcohol, young drivers, vulnerable road users), monitors and evaluates the effectiveness of measures taken to improve road safety, participates in European Union research projects. Due to our experience and knowledge in improving road safety in Poland our specialist and researches decided to set up a modern and innovative educational centers for all group and ages of road users: kids, youths, older road users, instructions and teachers of road safety education to improve bad statistic of injuries and fatalities. The project named *Center for Education of Children and Youth in the area of Road Safety (Education Centre for Road Safety)* started in 2011.

The objective of the paper is to present all major EU projects implemented in Poland by MTI to present their importance and our ability to fix one of the modes educational center of RSE, which couldn't be compared to any other centers those type. The objective of the paper is to present all today's methods of RSE providing by MTI for a long lasting education changing the attitude of road users in Poland. Description of a great place of innovative technical solutions for dissemination and implementation of best practice, acting as a heart of domestic interaction and promotion for road safety for all will be presented in the article as well. The other topics at the *Education Centre for Road Safety* except the road traffic safety will be briefly describe, as well as its activities, labs and exhibitions. The setting up of the Education Centre for Road Safety as a great attraction in Warsaw in 2019, modern place for popularizing technical science, delivering long term science on RSE will have an impact on achieving Vision Zero [3]. Some of examples of today's modern science museum will be presented as well.

2. CONTEXT OF THE PROBLEM

Main reason of setting up the *Education Centre for Road Safety* is statistics and demographic data. Road Safety is a major societal issue. In 2011, more than 30 000 people died on the roads of the European Union, i.e. the equivalent of a medium town [4]. Poland according to the European Transport Safety Council (ETSC) information's is on the last places due to road safety, with very high number of killed and seriously injured on the roads. In 2012 there were 37 046 car crashes, within 3 571 killed, and 45 792 injured [5]. At the same time, on the road in UE died 28 000 people (13 % of that number are killed in Poland; Polish people represents 8% of all EU citizens) [6]. Despite significant increase in the amount of vehicles, the number of killed on polish roads falls down on about 35 % in the period between 2001-2012. But the progress is still not satisfactory – the number of killed in EU dropped by 49 %, in many countries even by 60% [7].

All projects which goal is to reduce the number of killed and seriously injured on roads are important in the state's transport policy. Research shows that providing long term education programs and communication with the society bring the most effective, easiest, cheapest way to reach this goal and improve road traffic safety and bad statistics [2].

MTI's idea of creating Education Centre for Road Safety in Poland express the EU policy according to highly successful Swedish approach to road safety, introduced in Vision Zero, summarized one sentence: No loss of life is acceptable. It is based on the simple fact that we are human and make mistakes. The road system needs to keep us moving, but it must also be designed to protect us at every turn. Road design infrastructure, law regulations and initiatives on RSE are crucial. The project based on this approach implies reducing of 50 % number of killed and injured on polish road till 2050 [3].

3. LAW REGULATIONS

The assessment of polish road traffic safety shows that despite education programs, society communication - information's campaigns (founded and organized by government, local governments, police, MTI, non-government organizations) the number of killed and injured is still one of the highest in EU.

Project of the *Education Centre for Road Safety* meets the objectives of international and national strategic documents regarding the need for education and training of road users to achieve zero killed on polish roads. This objective expresses Transport Policy of the European Union concluded in 2011 in the document entitled "WHITE PAPER: Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system" [8].

The other very important strategic document on this issue was the "IV European Action Plan for Road Safety for 2011 -2020", adopted by European Commission in 2010 [9]. The plan inter alia implied strengthening education and training for road users in all member states. The principles were crucial for domestic document on road safety which was "The National Road Safety Programme 2013 – 2020" adopted by polish government in 2013. This national document has the same objective as EU's concerned the Vision Zero approach. RSE initiatives should concentrated on priority: Safe Man pillar [10]. Effectiveness of road safety policy should depend ultimately on users' behavior. Due to this document education and training is essential in the transport safety.

4. ROAD SAFETY EDUCATION

Next to engineering and enforcement, road safety education with the safe man key pillar is of great importance. Road safety education summarizes the totality of measures, which aim at positively influencing traffic behavior patterns.

The process emphasizes three pillars [11]:

1. Promotion of knowledge and understanding of traffic rules and situations.

2. Improvement of skills through training and experience.
3. Strengthening and/or changing attitudes towards risk awareness, personal safety and the safety of other road users.

Education in the field of road safety is a purposeful social activity aimed at creating the appropriate ethical motivation, social attitudes, and desired behavior on the roads, which are an integral component of the overall human culture. The purpose of education is to change attitudes and behaviors at the individual and the community level [2].

RSE for all participants as a main goal of Motor Transport Institute was carried out in many EU projects and initiatives, which are presented below. Road Traffic Safety Center as a polish expert took part in the UE project ROSE-25 funded by the European Commission in the period 2003-2005. The main goal of the project was to collect from all EU members via standardized questionnaires information about RSE actions due to the: car passengers, pedestrians, cyclists, public and school transport, moped users, pre-drivers.

The results of the ROSE were recommendations for Road Safety Education collected in an European Booklet, which was an inventory and compiling of an European Good Practice guide on road safety education targeted at children, teenagers and parents of "smaller" children aged 0 to 3. Polish experts described the RSE within the school system. The collected tools were: books, booklets, collections of games [11].

Because the younger road users: children and youths show the greatest effect from campaigns [12], MTI carried out a social campaign called "Armadillo Club Always Belt Up" between 2005 to 2013. The objective of the campaign was to increase awareness of safe transport of children between 4 and 12 year old. The evaluation studies carried out each year after the program assessed the usefulness of the long term public campaign on usage child restrain system among children and seat belts among adults.

The first stage of the campaign (from year 2005 to 2007) was an international research project EUCHIRES (*European public awareness campaign on the use of seat belts and child restraint systems*) and was co-financed by the European Commission within the DG MOVE grant and Ministry of Science and Higher Education [13]]. From the year 2011 to 2013 four more editions of the campaign were executed and were financed by Operational Program for Infrastructure and Environment.

The main target groups were children themselves and their parents. The strategy of this campaign was based on simple guidelines: to direct whole campaign to children, to make seat belt usage more attractive and funny, to create positive approach and to avoid risk. To encourage safe travelling (in child restraint system, wearing a seat belt) a gadget named Armadillo was offered to children during the police road checks (300 000 armadillos pieces).

The campaign was supported by information (website) aimed at adults who regularly carry children in their cars with an internet address: www.klubpancernika.pl. Website was a major source of important information about the campaign. An important aspect of national road traffic safety campaigns was media coverage [13] with TV spots released as well as the radio (in more than 5 radio stations), posters, billboards (500 visible billboards in whole Poland), cinema spots (80 screens), stickers (500 000), small posters (2 000), bulletins and leaflets (100 000). The 180 polish schools and kindergartens received teaching materials on the issues covered by the campaign. Teachers received educational programs and 24 scenarios related to subject of the campaign (8 each for different age group: pre school kids, 1-3 and 4-6 classes). In the period of 2005-2013 there were a lot different actions and initiatives undertaken with police and non governmental organizations (dealing with road safety issue) on campaign "Armadillo Club Always Belt Up".

The evaluation of the campaign on usage of child restrain systems and seats belts was referred to the effectiveness of road traffic safety education [14]. To evaluate change of attitudes towards this problem, the public opinion polls and standard studies were realized in Poland with methods of observation and measurements on roads.

The studies concerning pre-test consisted of qualitative and quantitative public opinion polls carried out among children and their parents before each edition of campaign: in 2005 and in 2011.

The studies concerning post-tests specified the level of seatbelts usage by drivers and passengers. After each year of the campaign in 2005, 2006, 2007, 2011, 2012, 2013 were carried out the evaluation tests of the public opinion among adults and children aged: 4-12.

The pre-tests: the quantitative opinion polls were carried out on the representative group of parents and their children aged 4-12 (small groups of parents, children and individual interviews with children).



Fig. 1. Action and initiatives on campaign “Armadillo Club Always Belt Up”

Rys. 1. Inicjatywy i akcje podejmowane w ramach kampanii “Klub Pancernika Klik w Fotelikach”

The aim and range of the post tests were mainly to specify the level of seatbelts usage by drivers and passenger. This test was based on the common questionnaire created for this project and included: safety belt wearing rate among driver and passengers (as well as child restraint system rate), description of attitudes towards safety belt, campaign evaluation and campaign remembrance in media channels.

After the first Armadillo campaign in Poland in 2005, the post-test showed that usage of child restraint system while transporting children has increased by 5%. Seat belt wearing rate among drivers increased by 8%; among passengers in the front seat – increase of 7%; among passengers in the back seat – increased of 18%.

After first stage of the campaign (three years of EUCHIRES campaign 2005-2007) the number of correctly transported children, aged 4 – 12 increased by 33%.

Due to this educational campaign Motor Transport Institute has set the objectives of the European Commission White Paper on Transport Policy [8] to reduce the number of road deaths in the EU by 50% by 2010. By 2005 increased the seat belt wearing rate by +10 points-% (80% in front, 55% in the back) compared to 2001; by 2009, to increase the seat belt wearing rate by +20 points-% (90% in front, 75% in the back) compared to 2005.

The post-test after 9 years of campaign „Armadillo Club always belts up” showed significant change in seat belt wearing rate among drivers and passengers. 90% of children 4-12 aged are carried correctly in child restraint system.

The rate of seat belt wearing rate due to the 9 years of visible campaign “Armadillo Club always belts up” has increased:

- By 34% among children aged 4-12 by usage of child restraint system
- By 8% among passengers in the front seat,
- By 40% among passengers in the back seat [15].

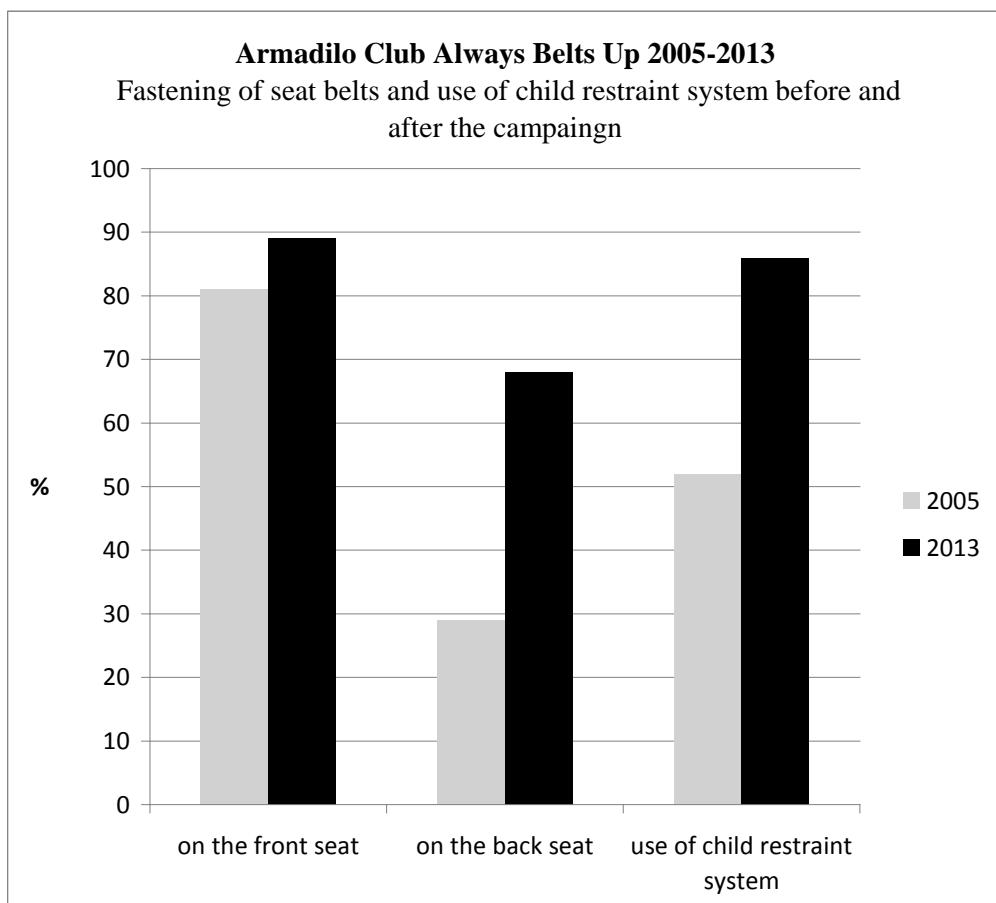


Fig. 2. Armadillo Club always belts up 2005-2013, Fastening of seat belts and usage restrain system before and after campaign [15]

Rys. 2. Klub Pancernika Klika w Fotelikach 2005-2013, Stosowanie pasów bezpieczeństwa i fotelików dla dzieci przed i po kampanii [15]

Long-term road safety education based on an incentive approach of social campaign on fastening of seat belts and usage restrain system resulted safe and responsible behavior on polish road users.

Another very good example of MTI's involvement in changing attitudes towards Vision Zero was project AVENUE. The project showed our experience to set up the Centre of Road Traffic Safety Education For Children And Youths [16]. It was a pan European project managed by European Transport Safety Council from 2010 to 2013. The goal of the AVENIUE (*Actions for Vulnerable, Elderly, Novice Drivers and Road Users in Europe – for Traffic Safety*) was to develop road traffic educational centers and provide road traffic actions for citizens. Informing and educating actions focusing on the main risk factors – speed, alcohol and non use of seatbelts were being launched. Those actions, as more successful methods of educating introduce to the road safety hazards via new technologies and innovative tools. The four types of NEST (Networks & Education for Safety in

Traffic) at different levels were developed in the project. There were: European, National, Local and Mobile nest.

According to the AVENUE project the two types of nest were being developed in Poland in Motor Transport Institute. The National one was and still is a place for sharing the knowledge and best practices in the field of road safety education. The aim of this nest is to improve quality of road safety education and increase social awareness on topics related to road safety.

The activities provided in the National nest focus on providing knowledge in the field of road safety to children and adults, as well methodical aid for teachers and organizers of after-school activities and to help families in teaching children road safety.

Visiting the National nest at the MTI children and students can follow thematic stands focused on:

- forces influencing human body (belt sledge, roll-over car simulator, collision weight),
- influence of alcohol and similar substances on organism (alco-goggles),
- vehicle in different road conditions (driving simulator),
- fatigue (multimedia tool),
- physics of driving (multimedia tool),
- reflective materials (darkroom)
- demonstration of emergency action.

The Polish National nest equipped with high quality tools, different demo simulations of human body behavior in various situations on the road such as: two belt sledges (1 seat and 4 seats), rollover car simulator, collision weight („Elephant test”), alco-goggles (Daytime: 0,8 – 1,5%, Dusk & night: 0,6 – 0,8 % Dusk & night: 1 – 1,7 %), stands to show visibility on road and helmets (mini helmets).

High school students and children were invited to the National nest for sharing best practices related to road safety and to deliver practical workshops according to the different scenarios related to each age groups of participants.



Fig. 3. Participants of the National NEST at MTI

Rys. 3. Uczestnicy szkoleń w Krajowym Miasteczku Bezpieczeństwa Ruchu Drogowego

There were some special occasion of different events (MTI 60th Anniversary, Road Safety Week) the guests had an opportunity to visit the National nest at MTI.

Another type of nest developed at MTI according to the AVENUE project was a Mobile. Its equipment: the roll-over car simulator, belt-sledges, alco-goggles, visibility and helmets simulations were highly appreciated and widely used by different road users during various events, picnics, happenings promoting road safety across the whole country such as: Road Safety Days, Safe on bike, Finale of the Great Orchestra of Christmas Charity, Safe Driver Day, preventive police campaign "Safer on the bicycle", the campaign "By bike safely to your destination", Science picnic of Polish Radio and the Copernicus Science Centre. The equipment of Mobile nest and the qualified staff of Road Traffic Safety Department help teachers and instructors schools on RSE subject.



Fig. 4. Mobile nest demonstrations at different events across country

Rys. 4. Instalacje i demonstracje w Mobilnym Miasteczku Bezpieczeństwa Ruchu Drogowego

The number of participants taking part in those events estimated AT 6 000 up to 10 000 people a year. In the period of four years between 2010 – 2014 it was up to 40 000 participants in whole Poland, who improved quality of road safety education and increased social awareness on topics related to road safety at the National and Mobile Networks & Education for Safety in Traffic.

The another European initiative on RSE we were involved in was Safeway2school project funded by European Commission within the 7th Framework Research Program in 2009-2012. The aim was to make school transportation in Europe safer for school children. Designation of a safe path from home to school and the way back by avoiding traffic to get to the bus stops was the important issue. The project used the Intelligent Transportation Systems (ITS). MTI as a coordinator in Poland cooperated with primary schools from the north suburbs outskirts of Warsaw. Their 50 school pupils age 7-12 (equipped with special transmitters - VRU unit) with their parents participated in the pilot study. The bus assistant and bus company provided transportation for the school, created a network of "smart" bus (communication student - stop - bus). Many lessons on RSE with school pupils and their parents were being held by MTI trained staff at schools as well. The parents impact on their children in an educational process is always very important, and their interaction in the area of RSE is very beneficial for both of them. MTI was responsible for preparing scenarios for different aged groups of

road users like: pedestrians, moped cyclist. Due to the polish pilot MTI implemented connection between bus, bus signs (with Intelligent Bus Stops installed on the school bus route, activated with VRU), 50 VRU and 14 bus stops (with the new sign). The results of Safeway2school project has an impact on future projects for creating more safer school rout for children in Europe [17].

As mention above there are many road safety educational programs running in Poland and other European countries. Those examples showed MTI full involvement in setting up the Centre of Road Traffic Safety Education for Children and Youths. As a provider of educational activities within the road traffic safety, MTI implemented in 2011the project of Center for Education of Children and Youth in the area of Road Safety. The aim of the project is to establish in Poland in 2019, a nationwide modern educational center. This center will combine road traffic safety issues with technology, ecology and mobility aspects of road transport, automotive history, economics and psychology of road transport. It will also have the facilities for practical training of the road traffic rules.

The innovation of the center is based on the modern approach to educational those days, which relay on interactive forms of education, feasibility experiments, independent solution of the problems, stimulating questioning. Those activity support the theoretical knowledge and allow to know science, give inspiration and encouragement to individual science actions. Across Europe there are some examples of educational centers of this type. Those centers combine the feathers of science museums as well as educational centers. They are inspiring visitors to discover and understand the world through experimentation and involvement in the creative process and promote skills, important in the 21st century like: communication, cooperation, critical and creative thinking, problem solving, and innovation. There are some examples of those museums in Europe like: Think Tank Birmingham Science Museum [18], The Science Museum in London [19] in England and the Universeum in Gothenburg, Sweden [20]. We have in Warsaw this type of place called Copernicus Science Centre [21].

Those centrums offer a wide range of stimulating and memorable on-site taught sessions, visits and outreach services at different stunning venues, all designed to inspire and engage students, help teachers and instructors. Those exceptional places are big attractions, nationwide resources. The Copernicus Science Centre in Warsaw offers different subjects of exhibitions, laboratories, workshops and others due to physics, chemistry and biology, as well as robotics, humans and the environments. There is always plenty to see and it's favorite place to go during the whole week.

Despite conducted educational activities, social communications the number of killed on roads is one of the highest in the EU [11]. Setting a central Education Center of Road Safety similar to modern science educational centers, with long lasting educational programs for schools is expected to bring significant improvement in the situation.

5. IMPLEMENTATION AND STAGES OF THE PROJECT

Currently the project Phase I Preparatory Works of the Education Center of Road Safety is financed under the Operational Program of Infrastructure and Environment 2007-2013 and is on its Top List of Major Project. The project is an important element of implementation of the national policy of road safety. There MTI's team consists of specialist are responsible for preparing and filling all necessary documentation. Today's preparation of all documentations, plans, decisions, agreements, administrative permits, concepts, technical specifications required readiness for 2016 for construction works. The next stage of the project in 2018 is to equip the building with the innovative educational tools, installations, simulations then piloting and evaluation of all conducted educational activities in the Education Center of Road Safety.

6. SUBJECTS IN THE EDUCATION CENTER OF ROAD SAFETY

The primary objective of the *Education Centre for Road Safety* is to improve continuously level of education with special emphasis on the high quality action. The society's road safety education based on the imagination's stimulation of the consequences of inappropriate behavior will lead to the

development of public awareness of road safety. This will affect the goal of reducing the number of accidents, social and economic costs [2].

The subjects presented in the center will concentrate mostly, as mentioned before on road traffic safety, as the most demanding area according to statistics in Poland [11]. The other subject will be connected with motorization issue, which are: mobility/ transport, ecology and environment, transport psychology and economics, museum of automotive industry, first aid.

The education in the center will be dedicated to each aged group and due to the road safety to all road users (pedestrians, passengers, pre-drivers, cyclist, moped cyclists, etc.).

The target group of the *Education Centre for Road Safety* will be:

- Children aged 3 to 6 years - kindergarten
- Children aged 6 to 13 years - primary school
- Young people aged 13 to 19 years - middle school / high school
- Adults (instructors, educators, caregivers of children)

The methods of educating will include indoor lessons, out door training in protected areas, discussions, group works, investigations, activities, workshops and labs. Their level of difficulty will directly correspond to the age group. The method will be divided into several parts consisting of:

- the introduction to the topic of traffic safety,
- stand demonstrations,
- demonstration of emergency action,
- a short play.

There will be permanent or periodic exhibitions on different major issues. The cooperation with nation schools will have more formalized form than during training at Mobile nest. Special trips of pupils from schools outside Warsaw is planned to take part at educational program at the *Education Centre for Road Safety*.

In the road traffic area – the large one, participants will have the chance take part in simulations to understand traffic rules and situations, through training and experience improve skills and strength proper attitudes towards risk awareness, personal safety and safety of other road users. The subject and the area will be divided to cover main components: human (safe driver, passenger, pedestrian, cyclist), road (infrastructure, design, traffic signs) and the vehicle (equipment: abs, airbag air, pedestrian detection, GPS). Each of these elements will be associated with the other. As „The human factor” plays always the most important role as a decision-maker, as the person using or abandoning the available properties, with connection to road and the vehicle – this area of road traffic safety at the Center will mostly focus on this matter. The significant impact will be put on particularly risky behavior, which affects the frequency and severity of road accidents like: safety devices (belts, helmets) or usage of alcohol and other substances (drugs, medicines). Department of road safety will focus on defined major problems like: speeding, alcohol, young drivers and safety of vulnerable road users.

Outside the educational area with possibility of training and exercising for all groups of visitors, there will be provided multimedia sections of long and short exhibits related to:

- ecology/ environment
- transport economics
- history of the automotive industry
- first aid.

Transportation aspects and mobility are another subject present at the *Education Centre for Road Safety*. The department will present different modes of transport in general (rail, air, road, sea). It is planned to create a map of Europe on which will be marked the main railway junctions, the biggest airports, seaports and route of transported goods/people (in an aspect of cost of transportation).

Transport psychology section's will bring the possibility of examining the candidates for drivers, age restrictions, limits for professional drivers, fatigue as a problem of drivers. Aspects of accident's trauma will be presented as a need for psychological support and victims' rehabilitation.

In the section of automotive history, in the museum the presentation of the development of transport - development of road network over the centuries and years in Poland and an exemplary city is expected to set up.

In the section devoted to ecology and environmental protection in transport will be presented general theoretical background regarding the quality and volume of transport, such as public transport, the number of vehicles in motion, limit entries to the cities center, different ways of propelling vehicles, as well as biofuels (electric cars), etc. Particular attention will be paid on ways to prevent and minimize the negative impact of transport on the environment via recycling wastes from End-of-Life Vehicles.

It is planned to organize a „road-kindergarten” - space adapted for children from 3 years of age and older as a place for stimulating experimentation and freedom in action. The youngest children will take actions only out of curiosity, and the whole area will be secured for their safety in terms of materials, finishes, softness, etc.

MTI's team is working on the detailed description of the educational concepts for the Center for Education of Children and Youth in the area of Road Safety. The plan for programs and activities are big concerns. High technical level of equipments, installations and programs at future center will be provided by company we started cooperation with. The Swedish company Space Production [22] was a supplier of some earlier installations – Elephant test to our Nation Nest. The Stage IT AB [23] company is a supplier of the newest e-learning digital tools for road users. The cooperation was set up during the business trip to Sweden. The aim of it was to get contacts and ideas for presenting a new concept solution due to the modern and effective approach to education in Warsaw. Our team was at science museum at the Universeum, Volvo Cars Brand Experience Centre [24], Volvo Museum in Gothenburg [25], Science Museum in London. The Volvo Cars Brand Experience Centre equipped with latest technology used in Volvo cars is a good example for interior design of exhibition stands and presentations aimed at the most important problems in road safety.

7. SUMMARY

The Educational Center of Road Safety will be launch in 2019 in Warsaw as a modern Center popularizing science like other science-museums today. The center will educate and present science due to the technical and mobility aspects, with road traffic, transport, technology, ecology. The very innovative and scientific challenging learning center, will affect not only the quality of education of children and youth in the field of road safety education by shaping the proper attitudes and behavior among road users, but will encourage to do scientific experiments of oneself in technical subjects related to the motorization. Process of educating at *Education Centre for Road Safety* will support the promotion of knowledge and understanding of traffic rules and situations, improve of skills through training and experience and strength and/or change attitudes towards risk awareness, personal safety and the safety of other road users [11].

Setting up a national Education Center of Road Safety will allow to run coherent educational activities in the field of road safety, focusing national efforts in this area and contribute to the long term goal of the European Union, which is one of the top priorities is to reduce number of killed to zero till 2050.

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