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THE INFLUENCE OF PHYSICAL EDUCATION LESSONS IN THE PRACTICAL PREPARATION OF STUDENTS FOR OBTAINING THE DRIVING LICENCE

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ABSTRACT. The purpose of this study is to explore the influence of physical education lessons in the practical preparation of students for obtaining a driving license. In this respect, the exercises used in physical education lessons, systematized and appropriately dosed, help to educate ambition, courage, distributive attention, calmness, tolerance, perseverance, fast thinking, capacity for anticipation, etc. To achieve the purpose of this paper, two questionnaires were developed. The first questionnaire, with 5 questions, was addressed to a number of 50 driving instructors. For the quantification of the answers, they had to refer to a number of 10 students and answer numerically the answer variants of the question, so that the total sum of the answers to be 10. The second questionnaire, with 4 questions, was addressed to students participating in physical education lessons. For all questions, the answers given had to include all answer variants, percentagewise, so that the total sum of the answers to a question to be 100%. The questionnaire was distributed to 50 students who attended the driving school. After analysing the highest percentages obtained from the students' answers, it was found that the low results in the practical test for obtaining the driving license are due to poor motor coordination, due to the fact that students are not able to think fast and to find solutions in situations that arise and finally they are not able to cope with the traffic congestion, especially when there are drivers who do not follow the traffic rules. The analysis of the answers given by the driving instructors to the questions led to the conclusion that students are very rushed and do not have patience to listen to the whole explanation given by the instructor, they have poor distributive attention and poor coordination of motor and intellectual activities.

Keywords: *practical abilities, skills, distributive attention, physical education, driving license, practical preparation*

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REZUMAT. ***Influența lecțiilor de educație fizică în pregătirea practică a elevilor pentru obținerea permisului auto.*** Acest studiu şi-a propus să exploreze influenţa lecţiilor de educaţie fizică în pregătirea practică a elevilor pentru obţinerea permisului auto. În acest sens, exerciţiile folosite în lecţiile de educaţie fizică, sistematizate şi dozate corespunzător, ajută la educarea ambiţiei, curajului, atenţiei distributive, calmului, toleranţei, perseverenţei, gândirii rapide, capacităţii de anticipare etc. Pentru realizarea scopului lucrării au fost elaborate două chestionare. Primul chestionar, cu 5 întrebări, a fost adresat unui număr de 50 instructori auto. Pentru cuantificarea răspunsurilor, aceştia trebuiau să se raporteze la un număr de 10 elevi şi să răspundă numeric la variantele de răspuns ale întrebării, astfel încât suma totală a răspunsurilor să dea 10. Al doilea chestionar, cu 4 întrebări, a fost adresat elevilor care participă la lecţiile de educaţie fizică. La toate întrebările, răspunsurile oferite trebuiau să cuprindă toate variantele de răspuns, procentual, astfel încât suma totală a răspunsurilor la o întrebare să fie 100%. Chestionarul a fost distribuit unui număr de 50 de elevi care au urmat cursurile şcolii de şoferi. După ce au fost analizate cele mai mari procente obţinute la răspunsurile elevilor, s-s constatat că rezultatele slabe la susţinerea probei practice pentru obţinerea permisului auto se datorează unei coordonări motrice deficitare, a faptului că elevii nu sunt capabili să gândească rapid şi să găsească soluţii în situaţiile apărute şi în final nu sunt în stare să se descurce în aglomeraţia din trafic, mai ales atunci când apar şi conducători auto care nu respectă regulile de circulaţie. Analiza răspunsurilor oferite de instructorii auto la întrebările chestionarului, a condus la concluzia că elevii sunt foarte grăbiţi şi nu au răbdare să asculte întreaga explicaţie dată de instructor, că au o slabă atenţie distributivă şi o coordonare redusă a activităţilor motrice cu cele intelectuale.

Cuvinte-cheie: *abilităţi practice, aptitudini, atenţie distributivă, educaţie fizică, permis auto, pregătire practică*

INTRODUCTION

Educational institutions must provide students with the best possible conditions for acquiring knowledge, developing abilities (skills, capabilities, aptitudes) and attitudes needed to adapt and integrate in a constantly changing society. Physical education aims the formation of modern human through multilateral development from a physical, intellectual, ethical, aesthetic point of view, in relation to the demands of the future contemporary society, according to the real aptitudes, on the basis of which the coordinates of the human personality are outlined; benchmarks that concern 5 aspects: sanogenesis, motility, motor skills, mental and attitudinal skills, specialized knowledge (Curticăpean, 2015). According to the Physical Education School Program for grades IX-XII, (2009),

the general objective of Physical Education discipline is to develop bio-psychomotor skills and the ability of students to act on them, in order to maintain optimal health, ensure a harmonious physical development and manifest a motor capacity conducive to professional and social integration. Many young people who turn 18 want to go to the driving school and take the exam to obtain the driving license. However, the driving exam is often difficult to pass. According to the report of the Directorate General for Driving Licenses and Registrations (DGPCI), in 2022, the pass rate for the first exam was 50.5% in Argeş County (Vlad, 2023).

In the process of practical preparation for obtaining the driving license, a lot of knowledge, skills, aptitudes, attitudes and qualities acquired during physical education lessons in pre-university education are also necessary. In order to make the practical training of future drivers as effective as possible, several aspects must be taken into account: distributive attention, memory, fast thinking, listening skills, vigilance, practical skills, hand-foot-eye coordination, reaction (reflexes) and execution speed, physical and mental endurance, anticipation, maintaining concentration over long periods, etc. Reaction speed is a motor skill extremely necessary for drivers. This skill is successfully developed during physical education and sports lessons. In traffic, drivers are required to use reaction speed very often. There is a mental reaction time (the time between perceiving a dangerous situation and making a decision) and a physical reaction time (the time between making a decision and the body's reaction, for example, applying the brake pedal or manipulating the steering wheel to avoid a dangerous situation). Dragnea & Mate-Teodorescu (2002), consider that the literature evidence shows that reaction time is different when using different signals. Thus, at a light signal, the latency time is 180 msec, at a sound signal, 150 msec, at tactile arousal 140 msec, at pain 800 msec. Reactions to different signals can be simple or complex. The simple reaction is a correct response to a previously known signal, but which occurs unexpectedly (e.g., the sound of a gun at the start). This type of reaction is particularly important not only in sport, but also in everyday life (just think about driving a car).

Neculau et al. (2005), state that skills are the relatively stable mental and physical attributes that enable people to perform certain activities successfully. The presence of skills is evidenced by the ease and speed at tasks performing and the high quality of the results (...) There are different typologies of skills. According to the nature of the mental processes involved in skills, we distinguish between sensory skills (visual, auditory, olfactory acuity), psychomotor skills (manual dexterity), intellectual skills (intelligence). Also, psychomotor education in physical education lessons is a huge benefit for future drivers. Constantin (2020) considers that psychomotricity is a complex function that integrates and combines motor and mental elements that determine the regulation of individual behavior, including the participation of various processes and mental functions,

ensuring the proper execution of response to various situations, stimulus. Motricity as a functional substructure of psychomotority is the global name of the muscular reactions through which the movement of the body or its various components is achieved. This quality of movements and especially of some gestures is determined by the way the information is received and interpreted, as well as by the quality of the response act, which is influenced not only by motor factors, but also by cognitive, affective, motivational and volitional factors. It is a complex act, which combines motor and psychic abilities in performing the action, and this act is called a psychomotor act. Studies about movement and the relationship between body and mind are a concern topic in various domains, domains which impose a global vision over the human being. To define the "unitary man", the tendencies imposed the appearance of a new and complex area which can treat /discuss the progress and motor acquisitions of the human being coordinated by mental activity and fulfilled by creative, affective and social development. This is how psychomotricity appeared, as a complex area which responds to human needs according to education, re-education, therapy, an area discerned as an entire system conditioned by the interaction between children and adults, between education and growing up, between movement and mental functions (Talaghir, Berdilă & Iconomescu, 2019).

The elements of psychomotricity are valuable when being integrated in an adapted unitary motric behaviour adaptable at the same time to the different changed situations. Leading one's body presumes the existence of a background filled with qualities structured by practice and adapted to mechanisms of anticipation and control (Moldovan, Enoiu & Albulescu, 2012).

The main components of psychomotricity, according to Epuran (2005), are the following: kinesthetic sensitivity; sense of balance; sense of rhythm and appreciation of short durations; limb coordination - homolateral or heterolateral; eye-hand or eye-foot coordination; general coordination; agility; accuracy and stability of movements; assessing the actions opportunity at different points in time; laterality; body schema; ideomotricity.

We consider that practical preparation for obtaining a driving licence is very similar to motor learning in physical education lessons. Fitts (1964) and Schmidt (1982) cited by Neagu (2010), emphasize the characteristic of three-stage organization of the motor learning process as follows:

- the cognitive or verbal motor stage, where learning is marked by intense cognitive activity. The motor task is entirely new; movements are abrupt and fragmented, the attention demand is maximal, almost completely absorbing all the coordinative resources;

- the motor stage is the second sequence, characterized by a selectivity of motor programs;

- the autonomous stage, the last in the view of the two authors, which is marked by the automation of motor engagement processes.

Before enrolling in driving school, every person must take a compulsory psychological test to assess their driving skills. The psychological test consists of a written examination and a practical examination on a computer with two-foot pedals and two hand buttons, where various tasks received are performed. The aim of the practical examination of the psychological driving test is to check the following: speed of reaction to unexpected situations - focuses on the fast response to unexpected situations on the road; concentrated and distributive attention - as attention is one of the most demanded mental abilities while driving (concentration of attention, keeping several objects in the attention zone simultaneously, as well as the candidate's observational skills are tested); perception of spatial relations and time; psychomotor skills - include coordination and complex reactions, such as hand-foot synchronisation, self-regulation, speed, accuracy, vigilance, fatigue resistance. Thus, to some extent, the personality profile of the subject is also shaped: neuropsychological stability, temperament, risk-taking, conflict, social integration, responsibility, frustration tolerance level (Danco, 2024).

Thinking is the most important distinguishing feature of the human psychic, defining humans as the subject of logical, rational knowledge. It is so because thinking produces substantive changes in the information with which it operates. While other psychic mechanisms produce superficial changes, the nature of the information remaining the same, thinking changes the nature of the information, it makes the leap from the non-essential to the essential, from particular to general, from concrete to abstract, from external - accidental to internal - invariable (Eţco et al., 2007). Attention is the phenomena of selective activation, concentration and orientation of psych-neural energy for optimal mental activity, especially higher sensory and cognitive processes (Buzdugan, 1999). Khan and Hillman (2014), cited by Silva-Capella et al. (2021), consider that attention is a widely studied concept in today's science, especially in recent years. Concentration of attention is manifested by a more stable orientation of mental activity, by mobilizing all the information material held with regard to the object of attention, and by an increase in the intensity of mental activity in relation to the fixed object (Buzdugan, 1999). Distributive attention is, in fact, a person's ability to efficiently perform multiple tasks simultaneously. This type of attention is in high demand among people learning to drive a car, given the fast pace of today's traffic and many tasks that the future driver must perform correctly at the same time. Distributivity of attention represents the simultaneous performance of several activities, with the condition that at least some of them are relatively automated (Buzdugan, 1999). "To be careful" means to be prepared in advance for what you are about to undertake, to be on alert, not to be taken

by surprise, not to be caught off guard, to do the right thing, to orient yourself in advance in the field of events, to control your reactions, etc. (Golu, 2005). Attention is an indispensable mental function at any moment of existence, having the role of self-regulating mental activity on micro-intervals and intermittently. Attention is understood as the function through which the elective orientation and concentration of mental activity on a limited group of defined objects, phenomena and actions is achieved. Without its participation it is not possible for the psychic to perform selective activity, which has repercussions on the clarity of perceptions and their fixation in memory (Caşcaval, 2007). In the psycho-behavioral system, attention is a highly complex activity characterized by the sphere of inputs and outputs. At "input" we are constantly confronted with an avalanche of stimuli, of different modalities (auditory, visual, olfactory, cutaneous-tactile, etc.) and configurations (intensities, frequencies, shapes, colors, tastes, etc.), only some of which carry significant and congruent information about what we are doing at the moment or what we are going to do later, the rest being indifferent or neutral. In the sphere of "output" it is necessary to select from the general repertoire of possible responses the most appropriate reaction at the right time (Golu, 2005).

Popovych et al., (2023), states that in her research A. Nobre (2001) examined the scientific problem of orientation of attention towards a moment of time. This problem is considered in terms of neuropsychology. The research confirmed the possibility of using a time frame for managing selective attention. A non-invasive methodology allowed identifying the involved systems and mechanisms in brain and establishing that an individual is able to direct attention selectively towards different moments of time, improving behavioral indexes. The left frontal lobe is involved in spatial orientation. The neural system through sensori-motor zones connected with anticipation processes facilitates orientation of attention depending on attributes of a stimulus. It is obvious that optimization of behavioral activity through time orientation has an impact on a delay and amplitude of potentials. These potentials, in their turn, have an impact on movement reactions and decisions. The obtained results demonstrate flexibility of the mechanisms of functions of attention in the human brain. Revlin, (2013) cited by Szczypińska M. and Wmikicin M., (2019) considers that at present, attention is specified as the process of focusing on one task or source of stimuli despite distraction. Attention makes it possible to precisely register some aspects of the environment, enables learning and quick reaction.

Memory is the psychic process by which the imprinting, preservation and reactualization of previously acquired cognitive, affective, volitional experience is carried out in the form of recognition or reproduction (Negură & Losîi, 2010). Cosmovici and Iacob (1999) consider that memory is the fundamental psychological function that makes it possible to fix, preserve, recognize and reproduce

psychological phenomena. There is an imagistic memory, ensuring the preservation and reproduction of representations, a verbal-logical memory relating to ideas, an affective memory (creating the possibility of reliving emotions, feelings) and a motor memory (making it possible to form skills and aptitudes). Memory is a quality of thinking that stores learning experiences, and through correlation and accumulation it enables the reproduction of knowledge and skills, formed through motor acts and actions, as faithful as possible to previous actions (Scarlat & Scarlat, 2003).

No activity, including driving, can be carried out with optimum efficiency unless it draws on previous experience in the form of both information structures (images - representations, knowledge, etc.) and operational-executive schemes. The driver makes use in each sequence of the specific informational-instrumental elements developed and learnt previously. Therefore, in regulating driving behaviour, memory becomes an absolutely indispensable component (Cașcaval, 2007). In any learned act there are aspects of stereotypy and variability. For example, in driving a car: starting from the standing position is always done with the same movements, but once out on the road, steering, accelerating and braking depend on the shape of the route and the obstacles encountered. In some activities, monotony and stereotypy prevail, while in others we find a lot of variability (Cosmovici & Iacob, 1999). Driving a vehicle, especially during driving school, is an extremely complex activity. Vehicles have mainly 6 operating controls, 3 hand-operated (gear lever, steering wheel with on-board controls and the emergency brake) and the other 3 foot-operated (clutch pedal, brake pedal and accelerator pedal), constituting the devices that ensure that the car is set in motion, the steering is maintained on the desired trajectory and the speed is reduced to a complete stop (Cantea, 1994). In today's busy traffic and stressful environment, attention during driving is particularly important. (...) Among the main causes of inattention behind the wheel are fatigue, the consumption of alcohol or medicines contraindicated for driving, the drivers suffering due to illness, etc. (Beda, Stoleru, Ene & Diniță, 1984). To the causes mentioned above by the cited authors can be added other current reasons for inattention behind the wheel such as: drug use, smoking, talking on the phone, eating, drinking, arguing with others in the car, nervousness due to heavy traffic, manipulating the radio, changing a CD, etc.

PURPOSE OF THE STUDY

The aim of the study was to explore the influence of physical education lessons in the practical preparation of students for obtaining the driving licence.

MATERIAL & METHODS

The research methods used were specialty literature analysis, questionnaire survey, statistical-mathematical method and graphical method. To achieve the purpose of the study two questionnaires were developed. The first questionnaire, with 5 questions, was addressed to a number of 50 driving instructors. For the quantification of the answers, they had to refer to a number of 10 students and answer numerically to the answer variants of the question, so that the total sum of the answers to be 10. The second questionnaire, with 4 questions, was addressed to students participating in physical education lessons. For all questions, the answers given had to include all answer variants, percentagewise, so that the total sum of the answers to a question to be 100%. The questionnaire was distributed to 50 students who attended the driving school.

RESULTS

After analysing and interpreting the questionnaires we obtained the results presented below. To question 1, addressed to driving instructors - "From your point of view, what is the attitude of students when you explain them what they have to do in traffic or when performing specific manoeuvres?", the following answers were obtained: 26.80% of the students are receptive and attentive to the explanations given by the instructor and when they do not understand something they ask questions; 37.60% are very hurried and do not have the patience to listen to the whole explanation given by the instructor, intervening with questions.

35.60% do not ask questions, even if they do not understand, but wait to be told step by step what to do while driving or performing manoeuvres (figure no.1). To question 2, addressed to driving instructors - "What do you consider is the level of development of distributive attention among the students you are teaching in order to obtain the driving license?" the following results were obtained: 18.60% of students have very good distributive attention, 19.40% - good, 41.40% - poor and 20.60% - very poor. It is noted that the largest share is held by students with poor and very poor distributive attention (figure no. 2).

To question 3 - "What is the main reason for which some students choose to do the driving school on automatic gearbox vehicles, even though they know that this type of license, once obtained, does not allow them to drive manual gearbox vehicles?", the following answers were obtained: 22.80% of students choose this option for commodity; 58.40% due to their inability to use both legs simultaneously; 14.40% because of age and only 4.40% because of medical problems. Thus, it can be observed that more than half of the students (58.40%) choose to do the driving

school on automatic gearbox vehicles due to the difficulty of using both legs at the same time (figure no.3).

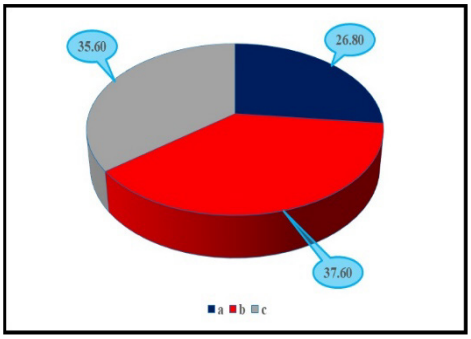

Figure 1. Graphical representation of responses to question 1

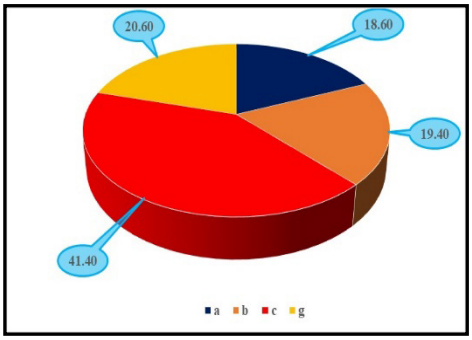

Figure 2. Graphical representation of responses to question 2

Answers given by instructors to question 4 - "For what situations do you have more work to do during the driving lessons in your opinion?" revealed the following: 26.40% - inattention of students; 15.40% - commodity of students; 13.8% - poor theoretical preparation; 44.40% - poor coordination of motor and intellectual activities, more precisely performing several things at the same time (figure no.4).

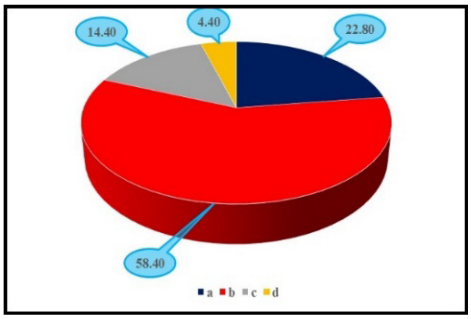

Figure 3. Graphical representation of responses to question 3

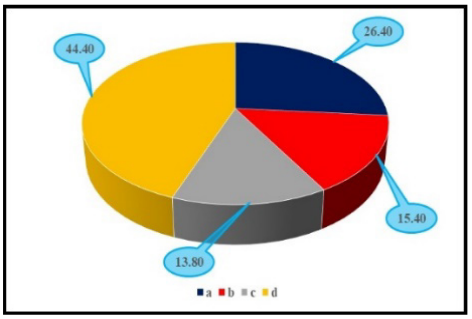

Figure 4. Graphical representation of responses to question 4

To the last question - "Which are the skills that should be improved by your students in order to acknowledge the content of the lessons with maximum efficiency?" The driving instructors consider that in 18.40% of cases practical skills should be developed; 14.20% - listening skills; 36.80% - distributive attention; 15.80% - way of thinking and 14.80% - general attitude. As can be observed, the most deficient skill is distributive attention (figure no. 5).

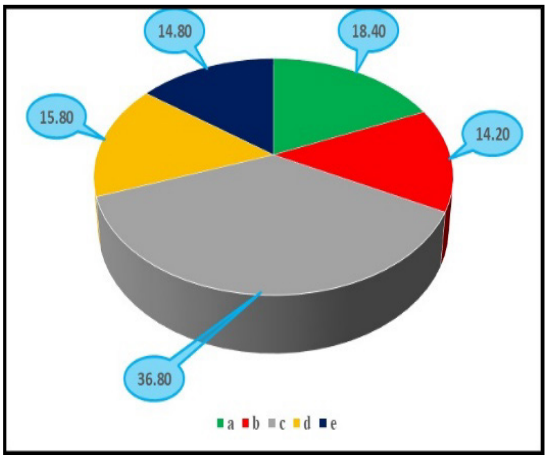

Figure 5. Graphical representation of responses to question 5

To question 1 addressed to the students - "which are the aspects that you find most difficult during the practical preparation lessons for obtaining the driving license?", 25.60% of the students consider that the elements of distributive attention (answer "a"); 32.70% - motor coordination (simultaneous use of hands and feet while making decisions about what to do in the situation encountered (intersection, pedestrian crossing, overtaking, etc. and performing the maneuvers correctly) - (answer „b"); 23.80% - applying theory (traffic legislation) - (answer „c") and 17.90% - maintaining attention and concentration over long periods of time (answer „d"). As can be seen from figures 6a and 6b where the students' answers are recorded, motor coordination (32.70%) is the one that creates the most difficulty for students during practical lessons.

To question 2 „What skills acquired during physical education lessons do you think would help you learn to drive a car more easily?" the students answered as follows: 22.40% - development of quick thinking according to the situations; 21.70% - development of reaction and execution speed; 19.40% - development of coordination; 21.30% - development of distributive attention and 15.2% increase of physical and mental resistance (figures no. 7a and 7b).

To question 3 - "Do you consider that during physical education lessons you carry out enough activities to help you acquire the skills needed to obtain the driving licence?", 36% of students answered affirmative and 64% answered negative. Figures 8a and 8b show the responses of the 50 students who took part in our study.

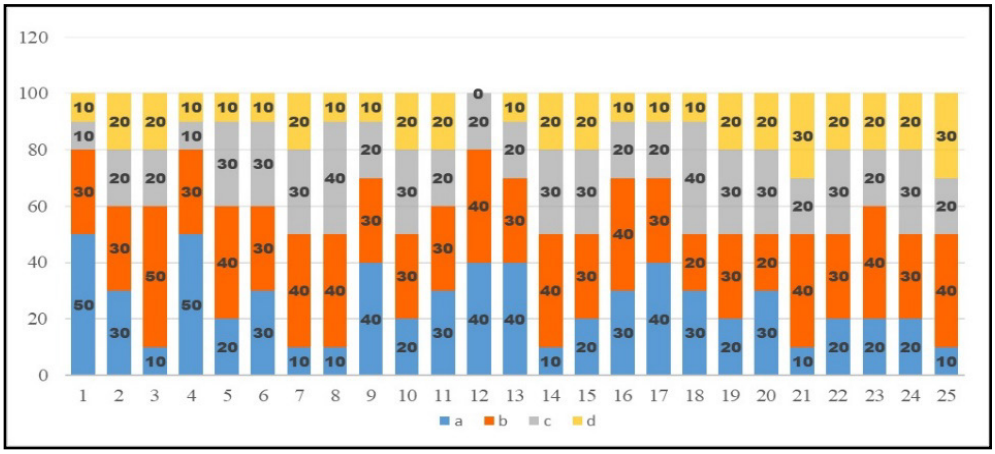

Figure 6a. Graphical representation of students' answers to question 1 (students 1-25)

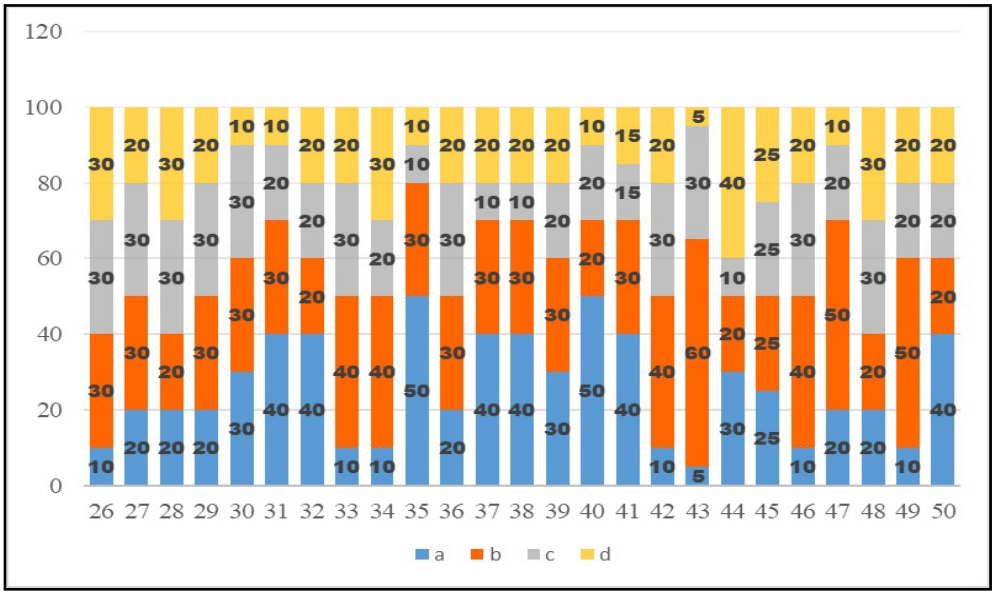

Figure 6b. Graphical representation of students' answers to question 1 (students 26-50)

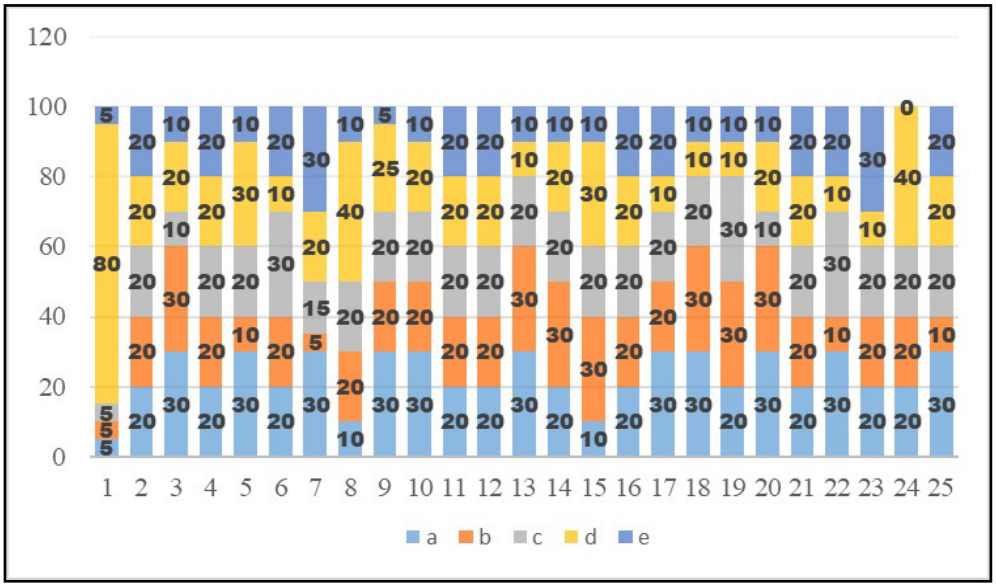

Figure 7a. Graphical representation of students' answers to question 2 (students 1-25)

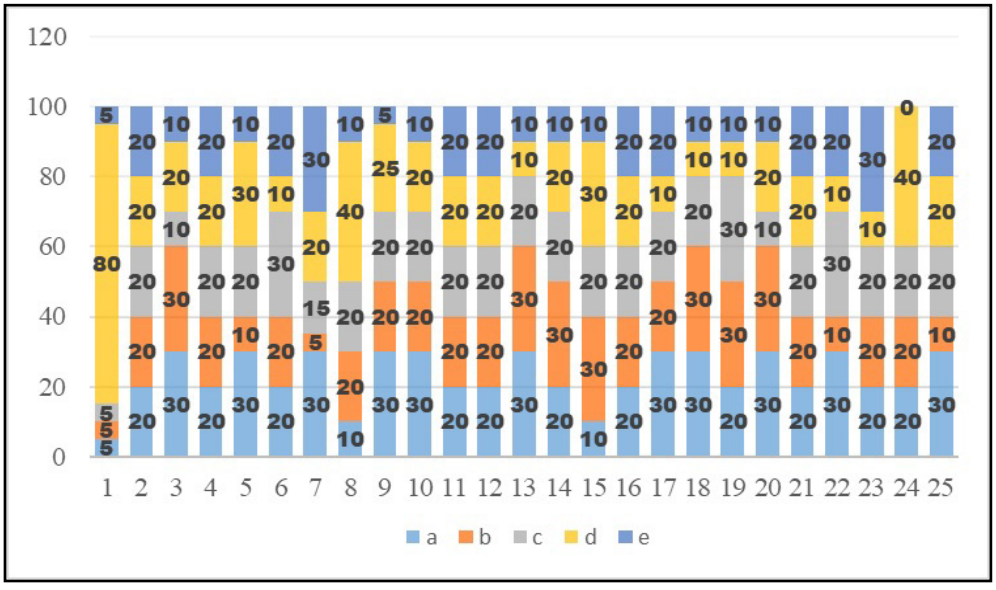

Figure 7b. Graphical representation of students' answers to question 2 (students 26-50)

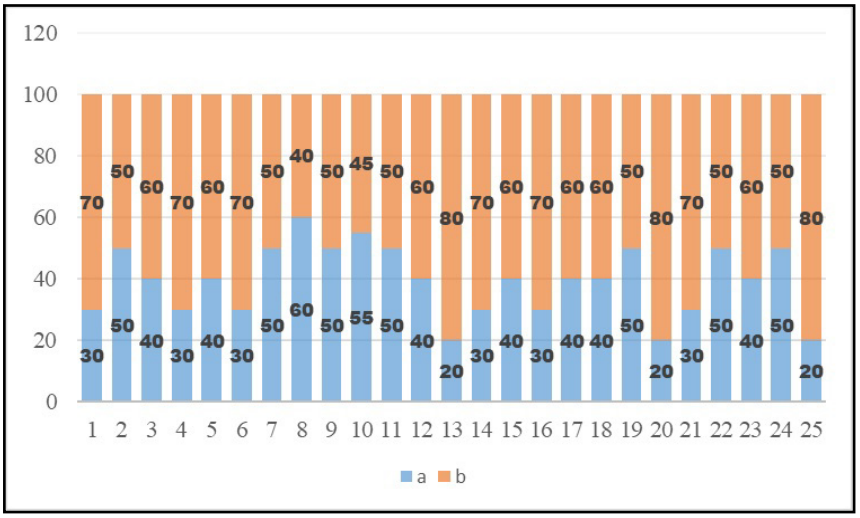

Figure 8a. Graphical representation of students' answers to question 3 (students 1-25)

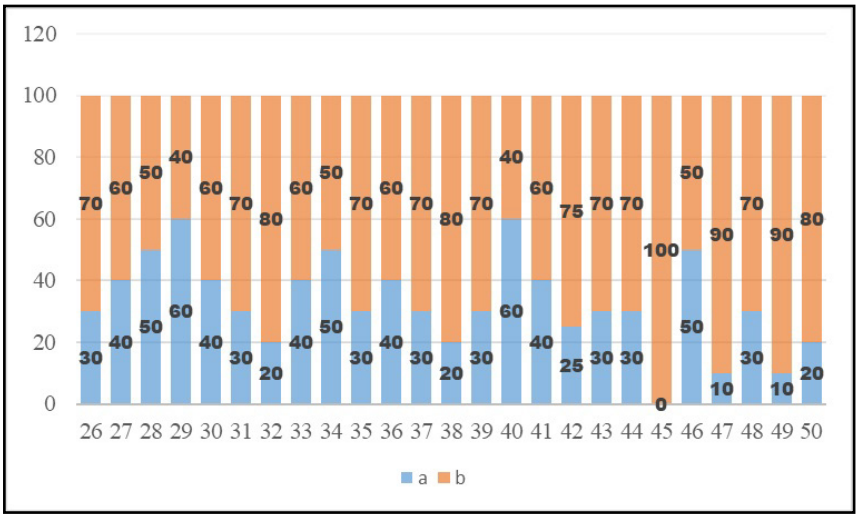

Figure 8b. Graphical representation of students' answers to question 3 (students 26-50)

Students' answers to the last question of the questionnaire - "Which are the factors that tire you most during the driving lessons?" highlight that 31.90% of the students consider that they get tired the most when they perform all the necessary manoeuvres to drive the vehicle properly on the routes indicated by the instructor and follow the traffic rules; 36.30% - traffic congestion and the fact that some

drivers do not follow the traffic rules, 19.50% - the inability to do more things at the same time and 12.30% of the students consider that they get tired the most during driving lessons because they lose their temper when things do not turn the way they should.

DISCUSSION

Driving a car and, especially, the specific conditions in which road traffic takes place today, require from the driver of a motor vehicle, in addition to physical integrity, a number of particularities relating to the mental state of the person concerned. These are, primarily, those skills which facilitate both acknowledging driving the vehicle and practicing this activity in safe conditions (Ciobotaru & Dumitrana, 1990).

The most important condition for a person to learn is attention. No conscious human activity can take place normally without sustained attention. Therefore, the degree of development of attention, of its qualities (stability, concentration, distribution, volume, mobility) is the basic element of learning capacity, which led the Czech pedagogue Comenius to advise educators: "let us speak only for those who listen, let us teach pupils only when they are attentive" (Drăgan & Partenie, 1997). Beda, Stoleru, Ene & Diniță (1984) consider that inattention behind the wheel is frequently caused by emotional anxieties, thoughts, concerns about solving work or family problems, euphoric moods following successes or, on the contrary, worry, anxiety due to failures. In other cases, inattention behind the wheel is caused by the driver's temper. Tests of all kinds fail in some cases to prevent some people becoming drivers, perhaps quality people, but superficial, distracted when they are behind the wheel, and society pays the price for such errors. There are also cases where people have not been taught to educate their attention. It seems curious, but it is true. Even during driving lessons, the instructor has to train and educate his students to pay attention. Not simplistically, in a general way. They have to be taught specifically how to distribute their attention, how much of it should be devoted to the front side, on the lateral or behind the vehicle.

Romania comes first in Europe at the number of car accidents. According to the National Institute of Statistics, more than 70 accidents occur on the country's roads every day. In 2022, an average of 76 accidents occurred every day, which means more than 28,000 accidents in a single year across the country. As a result of these accidents, an average of four Romanians died every day. Most accidents occurred in Bucharest, followed by Iași, Cluj, Constanța, Suceava and Mureș counties (Chirilă, 2023). Knowing these statistics, we realize even more how important it is that, after finalizing driving school, the future driver is theoretically and practically well prepared to be able to drive safely on the road, both for himself and for other traffic participants.

CONCLUSIONS

Analyzing the highest percentages obtained at the students' answers, we notice that the low results in the practical exam for obtaining the driving license are due to poor motor coordination, to the fact that students are not able to think quickly and to find solutions in situations that arise and finally they are not able to cope with the traffic congestion, especially when there are drivers who do not follow the traffic rules. From the analysis of the answers given by the driving instructors to the questions of the questionnaire, we find out that students are very rushed and do not have the patience to listen to the whole explanation given by the instructor, they have poor distributive attention and reduced coordination of motor and intellectual activities. The school curriculum for Physical Education and Sport discipline sets out general and specific competences and allows teachers to use certain teaching aids corresponding to the content provided. Considering the competences to be formed through physical education lessons, it can be concluded that this subject in the curricula is one which contributes to a very large extent to the acquiring of all the elements necessary for the most effective practical preparation of future drivers. Therefore, many of the shortcomings noted in our study can be improved through using, by the teachers, of specific means in the physical education lesson in pre-university education targeting the following aspects: distributive attention, memory, fast thinking, listening skills, vigilance, practical abilities, hand-foot-eye coordination, reaction speed (reflexes) and execution, physical and mental resistance, anticipation ability, maintaining concentration over long periods, etc.

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