

NATIONAL SPORTS ACADEMY “V. LEVSKI”
Department of Psychology, Pedagogy and Sociology



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**A SPORTS PEDAGOGICAL MODEL FOR THE
DEVELOPMENT OF SOCIAL SKILLS IN STUDENTS FROM
THE MIDDLE SCHOOL STAGE OF THE BASIC
EDUCATIONAL LEVEL**

AUTHOR'S ABSTRACT

Sofia, 2023

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For awarding the educational and scientific degree “Doctor”
Professional direction 1.3. Pedagogy of training in physical
education and sports

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The dissertation work was discussed at an internal defence before an extended scientific collegium of the Department of "Psychology, Pedagogy and Sociology" on 04.04.2023 and is directed for an official defence.

The work contains 183 pages (including a bibliography and appendices), illustrated with 27 tables and 14 figures. The academic literature review contains 149 literary sources, of which 26 are Cyrillic, 119 are Latin, and 4 are normative documents.

The scientific jury for conducting a public defence procedure

Internal Members:

1. Prof. Tatiana Yancheva, PhD
2. Assoc. Prof. Ina Vladova, doctor

Reserve member: Associate Professor Galina Domuschieva-Rogleva, doctor

External members:

1. Prof. Dimitrinka Tsonkova, doctor, VTU
2. Assoc. Iliyana Petkova, doctor, SU
3. Assoc. Prof. Vladislav Gospodinov, doctor, SU

Reserve member: Prof. Ludmil Petrov, doctor, VTU

The public defense of the dissertation work will take place on June 28, 2023 at 15:00. in Hall A3 of the Vasil Levski National Academy of Sciences (Student City).

The materials for the defense of the dissertation work are published on the website of the NSA "Vasil Levski", at www.nsa.bg and are available in the library of the NSA.

Introduction

Social skills have been the subject of active research, especially in the last two decades. They have always been of great importance for the successful performance of each person, in interactions with others, and for active adaptation to different spheres of the social environment. Under modern conditions of development, their importance is equated with that of professional skills. In the Lisbon Strategy, which aims to make the European Union the most dynamic and competitive economy in the world, social skills and civic competencies are listed as one of the seven "key competencies" that European citizens should possess.

The acquisition of social skills by the young generation is directly related to issues of their diagnosis, the influence of the factors on which their mastery by young people depends, the promotion and application of effective training methods and good practices.

Some of these issues are discussed in the work, with a central place being devoted to the question of the role of sports educators, especially physical education and sports teachers, in the process of building social skills in students. An analysis of the available scientific literature on the subject was made, as a result of which the essence and types of social skills, the methods for their evaluation and diagnosis and the difficulties in the research conducted in the country in this regard, were presented. Special attention is paid to the reflection of social skills in the normative documents of education, as a goal of the school institution, and to the possibilities of physical education and sport as a school subject to stimulate the development of students not only in terms of their physical qualities and healthy lifestyle but also related to their social development.

The main contributions of the dissertation work are the development of a sports-pedagogical model to allow purposeful work in the lessons of physical education and sports for the development of social skills, a study of the practice in our country regarding the work aimed at overcoming deficits in this area, a study of awareness and the attitudes of sports pedagogues towards increasing their qualifications and applying the model proposed in the dissertation work, as well as others, in their practice.

The obtained results of the scientific development reveal the need for targeted activities for the implementation of diagnostic methods for intervention in the field of social skills among students in the conditions of physical education and sports lessons in the Bulgarian school.

Chapter One

Theoretical foundations of the study

The theoretical analysis of the study is presented in several paragraphs, examining the main aspects of the studied problem.

In the first sub-chapter **I.1. Social skills - essence and research directions** the different definitions and features of social skills are presented and discussed over 5 paragraphs.

A central place is given to the various definitions of social skills, and various recurring themes in them are analyzed, namely - skills as abilities, as patterns of behaviour, as personal characteristics, as part of social competence -

I.1.1. Social skills - essence and features.

Paragraph **I.1.2. “Types of social skills”** is aimed at presenting the individual classifications, structures and components of social skills.

In the following paragraph **I.1.3. Factors for the development of social skills** emphasis is placed on the main factors (family, school and peer environment) having an impact on the development of social skills. A special part of the analysis is devoted to the role of sports and physical education in school.

The assessment of the possibilities for the formation of social skills among students from the middle school stage of the basic education degree requires the outline of the essential changes in development that occur in this complex period of transition from childhood to adulthood. These changes are traced in paragraph **I.1.4. Development of social skills in adolescence.**

One of the essential issues related to the conduct of research on the level of social skills among students and to guide pedagogical practice in this regard refers to specifying the main parameters and requirements in the diagnosis of social skills, presented in paragraph **I.1.5. Diagnosis and assessment of social skills.**

The second sub-chapter **I.2. Sports-pedagogical activity in school and development of students' social skills** covers the activity in practical and normative terms.

In paragraph **I.2.1. Social skills in the legal basis of the educational system in the Republic of Bulgaria**, an analysis of the legal basis has been made, showing that the modern preparation of students in the middle school stage of the basic education level is aimed both at ensuring their orientation to a certain field of scientific and/or social activity through profiling, as well as to core competencies with a broad application profile.

In the following paragraph **I.2.2. Peculiarities of training in physical education and sports in the middle school stage of the basic education degree** examines the peculiarities and possibilities of the subject of physical education and sports in school for the development of social skills among students.

Special attention is paid to the impact of the COVID-pandemic on the opportunities for physical activity and communication among students - **I.2.3. The COVID-19 pandemic and its impact on physical education and communication among students.**

Sub-chapter **I.3. Pedagogical models for the development of social skills**, presented in two paragraphs, emphasizes the main approaches to the creation of pedagogical models for the development of social skills and pays attention to the good practices and methods used in the school environment - **I.3.1. Basic approaches for creating pedagogical models** and **I.3.2. Good practices for developing social skills in a school environment.**

In the last paragraph of chapter one, as a result of the analysis of our available sources, presented in the literature review, several basic generalizations regarding the essence and features of social skills are drawn - **I.4. Summaries resulting from the content of the literature review.**

Chapter Two

Experimental design

II.1. Model and hypotheses of the empirical study

II.1.1. Experimental model

Based on the theoretical analysis, an experimental model was developed for the present study. Its components reflect the variables included in the subject of the study and the relationships between them. The factors under the influence of which social skills are built, in the process of personal development of students, are family, school and sports, which outline the context of the researched problem. The impact of the school, in an experimental plan, has been examined through the teaching of physical education and sport. A central place is given to the sports-pedagogical models applied in the learning process and their impact on the formation of social skills among students (Fig. 2).

The experimental study traces the dynamics of a certain number of social skills, namely - communication skills, empathy, assertiveness, cooperation, self-control and responsibility.

As a schematic analogue of the actual research process, the model contains the main parameters of the research design, namely:

Subject of research - social skills, physical education and sports classes by applying a sports-pedagogical model;

Dynamic characteristics of the subject - current condition and development possibilities;

Object of research – students from the middle school stage of the basic educational level and teachers of physical education and sports.

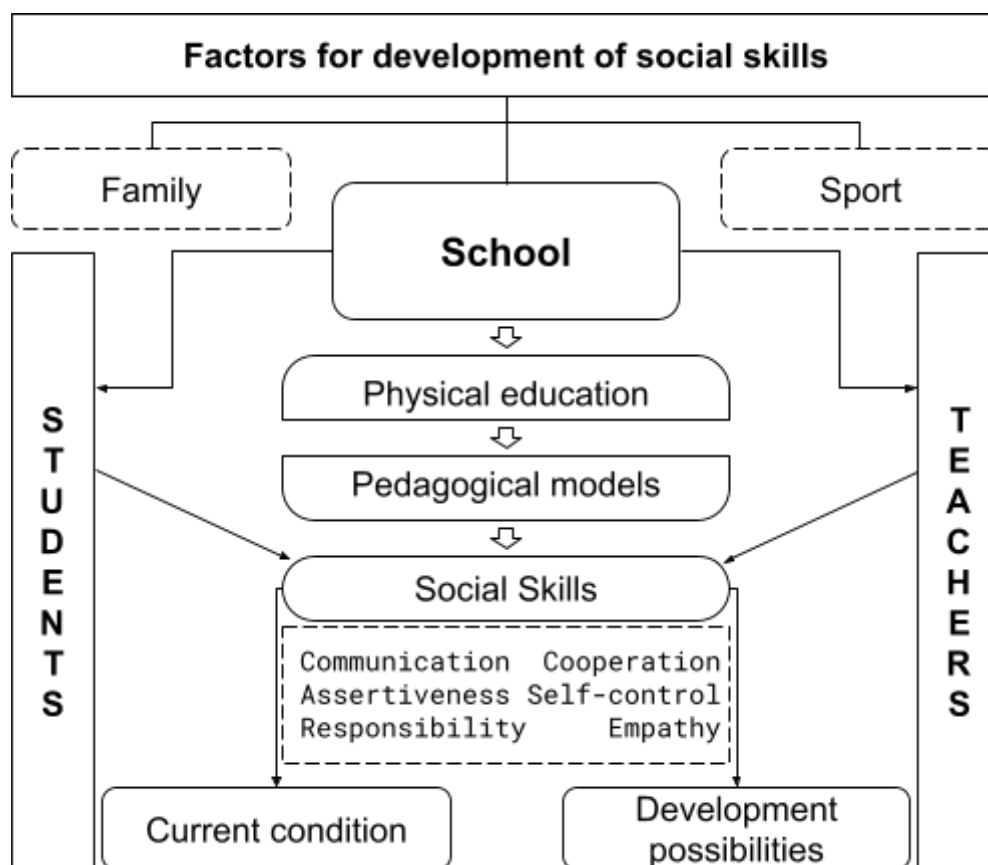


Fig. 2. Model for experimental research

II.1.2. Research hypotheses

As a result of the performed theoretical-logical analysis regarding the essence, features and prerequisites for the development of social skills, the following hypotheses were formulated:

1. We assume that the sports-pedagogical activity in the junior high school stage of the basic educational degree in Bulgarian schools has specific features, which are a favourable prerequisite for the development of the social skills of students;
2. We admit that in the modern practice of sports-pedagogical activity in school, the formation of social skills among students is not realized as a purposeful activity;

3. We assume that the application of appropriate pedagogical models by physical education and sports teachers will have a positive effect on the development of social skills among students from the junior high school stage of the basic education level.

II.2. Purpose and tasks of the study

II.2.1. Purpose of the study

The purpose of the study is to reveal experimentally the influence of the applied sports-pedagogical model, in the process of teaching physical education and sports at school, on the development of certain social skills of students from the junior high school stage of the basic education level.

II.2.2. Tasks of the research

1. To study the level of development and the features of social skills in students from the junior high school stage of the basic education level;
2. To study the evaluations of the teachers for the development of the social skills of the students and the possibilities of influencing this process through the sports-pedagogical practice;
3. To reveal the impact of restrictive measures during the COVID-epidemic on physical activity and communication among students;
4. To develop a sports-pedagogical model for the development of social skills in students from the junior high school stage of the basic educational level;
5. To carry out an experimental application of the model and to measure its effects.

II.3. Subject, object and organization of the research process

II.3.1. Object of the study

The object of research are social skills, sports-pedagogical practice in school, models for pedagogical effects applicable in physical education and sports training, as well as the interaction between them. The social skills covered in the subject of the study are the skills of communication, empathy, cooperation, assertiveness, responsibility and self-control.

II.3.2. Subjects of research

The total number of persons examined is 464 people.

The number of students included in the study is 415 people. They were involved in different stages of the research and different methods have been applied to them. 237 students were asked to fill out the social skills test. Of

them, 42 students are participants in the sports-pedagogical experiment. During the COVID-19 epidemic and the restrictive measures introduced, due to the lack of possibility to conduct other empirical research activities, we conducted an online survey with 178 students. The distribution of the students involved in the study by school and demographic indicators is presented in Table 2.

Table 2. Distribution of the students involved in the study by schools and demographic indicators

Indicator	Characteristics	No. Pers. N	Relative part (%)	Total No.
Gender	Girls	240	57,8%	415
	Boys	175	42,2%	
Class	I - IV	7	2,4%	415
	V - VII	94	22,6%	
	VIII - X	220	53%	
	XI - XII	91	22%	
Age	7 - 10 years	10	2,4%	415 <i>Min = 9</i> <i>Max = 19</i> <i>M = 15,70</i> <i>(SD = 2,23)</i>
	11 - 14 years	158	38,1%	
	15 - 16 years	145	34,9%	
	17 – 19 years	102	24,6%	
Sport activity	Practice sports	306	73,7%	415
	Do not practice sports	109	26,3%	
Place of residence	Sofia	185	44,5%	415
	Big city	162	39%	
	Small town	69	16,5%	

Physical education and sports teachers are also included in the study. They are participants in the conducted expert assessment and survey. Their description by professional-demographic characteristics is presented in Table 3.

Table 3. Distribution of teachers by professional demographic indicators

Indicator	Characteristics	No. Pers. N	Relative part (%)	Total No.
Gender	Female	26	53%	49
	Male	23	47%	
Pedagogical experience	Up to 5 years	18	36,7%	49
	Between 6 and 15 years	15	30,6%	
	Over 15 years	16	32,7%	
Age	22 – 30 years	13	26,5%	49 <i>Min=22</i> <i>Max=59</i> <i>M=38,4</i> <i>(SD=10,28)</i>
	31 – 40 years	18	36,7%	
	41 – 50 years	10	20,4%	
	Over 50 years	8	16,4%	
Education	Bachelor	11	22,4%	49
	Masters	37	75,5%	
	PhD	1	2,1%	
Teaching in:	Basic ed. stage	20	40,9%	49
	High-school	29	59,1%	
Place of residence	Sofia	21	42,9%	49
	Big city	28	57,1%	

II.3.3. Organization of the research process

The research activity took place in three main stages:

The first stage of the development of the dissertation includes the period September 2019 - September 2020. Through it the following activities were carried out:

- literary sources on the problem were studied, as a result of which the main theories and definitions of the studied phenomenon were derived;
- numerous experimental studies have been analyzed in terms of purpose, methodology and results;
- a model was developed for the current experimental study;
- the research methodology was specified.

The second stage covers the period from September 2020 to September 2021. The activities carried out through it are tailored to the peculiarities of the epidemic situation in the country due to COVID-19. The dissertation work covers:

- the development of the sports-pedagogical model for the formation of social skills in the process of training in physical education and sports;
- conducting a survey and expert assessment with teachers;
- conducting an online survey with students;
- conducting a test with students.

Third stage - covers the time range from September 2021 - March 2023:

- the pedagogical experiment was conducted in two capital schools - the Sofia High School of Mathematics and 96th High School - Lyulin;
- statistical processing of the data was performed;
- an analysis of the experimental results was made;
- complete shaping of the dissertation work has been carried out.

II.4. Research methodology

- **The substantive and theoretical-logical analysis of literary sources and normative documents**
- **Expert evaluation**

This method was applied in order to study the assessment of teachers, as experts, regarding two problems related to the social skills of students from the lower secondary stage of the basic educational level:

- To what extent the students have developed the skills targeted for the study - communication abilities, assertiveness, empathy, self-control, responsibility and cooperation. In the methodology, a brief description of each of the skills is given, and the examined persons must evaluate it by applying a 5-point Likert-type scale.
- What is the influence of the main factors in the formation of skills such as family, school, training in physical education, friendly environment, and playing sports outside school hours under the guidance of a coach.

- **Survey**

Two questionnaires were developed and applied to 2 groups of respondents.

Survey #1 is intended for teachers. It includes five closed multiple-choice and mixed-type questions. The questions are aimed at gathering information from teachers about the social skills programs implemented in their schools and about the real possibilities for physical education teachers to purposefully include methods and techniques for the development of social skills in their pedagogical work.

Two of the questions in the survey are related to gathering information about the competence of teachers to conduct training aimed at the development of social skills, their desires and opportunities for its improvement.

For all investigated teachers, data were collected on the following indicators: gender, age, educational level, teaching experience, and school level in which they teach.

Survey #2 was conducted online with students during the pandemic. It aims to establish what change has occurred in their physical activity, including sports activities, after the introduction of the epidemic situation in the country.

The main purpose of the survey is to study the opinion of the students regarding the experienced deficits in relation to the communication that takes place in the process of sports activities and other types of physical activity.

The survey also included a question about the students' attitudes towards changing physical activity after the normalization of the situation.

- **A test of social skills in students**

The test consists of 24 statements, which are divided into 6 subscales - Empathy, Communication skills, Assertiveness, Self-control, Responsibility and Cooperation. Against each statement, there is a Likert-type scale, with degrees from 1 to 4, through which the subjects indicate the frequency of the behaviour related to a certain social skill. It is described by the degrees *never*, *almost never*, *often*, and *always*.

Based on the theoretical analysis, the following skills were determined to be particularly important for the studied age group:

- *Empathy* - describes behaviour aimed at understanding the problems of others and empathizing with their feelings ("I can understand the point of view of loved ones who are facing difficulties and share their feelings");
- *Communication skills* - reflects the ability to send and receive accurate information when interacting with others ("I strive to speak clearly and consistently express my opinion in a conversation");
- *Assertiveness* – which reflects an open expression of feelings and beliefs, asserting one's rights while showing respect for others.

- *Self-control* - aspects of behaviour that are related to conflict or irritating situations, as well as the achievement of a compromise. Self-control also includes complying with the demands of others ("I manage to keep calm when others are angry with me").
- *Cooperation* - brings together skills such as willingness to act together and help each other ("I avoid joining groups of classmates to work on school-related tasks");
- *Responsibility* - fulfilling the commitments made and accepting the consequences of one's actions ("At times I do not cope with daily duties, while I don't have a serious reason for it").

- **A pedagogical experiment**

The pedagogic experiment was carried out during on-site education for students from V to VII grades. It includes the application of a set of games aimed at forming certain social skills. It takes place within the time frames of physical education and sports lessons. The duration of the experiment is six weeks, and one game is played in each lesson. The duration of each of the games is 10 minutes. In the first lesson of the week, a short explanation is given or a short talk is held about the social skills that the games are aimed at developing.

All students are included in the games, without further grouping. The organization of the lesson follows the general regularities. After conducting the preparatory part (warming up), the teacher presents the games and gives instructions for their implementation.

Teachers are familiar with the different games in advance and choose those they think are most suitable for a certain class, taking into account their level of readiness to implement them.

The selection of games for the present experiment was made mainly from the Guide of S. Marushkina (2021). It should be noted that some of the games are also available on Internet sources and other publications.

- **Mathematical-statistical methods for quantitative processing of experimental results**

Chapter Three

Analysis of the obtained results

III.1. Level of development and features of students' social skills (Self-assessment test)

The test for the assessment of social skills in schoolchildren was conducted with 237 individuals. Of these, 135 are girls and 102 are boys. These students are in different stages of education - from the middle school stage to the basic education level (years V-VII); the first high school stage of secondary education (years VIII-X) and the second high school stage (years XI-XII). The inclusion of students outside the target group, in terms of school level, is for the purpose of making comparisons between them and discovering possible differences in the context of the research problem.

The initial direction of the analysis is related to establishing the degree of development of social skills in all students presented in Table 4.

Table 4. Average values of social skills in students (Self-Assessment Test)

Social Skills	N	Min	Max	M	SD
Communication	237	1,50	4	3,20	0,48
Assertiveness	237	1,50	4	2,90	0,55
Empathy	237	1	4	3,19	0,58
Self-control	237	1	4	2,72	0,60
Cooperation	237	1	4	2,82	0,61
Responsibility	237	1	4	3,19	0,60

Most developed are the skills of communication, empathy and responsibility, about which, almost identical results were obtained. The level reached in the social skills assertiveness and cooperation is lower. Last in the ranking is the skill of self-control. The obtained results, in this respect, correspond to the theoretical statements about the peculiarities of development during adolescence. The process of learning self-control skills is slower, in connection with the dynamics of emotional states, the desire to express and affirm one's own identity, as well as the change in interactions with social factors from the surrounding environment.

The comparative analysis carried out regarding the level of skills in girls and boys revealed the presence of statistically significant differences in four of the six skills examined (Fig. 3).

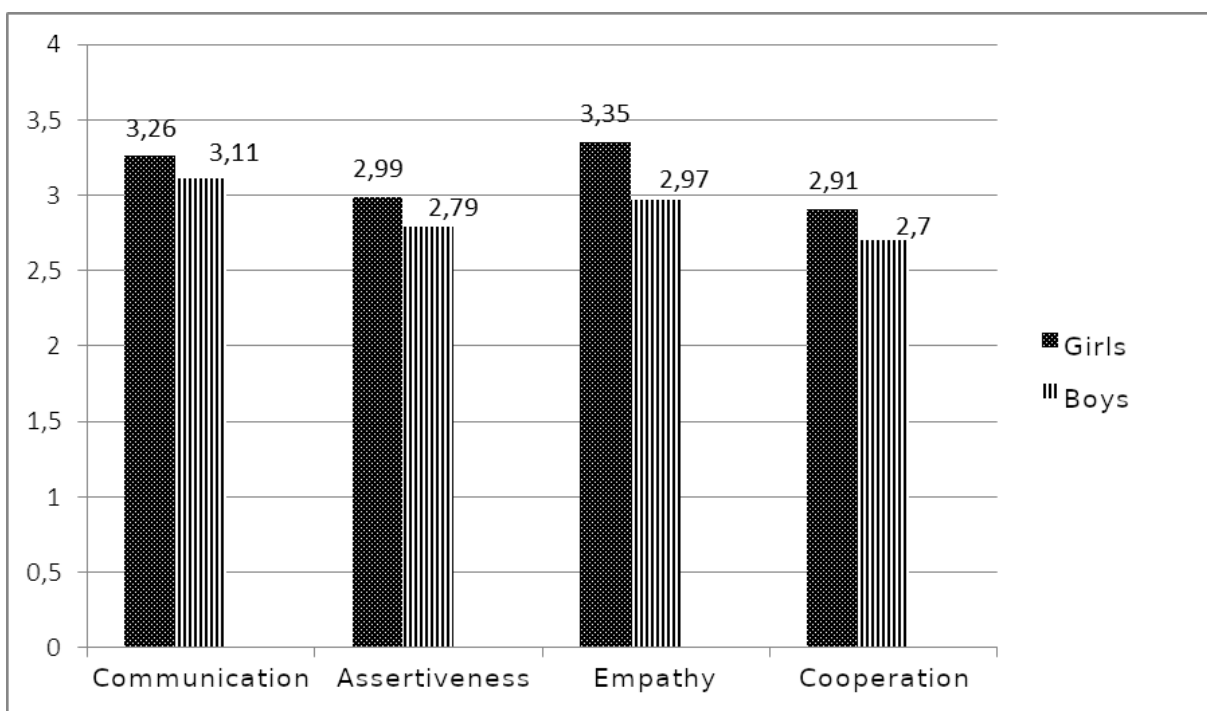


Fig. 3. Significant differences between the social skills of girls and boys.

These are communication skills, assertiveness, empathy and cooperation skills. In all of them, the registered values for girls are higher. This result is again consistent with the theory that both physical and personality development begins earlier in girls. As a result, significant differences are observed at the same age.

The biggest difference was found in empathy, and the smallest in assertiveness. Girls show greater sensitivity to the problems and emotions of others during adolescence (Mahmud & Nur, 2018). The values for the differences found are presented in Table 5.

Table 5. Significant differences in levels of social skills between girls and boys

Social Skills	Girls <i>M</i>	Boys <i>M</i>	<i>U</i>	<i>p</i>
Communication	3,26	3,11	5563,5	0,010
Assertiveness	2,98	2,79	5585,5	0,012
Empathy	3,35	2,97	4369	< 0,001
Self-control	2,74	2,69	6575	0,550
Cooperation	2,91	2,69	5401	0,004
Responsibility	3,25	3,09	6012	0,092

One of the essential directions of the analysis is the search for specific features in the development of social skills, depending on the school level of the students. According to this mark, they are divided into three groups, respectively

years V-VII, years VIII-X, and years XI-XII. The comparative analysis showed the presence of only one difference, regarding the skill of cooperation ($U=4202.0$; $p=0.05$), between students from years V - VII ($M=2.92$) and years VIII - X ($M= 2.76$).

At the same time, as a result of this analysis, a feature in the development of skills emerged, which is manifested in all the studied groups. Three of the skills - communication, empathy and responsibility are noticeably more strongly developed, compared to the others. These skills are almost at the same level, forming peculiar peaks (Fig. 4.).

The explanation for the lack of significant differences in skill levels between junior high and high school students is that there are large individual differences in development between students in the same school year. Differences in students' social interactions are also significant. Also, the theoretical sources contain information that the process of building social skills is long and gradual, therefore, one could not expect the presence of sudden changes that occur with a change in school status.

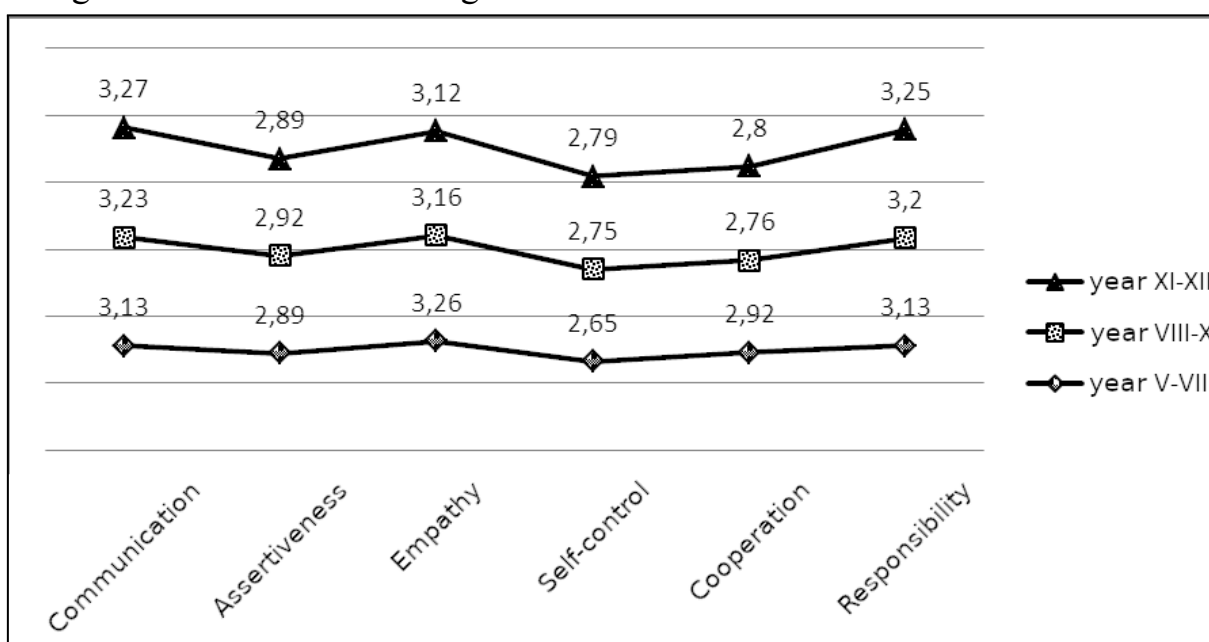


Fig. 4. Level of social skills of students from different school grades and stages

Social skills and, more importantly, sports activity were investigated, and again no differences were found between sports and non-sporting students. We assume that the answers given by the students are not correct enough. Although in the instruction it was indicated to give a positive answer, only in the presence of systematic sports activities, under the guidance of a coach. Therefore, further analysis is aimed at searching for peculiarities in social skills, depending on the duration of the sports experience.

According to sports experience, students are divided into two groups - with experience up to 5 years and over 5 years, which group unites those who have a more permanent attitude to sports.

A statistically significant difference was found only regarding the responsibility skill ($U=2396.5$; $p=0.008$). This skill is developed to a higher degree in students with longer sports experience ($M=3.49$; $Min=2.75$; $Max=4$; $SD=0.43$) than in those with experience up to 5 years ($M=3.13$; $Min=1$; $Max=4$; $SD=0.42$). We can reasonably assume that it is systematic and long-term sports activities that have a stimulating effect on the development of responsibility.

III.2. Social skills of students and opportunities to influence their development through sports-pedagogical activities at school

The research conducted with physical education and sports teachers was carried out by applying expert evaluation and a survey. The purpose of the expert assessment is to gather information in two directions:

How teachers assess the degree of development of social skills in students;

What is the teachers' assessment of the influence of individual factors on the process of building social skills.

Teachers' evaluations are reflected on a 5-point scale - Likert type.

The obtained results regarding the development of individual social skills show that, according to the teachers, students have the best-developed skills for cooperation and communication, and the least-developed is self-control (Table 6).

Table 6. Teachers' assessment of students' level of social skills

Social Skills	N	Min	Max	M	SD
Communication	49	2,00	5,00	3,49	1,06
Assertiveness	49	1,00	5,00	3,14	1,24
Empathy	49	1,00	5,00	2,98	1,03
Self-control	49	1,00	5,00	2,81	1,21
Cooperation	49	2,00	5,00	3,53	0,84
Responsibility	49	1,00	5,00	3,14	0,95

As a result of the comparative analysis performed between the different groups of teachers, on the indicators of gender, educational level and school level in which they teach, we did not find any significant differences. Only the analysis carried out on the indicator of teaching experience showed differences. According to the length of teaching experience, teachers were divided into three groups: with up to 5 years of experience; with between 6 and 15 years of experience; and with more than 15 years of experience. Their scores differed in terms of the degree of development of one of the social skills - communication.

Young teachers with up to 5 years of experience rated the skill of communication as more developed than their colleagues with more than 15 years of experience (Mann Whitney Test - $U=81$; $p=0.030$). Teachers with between 6 and 15 years of experience also rated students' development of the social skill of communication higher than those teachers with more than 15 years of experience ($U=68$; $p=0.041$).

The second direction of the analysis was related to establishing the influence of individual social factors on skill development in students. The results show that, according to the teachers, the greatest role is played by the family. This is fully consistent with the theoretical propositions about the significant socializing and educating role of the family. The school, in general, is the factor that teachers believe has the least influence, but PE and sports education, as part of the school reality, have a stronger socializing influence on students (Table 7).

Table 7: Teachers' assessment of the influence of factors on students' social skills formation

Factor	N	Min	Max	M	SD
Family	49	1,00	5,00	4,31	0,89
School	49	1,00	5,00	3,60	0,99
PE	49	1,00	5,00	3,94	0,89
Friends	49	2,00	5,00	4,24	0,82
Sport	49	1,00	5,00	4,00	1,20

To find out how teachers assess the opportunities of PE and sports education for the formation of social skills compared to other subjects, we included a relevant question in the questionnaire. The majority of teachers (51%) felt that teaching in all subjects provided equal opportunities for teachers to develop social skills in students. The relative proportion of those teachers who felt that the opportunities for PE and Sports instruction were greater was also significant at 40.8%. The relative proportion of those who think that opportunities are less in PE and those who cannot judge is not significant. A larger proportion of females rated opportunities in physical education as greater and of males rated opportunities as greater in all subjects as equal (Table 8).

Teachers were asked to assess the actual practice in Bulgarian schools related to the implementation of social skills development programmes. The answers obtained show that only about one-third of the teachers (32.7%) are familiar with such programmes implemented in their schools. The vast majority of respondents reported that no programmes were implemented in their schools or they were unaware of their existence (Fig. 6).

Table 8: Opportunities for social skills formation through PE and sports education

	Total N	Relative part %	Women %	Men %
“There are bigger opportunities in PE”	20	40,8%	46,2%	34,8%
“All subjects present the same opportunity”	25	51%	46,2%	56,5%
“There are lesser opportunities in PE”	2	4,1%	7,7%	-
“Undecided”	2	4,1%	-	8,7%

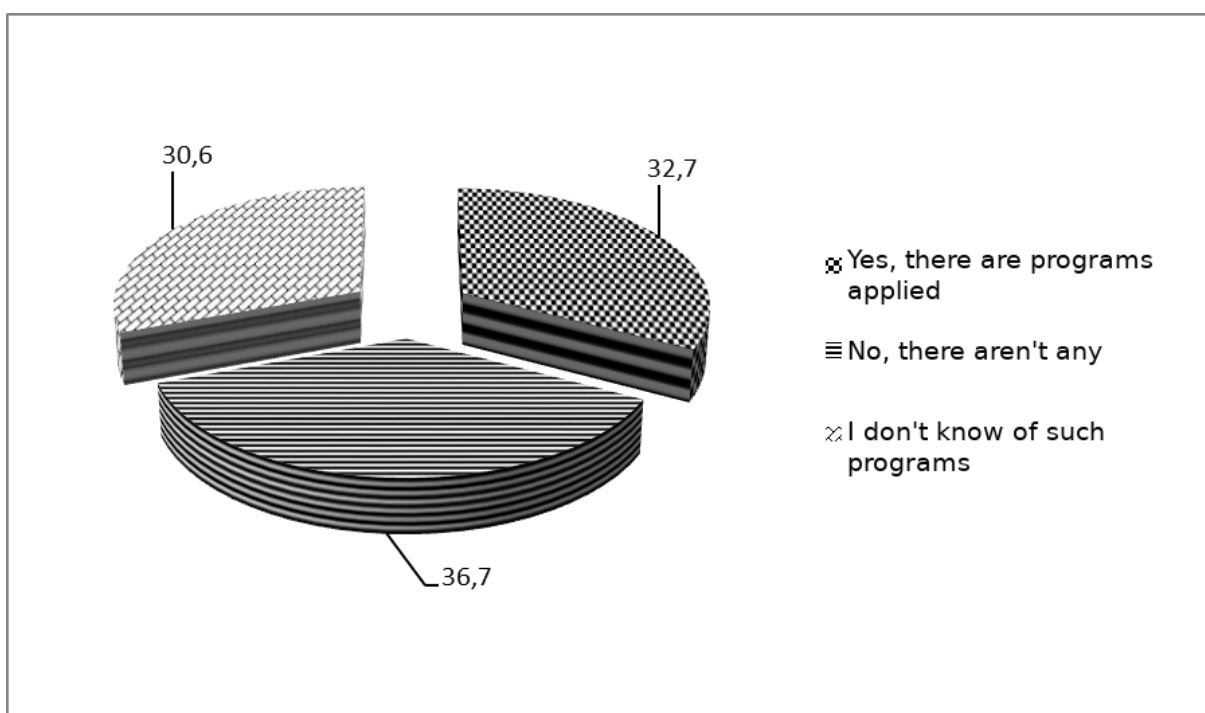


Fig. 6. Distribution of schools according to the availability of social skills development programmes

Another essential aspect, within the framework of this research project, is to investigate to what extent there are real opportunities, in the process of teaching physical education and sport, to apply certain methods and techniques for the development of social skills. The vast majority of those surveyed responded that there are real opportunities to a great or moderate extent to incorporate appropriate games and techniques to stimulate social skills development in students. A negligible proportion of teachers saw no opportunities. The results concerning the whole group of respondents and their gender distribution are presented in Table 9.

Table 9. Existing opportunities for the application of social skills development techniques in PE teaching

Opportunities	All subjects (%)	Women (%)	Men (%)
Yes, to a great extent	40,8%	46,2%	34,8%
Yes, to a moderate extent	51%	46,2%	56,6%
Yes, to a minor extent	4,1%	7,7%	-
No, there aren't any	4,1%	-	8,7%

The successful implementation of targeted programmes for the development of social skills in the process of teaching physical education and sport is directly related to the competence of teachers. To establish its current status and opportunities for improvement, two questions were included in the survey. The first of these aims to gather information on the main sources of knowledge and skills that enable successful activity concerning social skills. In the present study, the role of the following sources is analysed - preparation in HE, self-study, further training, shared experience with colleagues and other possible sources. More than half of the persons surveyed indicated more than one answer. Preparation during higher education emerged as the source of leading importance. It was mentioned by 61% of all surveyed persons. Self-preparation emerged as the second most important, cited by 41% of those surveyed. This result can be assessed as positive, in terms of teachers being interested in the issues and willing to spend time and effort to enrich their knowledge. Almost the same proportion of teachers reported shared experiences with colleagues as a source.

With the second question, we tried to find out whether teachers are willing to increase their competence in terms of students' social skills by involving them in different forms - courses, training or seminars. The results showed that all the respondents only focused on the positive two alternatives (Table 10):

- Yes, if available - 42.9%;
- Yes, but only if they were of good quality and offered up-to-date information - 55.1%.

Not a single teacher responded that they did not need further training, which is a sure indicator of their responsible professional attitude towards their teaching and their desire to acquire or enrich their knowledge on such an important issue for pedagogical practice.

Table 10. Participation in forms of additional teacher training

Indexes/Characteristics of subjects	Vocational education	
	Yes, if there's a possibility (relative part in %)	Yes if it is of high quality and includes up-to-date information (relative part in %)
Women	50%	50%
Men	34,8%	60,9%
Pedag. exp. up to 5 years	50%	50%
Pedag. exp. between 5 – 15 r.	13,3%	86,7%
Pedag. exp. over 15 r.	62,5%	31,3%
Basic school stage	33,3%	66,7%
Middle school stage	45,5%	54,5%
High school stage	44,8%	51,7%
Bachelors	54,5%	45,5%
Masters	40,5%	56,8%
PhDs	-	100%

The results obtained on this issue point to another significant conclusion. The overwhelming majority of all teachers, as well as of teachers in most of the groups formed by a certain indicator, expressed their preference for forms of improvement that meet high standards of quality and up-to-date information. Contemporary teachers do not simply wish to enrich their competencies but wish this to be realised at a qualitatively high level.

III.3. The impact of restrictive measures during the COVID epidemic on physical activity and communication in students

Restricting physical activity and sports participation also means restricting the opportunity to engage in specific social interactions. The aim of our study is aimed at identifying the perceived deficits of the lack of physical activity and, in particular, the deficit of communication during its course.

The impossibility of a direct study directed us to conduct an online survey. It involved 178 students, of whom 105 were girls and 73 were boys.

The first focus of the survey was to identify the characteristics of the student's physical activity before the introduction of the restrictive measures. Respondents were able to indicate all types of physical activity they practised. Physical education and sports lessons at school and daily walks emerged as the leading activities. There were some differences between girls and boys in terms of the relative proportion of their preferences for types of activity (Table 11). The total of the responses for the different alternatives was over 100%.

Table 11. Types of physical activity of students before the introduction of the epidemic setting

Types of physical activity	Girls	Boys	All subjects
Practice a specific sport under the guidance of a coach	26,1%	26%	26,4%
Play sports or games with friends in my free time	30,5%	43,8%	36%
I visit a gym regularly	13,3%	26%	18,5%
I go hiking on my days off	9,5%	9,6%	9,6%
I find time for walking every day (or almost every day)	45,7%	38,4%	42,7%
I exercise regularly	28,6%	43,8%	34,8%
I attend physical education classes at school	65,7%	49,3%	59%

In analysing the data, it should be borne in mind that with the introduction of the restrictions, school attendance has ceased, gyms have been closed and sports grounds have been banned. Walking in parks and gardens was also banned for some time. To assess the forms of physical activity during the epidemic situation, a question was included in the questionnaire that reflected only the available activity alternatives (Table 12).

Almost three times lower is the relative proportion of students who play sports and who replace training with an online version. The proportion of those who continue to have PE and sports lessons has also halved under the new training conditions. The most important feature of these classes is that students do not have the opportunity to communicate directly and to experience the emotions that accompany their physical activity together.

It is natural to expect that, as a result of the change that has taken place, students experience various deficits in their vital activity, both in terms of physical and social contact. They were therefore asked a closed-ended question to indicate in what respect these deficiencies were. The response alternatives were accompanied by a 4-point scale.

Table 12. Forms of physical activity during the epidemic situation

Types of physical activity	Girls	Boys	All subjects
I don't have any options	4,8%	2,7%	3,9%
I have the options to do some physical exercises indoors at home	77,1%	67,1%	73%
I do exercise and other sports activities in the yard	34,3%	37,9%	36,5%
Workout (via online connection)	10,5%	6,8%	9%
Physical education classes - online	31,4%	32,9%	32%
Other (please specify)	5,7%	6,8%	6,2%

The results obtained show that the students experience the greatest deficits in terms of specific communication and experiences during sports and physical activity, in general (Table 13).

Table 13. Students' assessment of missing experiences during the epidemic setting

Subjective assessment of shortages	N	Min	Max	M	SD
Physical exercise	178	1	4	2,49	0,92
The play and the sport itself	178	1	4	2,88	0,95
Meeting and talking to friends and teammates	178	1	4	3,24	0,84
The opportunity to meet new people and form friendships	178	1	4	2,80	0,95
Sharing my feelings with others	178	1	4	2,43	1,04
To improve my sporting skills and qualities	178	1	4	2,85	0,97
To improve my behaviour control	178	1	4	2,46	0,99
Improve my appearance and the way I look	178	1	4	2,47	1,08

The results are highly indicative of the importance of social contacts and communication, insofar as their absence is perceived to be greater than physical exertion alone.

We found statistically significant differences, between girls and boys concerning 4 of the alternatives. In all of them, higher values were recorded for boys (Table 14). The results obtained, in this respect, are consistent with those reported in other studies (Sallis, 1993; Trost et al., 2002).

One of the important aspects, in the context of the present study, is to trace how sporting activity in students' biographies affects the experienced lacks, during the epidemic. About one-third of the students surveyed reported practising some kind of sport. Volleyball and dancing were preferred by girls, while football and fitness were preferred by boys. According to the hours per week spent on sports, we divided the students into two groups. The first group included those who spent up to 4 hours per week on sports before the pandemic, and the second group included those who spent more than 4 hours. We found significant differences between the two groups on two of the alternatives for the experienced deficits. These were in terms of lack of exercise ($U=2450$; $p=0.001$) and lack of play and sport itself ($U=2450$; $p=0.001$). Quite logically, students with longer weekly sports activities experience such lacks more strongly.

Table 14. Statistically significant differences by gender

	Girls <i>M</i>	Boys <i>M</i>	<i>U</i>	<i>p</i>
Physical exercise	2,34	2,69	3002,5	0,01
The play and the sport itself	2,64	3,19	2613,5	< 0,001
Meeting and talking to friends and teammates	3,15	3,37	3287,5	0,081
The opportunity to meet new people and form friendships	2,69	2,97	3199,5	0,049
Sharing my feelings with others	2,43	2,41	3736	0,83
To improve my sporting skills and qualities	2,72	3,04	3136	0,031
To improve my behaviour control	2,34	2,63	3228	0,063
Improve my appearance and the way I look	2,57	2,75	3466	0,262

Of particular importance, in the context of the topic under development, is the tracking of changes that have occurred in groups of students based on their school status. We divided the study subjects into 4 groups, depending on their school level and stages. The first group includes students from grades V to VII (8 pcs/4.5%); the second group includes students from grades VIII to X (104 pcs/58.4%) and the third group includes students from grade XI to XII (56 pcs/31.5%).

The comparative analysis between the junior secondary and the primary secondary students revealed the presence of only in terms of limited opportunities to improve their appearance, with a more serious deficit experienced by older students ($U=247$; $p=0.049$). There was also a difference between the first and second-high school stage students in terms of lack of sufficient physical exercise ($U=247$; $p=0.049$). Again, a higher mean value was found in the older students, those of class XI to XII.

A graphical representation of the mean values of the deficits experienced, in each of the school groups, highlighted some features in their overall profile (Fig. 8). In all groups, the lack of meeting and talking to friends and teammates was most pronounced.

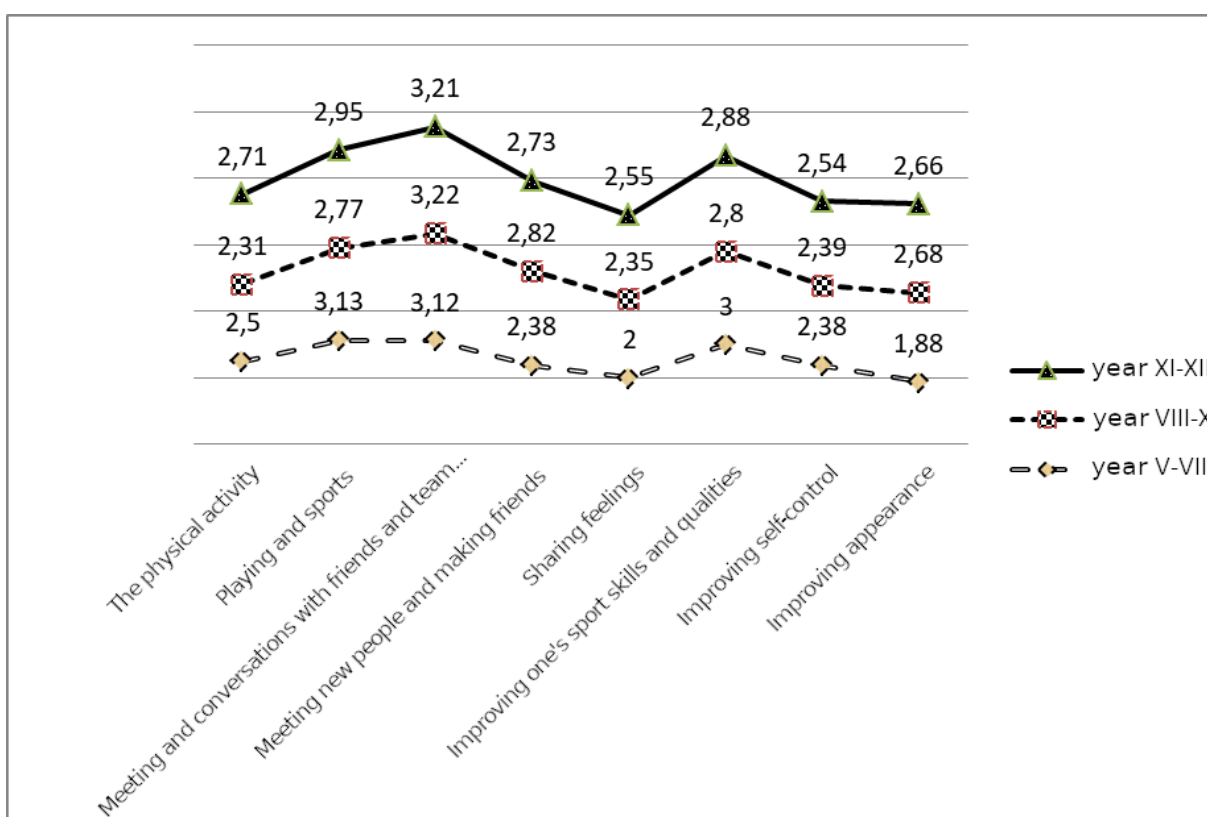


Fig. 8. Deficits due to physical inactivity by school level

Second was the lack of opportunity to improve athletic skills and attributes. The need to share feelings was the weakest. It is noteworthy that with increasing age the difference in the degree of deficits experienced becomes more and more perceived. In the youngest they have the most similar values, the peak alternatives are not clearly expressed.

III.4. Sport-pedagogical model and analysis of experimental results

III.4.1. Experimental sport-pedagogical model for social skills development

One of the main tasks of the present study is to create a model that can be successfully applied in the process of teaching physical education and sport, to stimulate the development of social skills, in students of the lower secondary stage of primary education.

The experimental model developed by us for the development of social skills in the process of teaching physical education and sports has some features in three main directions - theoretical features and technology, organization and content (Fig. 9).

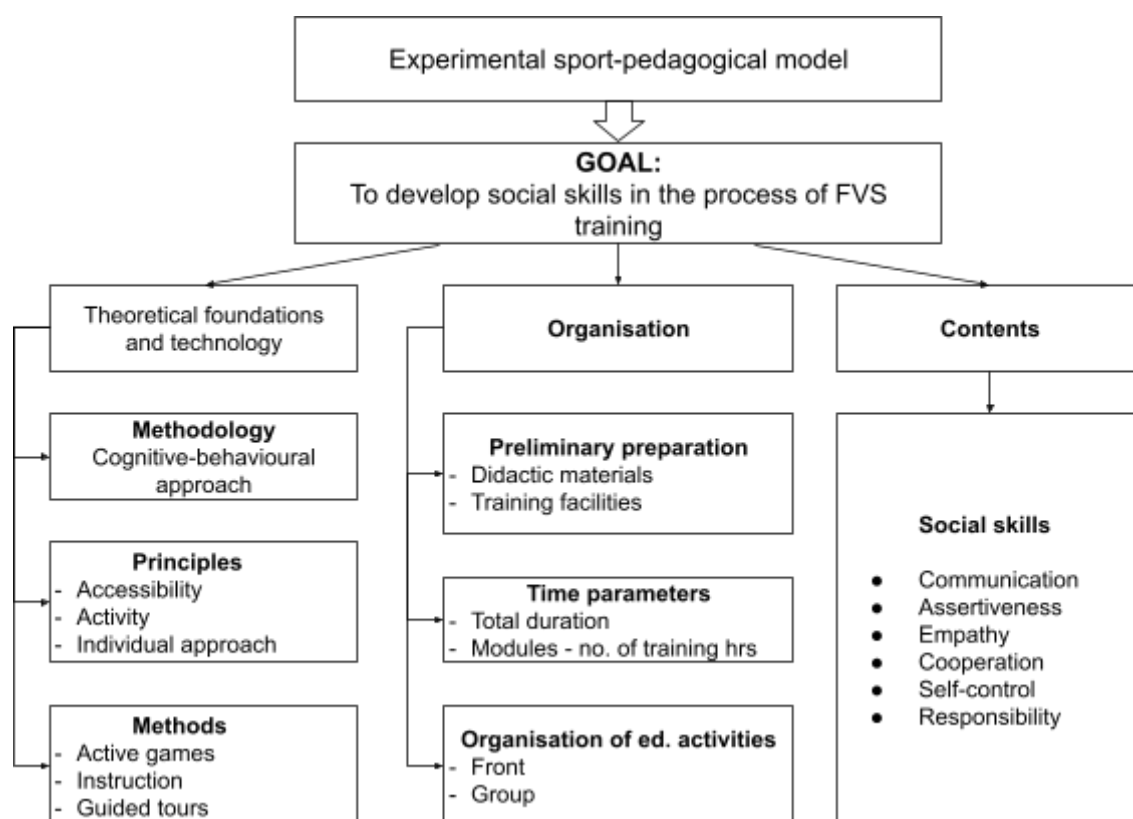


Fig. 9. Sport-pedagogical model

The methodological basis of the model is built in accordance with cognitive and behavioural learning theories. It is based on the understanding that in the process of learning the integration of the student's previous knowledge, as part of his/her social competence, with the new knowledge and its correlation with social norms should be achieved. In addition, changes in observable student behaviour are induced and regulated.

The main components of learning technology are the principles and methods of learning. The didactic principles that outline the general profile of the conducted activity provided in the experimental model - in the lessons of physical education and sport are the principles of accessibility, activity and individual approach. All the teaching content, in the modular units, is tailored to the cognitive and motor abilities and skills of the students. The playful nature of the learning activity contributes to optimal activity. Another principle that has a regulating influence on the experimental activity is the principle of the individual approach.

The guiding method through which the implementation of the model is carried out is a set of mobile ga. Content-wise and thematically they are linked to the target social skills - communication, assertiveness, empathy, cooperation, self-control and responsibility. In order to ensure an effective learning process, given the time constraints, it is necessary, as part of the preparation for the implementation of the individual games, to develop and implement brief but very clear instructions - on the rules of the game and the reporting of the final result.

The organisational side of the model includes the preparation of didactic materials and venues in advance. The selected games related to the learning content are described in detail in the second chapter of the thesis.

The temporal parameters of the model include the determination of the total duration, by teaching weeks, the number of teaching hours (in which the target games are implemented) and the duration of the games within the teaching hour. In the experimental application of the model, individual modular units (each related to one of the target social skills) lasted for 6 weeks and 12 instructional hours. The duration of the games (with good organization and preparation) is about 10-12 minutes.

The experimental application of the model was evaluated for its effectiveness, which included a diagnosis of the student's social skills, at the beginning and the end of the experiment. For both the experimental validation and the application of the model in mass practice, an individual assessment of each student is recommended, which is done by the physical education and sports teacher, and also at the beginning and the end of the model application.

This assessment is quantitative and is carried out according to the typical 6-grade scale for Bulgarian schools.

III.4.2. Analysis of students' self-assessment test data

The pedagogical experiment was carried out during the attendance of students of classes V and VII. Forty-two students from two classes in two metropolitan schools participated. Out of the total 45.2% (19) were students in class 5 of 96. 54.8% (23) were students in the 7th grade of Sofia Mathematical High School "Paisii Hilendarski". The gender distribution is 59,52% girls and 40,48% boys.

The experiment involved the application of a set of mobile games (described in Chapter Two), targeted at the formation of certain social skills. The teachers (two) involved in the pedagogical experiment made individual assessments of each student's social skills, both before and after the experiment.

Analyzing the data obtained on the level of social skills development from the test before the implementation of the pedagogical experiment, we found that students rated their empathy skills highest, while self-control was rated lowest (Table 16). There were no significant differences in the level of development between individual social skills. The development of individual skills occurs almost simultaneously and perhaps each has a stimulating effect on the others.

Table 16. Means of social skills for students in grades 5 and 7 (Self-assessment test)

Subscales	<i>Min</i>	<i>Max</i>	<i>Mdn</i>	<i>M</i>	<i>SD</i>
Empathy	2.50	4.00	3.25	3.27	0.45
Responsibility	1.75	4.00	3.00	3.12	0.60
Communication	2.00	4.00	3.00	3.04	0.49
Cooperation	1.75	4.00	3.00	2.95	0.56
Assertiveness	1.75	3.75	3.00	2.82	0.53
Self-control	1.50	3.50	2.50	2.61	0.45

A comparative analysis was made between girls and boys in terms of the individual subscales and the test items. Disaggregated by gender, the results show no statistically significant differences.

When stratified by grade, significant differences were observed in the skills of assertiveness and self-control (Table 17). According to these results, students in the upper grade have better assertiveness and self-control skills compared to those in the lower fifth grade. In support of our results is the report of Peneva, Kydikov, and Yordjev (2014), who also found that the level of the skill of assertiveness increases with increasing grade level.

Table 17. Results of Mann-Whitney U-test for Assertiveness and Self-control versus class

	Year 5		Year 7		<i>U</i>	<i>p</i>
	<i>M</i>	<i>Mdn</i>	<i>M</i>	<i>Mdn</i>		
Assertiveness	2,54	2,50	3,05	3,25	102,000	0,003
Self-control	2,41	2,50	2,78	2,75	116,000	0,009

An internal comparative analysis between the scores of the individual subscales using Wilcoxon rank sum test revealed 10 statistically significant differences (Fig. 10). Self-control was the only skill whose scores showed significant differences when compared with the other skills. Empathy scores were significantly different from all skills except responsibility. Assertiveness also showed no statistically significant difference with only one skill, cooperation. Communication was statistically different with three skills - self-control, empathy and assertiveness. Responsibility and cooperation have statistically significant differences with self-control. Additionally, responsibility has a significant difference with assertiveness and cooperation has a significant difference with empathy.

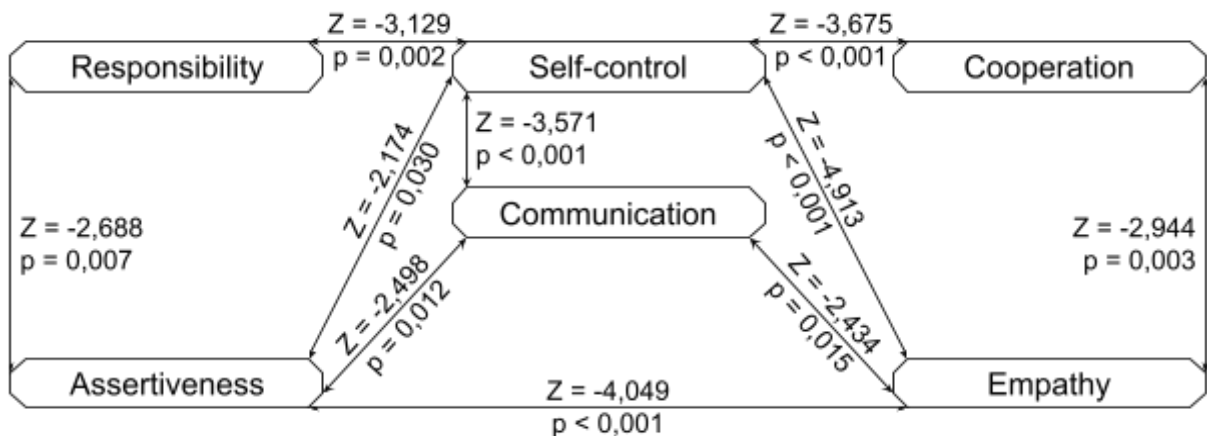


Fig. 10. Statistically significant differences between skills - self-assessment test

Statistical analysis for correlations with Spearman's rho coefficient between the scores of individual social skills obtained from the student's test revealed six correlations between skills (Fig. 11).

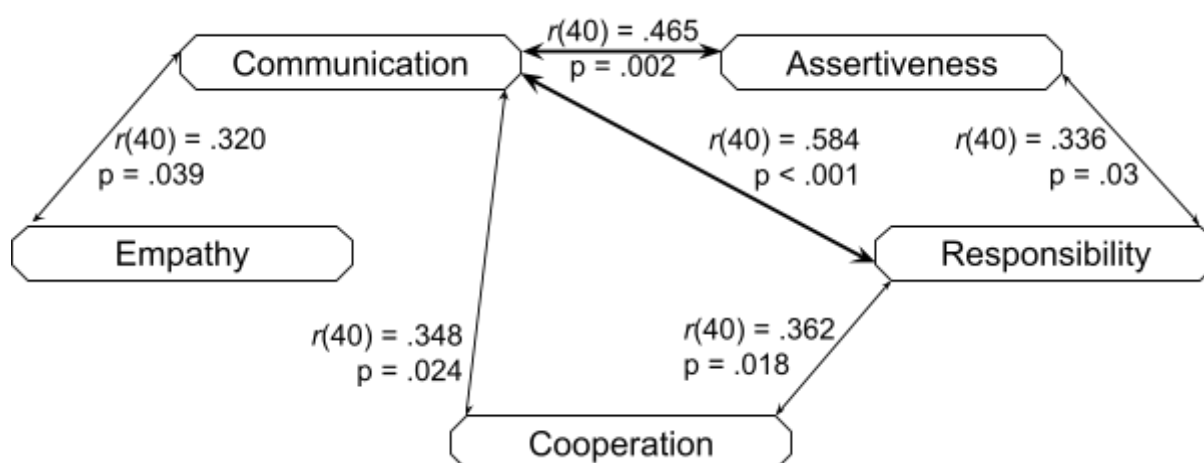


Fig.11 . Correlations between subscales measured by Spearman's rho coefficient according to the results of the self-assessment test

Communication has the highest number of correlations with other skills. It has a moderate correlation with responsibility and assertiveness, while it has a weak correlation with empathy and cooperation. Responsibility, in addition to communication, correlates weakly with the skills of cooperation and assertiveness. Of interest is the skill 'self-control', which does not correlate with any of the other skills.

III.4.3. Analysis of students' self-assessment test data after the pedagogical experiment

After the pedagogical experiment, the results of the student's social skills assessment test showed statistically significant differences from those before the experiment (Table 18).

Table 18. Differences in skills scores according to the questionnaire, verified by the Wilcoxon rank sum test

Субаскала	Преди		След		Z	p
	M	Mdn	M	Mdn		
Responsibility ↗	3.12	3.00	3.47	3.50	-3.366	0.001
Empathy ↗	3.27	3.25	3.43	3.50	-2.133	0.033
Communication ↗	3.04	3.00	3.40	3.50	-3.664	<0.001
Assertiveness ↗	2.82	3.00	3.35	3.50	-3.688	0.000
Cooperation ↗	2.95	3.00	3.31	3.50	-3.430	0.001
Self-control ↗	2.61	2.50	3.18	3.25	-4.246	<0.001

On the grade level indicator, there was only a difference in the Assertiveness skill (U=113.500; p=0.007) in favour of the younger students with

a mean of $M=3.58$ and a median of $Mdn=3.75$, compared to the values of the older seventh-grade students $M=3.16$; $Mdn=3.25$. These results are of interest because, in the pre-experiment data, the advantage was for the seventh graders.

There was a slight shift in social skills relative to their distribution before the pedagogical experiment. Empathy gives first place to responsibility, and assertiveness overtakes cooperation. Self-control remains in last place, showing statistically significant differences with each of the other skills in the Wilcoxon rank test (Fig. 12). No significant differences were found between any of the other skill pairs.

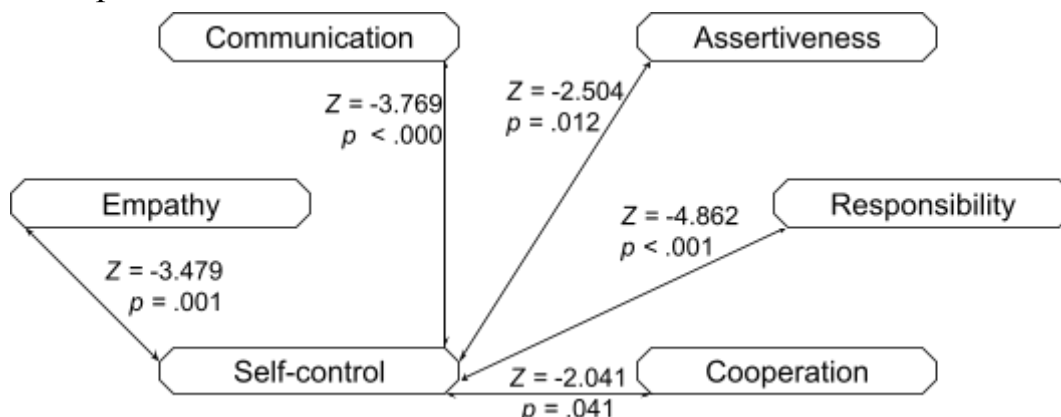


Fig. 12 . Differences in self-control scores with other skills after the experiment, verified by Wilcoxon rank test

Correlation analysis revealed relationships between the skills of empathy post-experiment and communication and cooperation pre-experiment (Fig. 13).

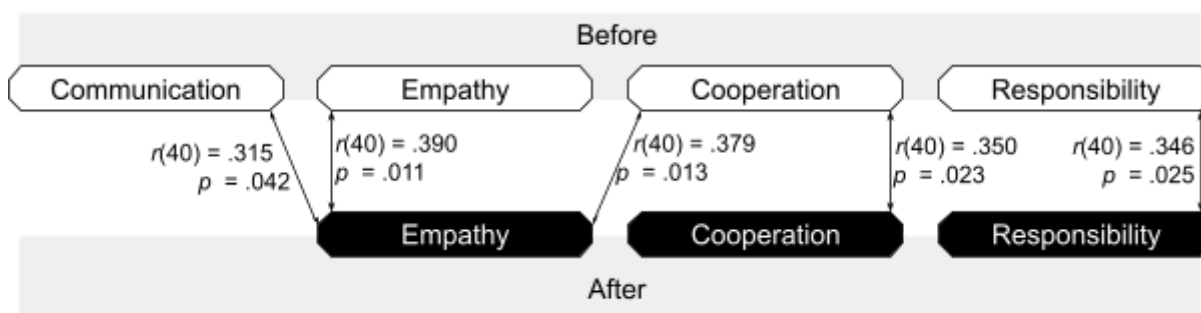


Fig.13 . Correlations between pre- and post-experiment skills according to the Spearman rho coefficient questionnaire

Empathy, cooperation and responsibility show correlations between their scores before and after the experiment.

The correlations between skills after the experiment show much higher values (Table 19).

Table 19. Correlations between skills after the experiment according to the questionnaire, according to Spearman's rho coefficient

	Index	Comm.	Assert.	Empathy	Self-con.	Coop.
Communication	$r(40)$	1.000				
	p	.				
Assertiveness	$r(40)$	<u>.559**</u>	1.000			
	p	<u>.000</u>	.			
Empathy	$r(40)$.279	.114	1.000		
	p	.074	.474	.		
Self-control	$r(40)$	<u>.654**</u>	<u>.437**</u>	.264	1.000	
	p	<u>.000</u>	<u>.004</u>	.092	.	
Cooperation	$r(40)$	<u>.627**</u>	<u>.365*</u>	.273	<u>.520**</u>	1.000
	p	<u>.000</u>	<u>.018</u>	.080	<u>.000</u>	.
Responsibility	$r(40)$	<u>.723**</u>	<u>.459**</u>	.265	<u>.807**</u>	<u>.545**</u>
	p	<u>.000</u>	<u>.002</u>	.090	<u>.000</u>	<u>.000</u>

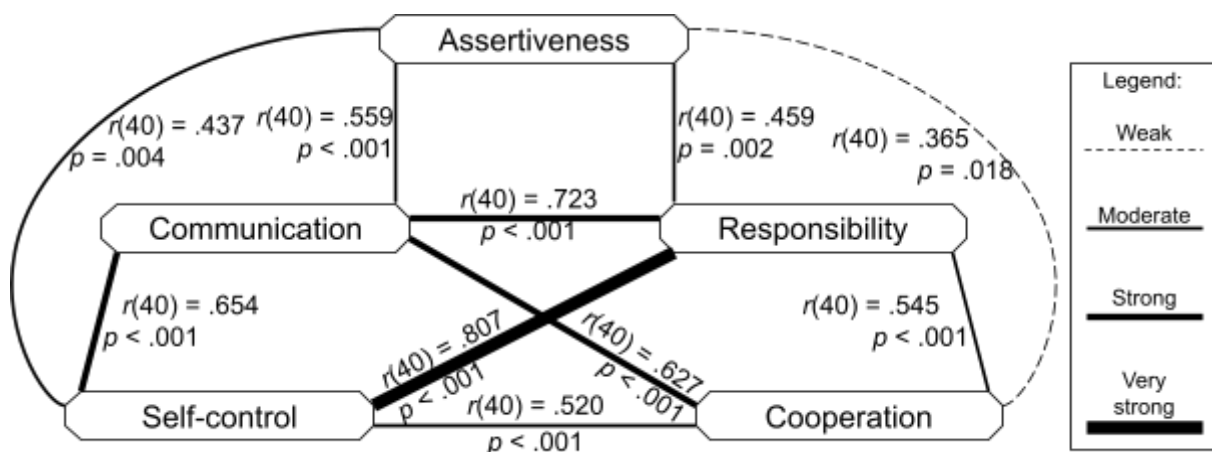


Fig.14 . Correlations between skills after the experiment

Of interest to them is the very strong correlation between the skills of responsibility and self-control. The ability to manage one's emotions, and not to give in to distracting stimuli, obviously plays a high role in performing our duties within the time limits and with the required quality.

There is a strong correlation between communication and self-control, between communication and cooperation, and between communication and responsibility. Compared to the previous results, communication stands out as one of the most significant social skills impacting others. Another such skill having a significant impact on others is responsibility. This leads us to assume that the development of each skill improves the development of the others.

Another interesting result is the lack of correlations between empathy and other skills, relative to the post-experiment test results. Assuming that these results are objective, this would imply that empathy as a skill does not affect or depend on the manifestations of the other social skills. In this sense, empathy is not a barrier to assertiveness - the ability to put oneself in the place of others is not related to asserting one's position.

III.4.4. Analysis of data obtained from PE teachers before the experiment

In parallel with the students' ratings obtained from the self-assessment test, teachers' ratings were obtained for each student individually before the pedagogical experiment. They rated each of the six social skills separately.

In analyzing the scores obtained from the teachers, a discrepancy in the ranking of the individual social skills was noted. Only in the skill of empathy was the teachers' score lower than that of the students. For all other skills, the mean scores of the students' self-assessment tests were lower. The highest skill rated by teachers was Collaboration, while Empathy was ranked last (Table 20).

Table 20. Level of social skills development according to teachers' ratings

	<i>Min</i>	<i>Max</i>	<i>Mdn</i>	<i>M</i>	<i>SD</i>
Cooperation	2.5	4	4	3.7988	0.41163
Responsibility	1	4	4	3.6159	0.77075
Self-control	2.5	4	4	3.5976	0.53291
Assertiveness	1.75	4	4	3.3598	0.72251
Communication	1.75	4	3.25	3.1951	0.63618
Empathy	1.75	4	3.25	3.1768	0.66672

When comparing the teachers' scores against the gender indicator with a Mann-Whitney U-test, a statistically significant difference emerged only on the skill of empathy ($U=127.500$; $p=0.023$), indicating girls' greater sensitivity to the problems and emotions of others. Analysis of variance showed that teachers rated this skill higher for girls ($M=3.41$; $Mdn=3.25$) than for boys ($M=2.85$; $Mdn=3.25$). These results overlap with theory and research findings of more accelerated social development in girls.

The statistically significant differences on the grade indicator were greater, with four out of six skills (Table 21).

Table 21. Comparison of teachers' ratings on grade indicator

	Year 5			Year 7		Mann-Whitney U-test	
	M	Mdn		M	Mdn	U	p
Communication	3.13	3.25		3.25	3.25	180.500	.462
Assertiveness	2.83	3.25	<	3.77	4.00	58.000	<.001
Empathy	3.21	3.25		3.15	3.25	177.000	.374
Self-control	3.29	3.25	<	3.84	4.00	92.000	.001
Cooperation	3.58	4.00	<	3.97	4.00	123.000	.002
Responsibility	3.21	3.63	<	3.93	4.00	112.500	.001

The skills of Assertiveness, Self-Control, Cooperation and Responsibility were rated higher for Grade 7 students. On the one hand, this may be due to the development of these skills with age. On the other hand, it should be kept in mind that the two experimental groups were led independently by separate teachers, which may also account for these results.

The data obtained from the teachers were also compared with those of the students. When analysed with Wilcoxon's rank test, only empathy and communication showed no statistically significant differences with the students' questionnaire scores (Table 23).

Table 23. Comparison of test scores with those of teachers with Wilcoxon rank test

	Group	M	Mdn	Z	p
Empathy	Teachers	3.18	3.25	-0.845	0.393
	Students	3.27	3.25		
Responsibility	Teachers	3.62	4.00	-3.415	0.001
	Students	3.12	3.00		
Communication	Teachers	3.20	3.25	-1.411	0.158
	Students	3.04	3.00		
Cooperation	Teachers	3.80	4.00	-5.105	<0.001
	Students	2.95	3.00		
Assertiveness	Teachers	3.36	3.25	-3.740	<0.001
	Students	2.82	3.00		
Self-control	Teachers	3.60	4.00	-5.314	<0.001
	Students	2.61	2.50		

An analysis was also conducted to correlate teacher ratings with student self-assessment test scores. The results of Spearman's rho coefficient are presented in Table 24.

Table 24. Correlations between teachers' ratings and students' results

Teachers	Students						
	Index	Comm.	Assert.	Empathy	Self-con.	Coop.	Resp.
Communic.	<i>r</i> (39)	.373	.314	<u>.413</u>	.082	.192	.260
	p	.016	.046	<u>.007</u>	.610	.230	.101
Assertiveness	<i>r</i> (39)	.347	.283	.242	.294	.014	.266
	p	.026	.073	.128	.062	.931	.093
Empathy	<i>r</i> (39)	.297	.108	.195	-.026	.219	.324
	p	.059	.501	.223	.870	.170	.039
Self-control	<i>r</i> (39)	.298	.319	.053	.302	.001	.224
	p	.059	.042	.743	.055	.996	.159
Cooperation	<i>r</i> (39)	<u>.423</u>	.338	.258	.137	.050	.274
	p	<u>.006</u>	.031	.104	.394	.755	.083
Responsibility	<i>r</i> (39)	<u>.473</u>	.254	.174	.189	.084	.338
	p	<u>.002</u>	.108	.277	.237	.604	.031

Communication and responsibility are the only skills for which there is a statistically significant but weak correlation between teacher ratings and student outcomes. For all other skills, no correlation is evidenced, which could be interpreted as a difference between students' self-assessments and teachers' expert assessments of individual social skills.

Another interesting result is the moderate correlation between teachers' communication scores and students' empathy scores. This is also the case for the responsibility-communication and cooperation-communication (teachers-students) pairs. Students who have good communication skills may elicit higher scores from teachers for cooperation and responsibility. Similarly, students with better empathy may appear more sociable in the eyes of educators.

III.4.5. Analysis of data obtained from PE teachers after the experiment

Teachers' post-experiment ratings showed statistically significant changes in almost all social skills. Only the skills of cooperation and responsibility showed no difference compared to the pre-experiment ratings (Table 25).

Table 25. Social skills scores according to teachers and Wilcoxon rank test

	Before		After		<i>Z</i>	<i>p</i>
	<i>M</i>	<i>Mdn</i>	<i>M</i>	<i>Mdn</i>		
Responsibility =	3.62	4,00	3,71	4,00	-1.890	0.059
Empathy ↗	3.18	3.25	3.52	3.25	-3.945	< 0.001
Communication ↗	3,20	3,25	3,62	4,00	-2.974	0.003
Assertiveness ↗	3,36	3,25	3,54	4,00	-2,887	< 0.001
Cooperation =	3,80	4,00	3,80	4,00	< 0.001	1.000
Self-control ↘	3,60	4,00	3,30	3.25	-3,411	0.001

The social skills of empathy, communication and assertiveness showed statistically significant improvement in scores. In contrast, self-monitoring showed a statistically significant decrease in the mean score by teachers. The reason for these results could be the high initial level of assessment by the lecturers or their unrealistic perception of the level of development of the skill. At baseline, all skills except empathy were rated higher by teachers than the questionnaire results indicated. The greatest value of the test for the statistical difference was then in the comparison of self-control scores.

A comparison of individual items of the teachers' ratings did not reveal statistically significant differences between the groups on gender attributes. However, such a difference was observed for the grade indicator and only for the skills of assertiveness and responsibility (Table 26). For both skills, the better scores were indicated by Grade 7 students.

Table 26. Differences in teachers' scores for the skills of Assertiveness and Responsibility by grade indicator, as tested by the Mann-Whitney test

	Year 5			Year 7		Mann-Whitney test	
	<i>M</i>	<i>Mdn</i>		<i>M</i>	<i>Mdn</i>	<i>U</i>	<i>p</i>
Assertiveness	3.13	3.25	<	3.71	4.00	91.000	< 0.001
Responsibility	3.33	3.63	<	4.00	4.00	103.500	< 0.001

In pre-experiment comparisons, the social skills indicated maintained a statistically significant difference in the same direction. In the comparisons of questionnaire scores, assertiveness changed from being better for the seventh graders before the experiment to being better for the fifth graders after the experiment. However, these results can be interpreted as indicating that seventh graders have better skills to defend their opinions and views, and to perform their duties correctly.

When comparing the differences between the post-experiment test scores and the teachers' expert ratings, statistically significant differences were found in the skills of cooperation, communication, and responsibility, again with teachers giving higher ratings than the test scores (Table 27). The other three skills do not show statistically significant differences, but the means for these are also higher/ in favour of the educators' scores.

Higher values of the educators' scores at the beginning and end of the experiment could be a sign of distortion of the results due to effects such as "social desirability" and others.

Table 27. Differences in skill scores by teachers and by students, as tested by the Wilcoxon rank sum test

	Teachers			Students		Wilcoxon rank sum test	
	<i>M</i>	<i>Mdn</i>		<i>M</i>	<i>Mdn</i>	<i>Z</i>	<i>p</i>
Communication	3.62	4.00	>	3.40	3.50	-2.542	0.011
Assertiveness	3.54	4.00		3.35	3.50	-1.426	0.154
Empathy	3.52	3.25		3.43	3.50	-1.904	0.057
Self-control	3.30	3.25		3.18	3.25	-1.521	0.128
Cooperation	3.80	4.00	>	3.31	3.50	-4.041	< 0.001
Responsibility	3.71	4.00	>	3.47	3.50	-2.045	0.041

However, both the teacher ratings and the questionnaire ratings show an improvement in the level of social skills, which can be interpreted as a positive result following the pedagogical experiment.

Conclusions and recommendations

Conclusions

The results of the theoretical and experimental research conducted on the topic of the dissertation provide grounds for formulating the following conclusions:

1. The vast majority of the reviewed scientific publications define social skills as an essential personal characteristic and a basic means for successful interpersonal interactions. The deficit of social skills causes difficulties in the adaptation of young people to different segments of the social environment.
2. There is a consensus in academic circles that the acquisition and development of social skills take place in the process of

socialisation under the influence of factors such as family, school, friendship, sport and other informal social groups. During the period of early adolescence, which is the period in which lower secondary pupils are at the primary level of education, the influence of friendships, peers and teammates is strengthened.

3. Sports activities and physical education and sports education at school have a great potential for building various social skills in students at the school level. Their development is not a natural outcome of the physical activity itself. It can be achieved by applying specific methods, techniques and sport-pedagogical models.
4. The study among students reveals that social isolation and the impossibility of sports activities, of practising different types of physical activity, leads to a subjective assessment of significant deficiencies, above all in terms of communication in the context of sports activity, which occupies a leading position.

Before the introduction of the restrictive measures, PE and sports lessons and daily walks stood out as the forms of physical activity mentioned by students.

During the epidemic situation due to Covid-19, the most frequently cited form of physical activity was 'being able to do some exercise indoors at home', followed by 'doing exercise and other sports in the yard'.

5. In the vast majority of Bulgarian schools, sport-pedagogical models are not applied and good practices for social skills development are not promoted.

PE and sports teachers are ready to engage in this type of activity and to improve their professional training in this respect.

6. PE and sports teachers rate the following social skills as the most developed in students - cooperation and communication, while the least developed skill in students is self-control.
7. Pupils who have participated in sports under the guidance of a coach for a period of more than 5 years have significantly more developed responsibility skills than those with less than 5 years of sport experience.
8. The conducted pedagogical experiment, through the application of a sports-pedagogical model for the development of social skills, in the conditions of physical education and sports education, showed the presence of a positive impact on the development of social

skills, in students of the lower secondary stage of the basic educational level.

As a consequence of the applied pedagogical experiment, the highest levels in the skills of assertiveness and self-control were reported in students of the lower secondary stage of the basic educational level.

Physical education and sports teachers, after the pedagogical experiment, rated the highest in the social skills of communication, assertiveness and empathy.

References

The results of the study lead to the formulation of the following practical recommendations:

1. Investigate and implement the use of methodologies for diagnosing social skills in students. Our proposed self-assessment test can be used in this direction, but it is also necessary to develop and adapt established methodologies for Bulgarian conditions. In this way, they can be used to most fully identify deficits in skill development, which will provide accurate guidelines for overcoming them;
2. To develop detailed methodological guides for sports educators, describing methods and specific techniques to be applied in the classroom, extra-curricular and co-curricular activities in physical education and sport;
3. To guide teachers to engage in various forms of social skills competency enhancement that meet contemporary standards of innovativeness, scholarship and practical applicability of knowledge;
4. Education authorities have to ensure that social skills development programmes are conducted at all school levels and that the necessary resources are made available to fund them.

List of publications on the topic of the thesis

1. Bonvheva, M (2020). Faktori za razvitie na sotsialni umeniya pri uchenitsi [Factors for development of social skills of students]. *Lichnost, motivatsia, sport*, book 24, pp 178-187, Sofia:NSA-Press
2. Bonvheva, M (2021). Defitsit v sotsialnite aspekti pri uchastie v urotsite po FVS i formi na fizicheska aktivnost po vreme na pandemiyata ot COVID-19 [Defficits in the social aspects of participation in the PE and sports classes and forms of physical activity during the COVID-19 pandemic]. *Lichnost, motivatsia, sport*, book 25, pp 232-241, Sofia:NSA-Press
3. Bonvheva, M (2018). Possibilities for the development of social skills in students through physical education and sport. XXI Scientific Conference “FIS COMMUNICATIONS 2018” in physical education, sports and recreation (Nis, Serbia, October 18-20, 2018) ISBN: 978-86-87249-89-9; pp. 196-201