

Using the problem-solving method and its role in developing some social aspects among secondary school students from a point of view Physical education teachers

1. Dr. MOUNDER BOUDIAF, Mounder.boudhif@univ-dbkm.dz
2. ABDELWAHB BEN OMER, abdelwahabbn@gmail.com

Summary:

The study aims to highlight the importance of the problem-solving method in developing the social aspects of secondary education students, as well as identifying the role of this method in developing (cooperation - loyalty) among them, we have relied in our study on the descriptive approach, using the questionnaire as a research tool, which was distributed to members of the research sample consisting of 40 secondary education teachers out of a total of 170 teachers at the level of education. The Directorate of Education for the State of M'sila, after discussing and analysing the results through statistical methods and relying on previous studies, we concluded that the method of solving problems has a major role in developing some social aspects, namely developing the value of cooperation and loyalty.

key words: Problem solving style, social aspects, cooperation, loyalty

Introduction and problem:

In recent years, education in general has witnessed a radical reform movement represented by the introduction of new concepts, so that education is considered the first pillar of progress and the necessary basis for keeping pace with development. Through it, human resources are invested to provide the person with religious, behavioural, cognitive, and specialized values in various fields so that the person becomes prepared to contribute to building... Modern society, in order to achieve a kind of excellence among learners, allowing them to face the challenges posed by the changing world now.

The goals of education stem from human nature and the changes and transformations that occur in society, in addition to the effects resulting from the pressures of information technology in the era of the knowledge explosion on educational curricula with the aim of preparing a generation of learners who are able to use this technology to face modern life.

This progress can be recognized by knowing for modern methods, methods, and theories of teaching and learning, as Rifaat Bahjat 1998 indicates, quoted by Stephen Curry Stephen Corey pointed out that: "The teaching process is a deliberate process of shaping the individual's environment so that it enables him to learn to perform a specific behaviour, or to engage in a specific behaviour, under specific conditions, or in response to specific circumstances. In this sense, teaching is a pillar of the education process and is closely linked to it." Thus, teaching cannot occur if it does not result in learning." (Bahjat, 1998, p. 103)

Today, educators view the problem-solving method as: "a method that enables students to learn new scientific concepts and as a method that challenges their previous cognitive structures and challenges the usual frames of reference by presenting new problems in new situations that force students to think divergently. Divergent thinking, deepening, and reviewing the MAFI miss them the precedent in light of this leads to the development of creative abilities, the development of self-confidence, the development of the spirit of adventure, curiosity, and the pursuit of exploring the unknown." (Muhammad, 2000, p. 92).

Implementing this method requires placing students in situations and problems that interest them and are related to their reality, and at the same time challenge their thinking and push them to research and collect the necessary information, and verify its validity in order to find a solution to it.

Sports are one of the educational means that help the individual develop his intellectual, physical, psychological, motor, and social abilities, which have witnessed great development in the modern era. It works on the individual's growth and increased activity, as well as accustoming him to obedience, order, cooperation, love and respect for others, and coexistence with them. The educational process has occupied a prominent place within the mechanisms of development. As a process that addresses all aspects of the learner's personality.

In order to reach the goals of physical education and sports (the goals of the sensory-motor field, the goals of the cognitive field, the goals of the emotional field), we find that physical education and sports teachers use many methods and methods to achieve the established goals, and on this basis, it is necessary to take into account the status and importance of these methods and methods. Which is considered an effective way to complete the

physical education and sports session, and this is due to its importance in providing the learner with many social values.

This study comes to reveal the importance of the problem-solving method and its role in developing some social aspects (cooperation and loyalty). This prompts us to ask the Following general question:

- ✓ Does using the problem-solving method have a role in developing some social aspects among secondary school students?

From the above, a number of the following questions can be raised:

- ✓ Does using the problem-solving method have a role in developing cooperation among secondary school students?
- ✓ Does using the problem-solving method have a role in developing loyalty among secondary school students?

2- Study hypotheses:

▪ General hypothesis:

- ✓ Using the problem-solving method has a positive role in developing some social aspects among secondary school students.

▪ Partial hypotheses:

- ✓ Using the problem-solving method has a positive role in developing the cooperation trait among secondary school students.
- ✓ Using the problem-solving method has a positive role in developing loyalty among secondary school students.

3- Objectives of the study: This study seeks to achieve the following objectives:

- Highlighting the importance of the problem-solving method in developing the social aspects of secondary school students.

- Identifying the role of the problem-solving method in developing some social aspects (cooperation, loyalty) for secondary school students from the teachers' point of view.

4- The importance of the study: The importance of the study lies in the following:

- 1- This study deals with the development of some social aspects for students at an important age stage, as it is one of the most important stages of the learner's life.
- 2- Determining the level of social aspects among secondary school students after training them on the problem-solving method.

5- Defining concepts and terminology:

5-1- Problem solving method:

Faraj and others (1999) define it as one of the methods of education in which the learner takes an active and effective role as he is faced with a confusing situation or new questions that challenge his thinking and require a solution, so he thinks and uses methods of observation, hypotheses, experimentation... etc. in order to arrive at acceptable explanations and solutions that support them. Evidence and facts regarding this problem, under the supervision and guidance of the teacher."

And you know him **Selma Al-Nashif (1999)** It is an organized scientific method consisting of a series of steps used to solve problems of various types, and this method is used in dealing with all types of science so that it can be used it is necessary and useful in classroom and non-classroom situations, that is, in daily life."(Al-Obaidi, 2010)

- Procedural definition: What is meant in this study is that it is a method that depends on the organized mental activity of the student. He begins by consulting his thinking, in the presence of a problem that is worth thinking about, and searching for the largest possible number of solutions according to scientific steps to reach the optimal solution to the problem, by practicing a number of educational activities that It can contribute to developing the social aspects of the learner.

5-2- Social aspects: Hussein Abdel Hamid defines it as: "the association of individuals with relationships and ties, which results in what we call social interaction. Social interaction creates what we call social processes, which are patterns of repeated interaction for distinct behaviour and methods of social interaction."

"It is a series of interconnected events that lead to specific, predictable outcomes. There are multiple classifications of social processes, which are generally divided into cooperation, competition, conflict, harmony, and social adaptation."(Ahmed, 1998, p. 105)

Operational definition: It is a set of bonds and behaviours that occur between individuals that occur among us, which we call social interaction. In our study, these social aspects under study are (cooperation, loyalty).

5-3- Professor of Physical Education and Sports:

The physical education and sports teacher is considered to have the main role in the education process, as it is his responsibility to choose the appropriate activities for the students in the physical education and sports lesson, through which he can achieve the educational and pedagogical goals and apply them on the ground.

He also achieves ideal roles in his relationship with the student, culture, society, and school, and this depends on his keen insight and academic and professional outlook. He also achieves the goals that he personally realizes and that are in line with the general goals of education in the educational system, because he works in the direct line of confrontation with the student in schools. And educational and learning institutions, and so it reflects the values and goals that it adheres to. (Al-Kholy, 1996, p. 147)

5-4- Secondary education stage:

Secondary education is the last stage of compulsory education that all students receive, after they pass the primary education stage and the intermediate education stage. It is the stage that decides the nature of the university major that the student will join after graduating from high school, or the nature of the profession that he will learn later, and this is what is called Name of Higher Education Secondary education schools are called secondary schools, and secondary education often begins during the teenage years.

Previous studies:

Study by Hala Farouk Jalal Deeb (2009), entitled: “Developing social skills using multimedia for mentally disabled children.”

The study aimed to identify the effectiveness of the program based on the use of multimedia in developing social skills (cooperation, play, following rules and instructions) among disabled children who are capable of learning, on a sample of 20 students from the School of Intellectual Education in Sheikh Governorate, using the following tools: (Scale Stanford Binet Arabized Intelligence (4th ed.), Adaptive Behaviour Scale, Arabized and Standardized, Farouk Muhammad Sadiq, Computer-Based Multimedia Social Skills Training Program), using the experimental approach in this study.

The study reached the following results:

- The prepared program showed effectiveness in improving the social skills of the experimental research sample.
- Children’s experimental performance in cooperation skills on the social skills scale continues to improve.

Study by Dibouna Mohamed Lahcen, Aishawi Salman (2014), entitled: “The Role of Extracurricular Sports Activities in Developing Social Values among Intermediate School Students,” a memorandum to complete the requirements for the Master’s Degree from the University of KasdiMerbah “Ouargla,” specializing in motor education.

The study aimed to identify the degree to which extracurricular sports activities contribute to building and developing social values for middle school students, using the descriptive approach, on a sample of 150 middle school students from (12-15) years old, Ouargla Province, in a random manner. The study included a questionnaire as a tool for collecting information.

The study reached the following results:

- The schedule and timing allocated for practicing these activities are not very appropriate.
- Sports activities contribute to the acquisition of many social values among middle school students, such as (cooperation, competition, and sportsmanship).

There is a wrong view among parents regarding the subject of extracurricular sports activities.

- Group activities more than individual ones in learning and emerging social values.
- Students have a great desire to participate and contribute to extracurricular sports activities.

Methodological foundations of the field study:

1- Exploratory study:

The exploratory study is considered the fundamental basis for building research on it, and it is an essential and important step in scientific research, as through it the researcher can experiment with research methods to ensure their safety, accuracy, and clarity.

I approached the educational institutions in which the study was conducted, and contacted the professors of the subject, in order to find out all the steps that might obstruct or accompany the study. The questionnaire was distributed to a group of professors to ensure the validity of the tool used...

4-2- The approach followed in the study:

The scientific method is the method followed by the researcher in his study of the problem that is essentially the subject of the study, with the aim of discovering and monitoring facts, and arriving at results. In other words, the scientific method is considered a set of rules and foundations that are established in order to reach certain facts...(Al-Naimi, 2009)

In our study, we have relied on the descriptive approach, considering that it is the appropriate approach for studying phenomena and the relationships that exist between facts, meaning that it is one of the forms of organized scientific analysis and interpretation to describe the studied phenomenon, classify it, and subject it to careful study.

4-2-1- Study population and sample:

The research community is considered a frame of reference for the researcher in choosing the research sample. This frame may be a large or small community, and this frame may be individuals, schools, universities, or sports clubs. Our research community consists of 170 teachers of physical education and sports in all secondary schools affiliated with the Directorate of Education in the state of M'sila. The questionnaire was then distributed to the research sample, which was estimated at: 40 teachers.

4-3- Determine the study variables:

The variable is the factor that is affected by the relationship of another variable, and it can also be defined as the thing that has the ability to change, and that it is the subject of change, and therefore the research changes in a variable are represented in a dependent variable.

Independent variable: It is the one whose position leads to bringing about change by influencing the values of other variables that are related to it, and the independent variable in our research is represented by (problem-solving style).

Dependent variable: The value of which depends on the effect of the values of the dependent variable, and the dependent variable in our research is represented by some social aspects (cooperation - loyalty).

4-4- Tools for collecting data and information:

4-4-1- Questionnaire:

In our research, we used this questionnaire directed to physical education and sports teachers in secondary education to collect information that would help us reach the answer to the questions we asked at the beginning of our research.

The questionnaire is defined as: "A set of questions related to a topic or a group of topics that is addressed to a selected group of individuals or a specific team from it, in order to collect information specific to the problem being researched. (Aqil, 1997, p. 34)

It consists of a set of questions, half closed, half open, and optional, which are placed on a form distributed to specific people in order to obtain answers to the questions received.

The questionnaire form in our research contains questions directed to teachers of physical education and sports in the secondary education stage, divided into axes as follows:

- ✓ The first axis: specific to using the problem-solving method (statements 01 to 09).
- ✓ The second axis: specific to the quality of cooperation (statements 10 to 22).
- ✓ The third axis: specific to the quality of loyalty (statements 23 to 27).

4-5- Psychometric properties of the tool:

4-5-1- Accounting for honesty:

Honesty of arbitrators: The scale was presented to a group of arbitrators specialized in physical education and sports at the University of M'sila, and it was also presented to professors specialized in psychology from the University of M'sila as well. These arbitrators judged the statements in terms of verbal wording and the extent of their suitability to the axis, as well as the extent of their suitability to the tool as a whole. The questionnaire consists of 27 statements distributed over 3 axes that are consistent with the questions set in the study's problem.

Internal consistency validity: The validity of the internal consistency was relied upon, through the correlation of the tool's axes with each other and the correlation of the tool's axes with the total score of the questionnaire, based on the Pearson correlation coefficient as shown in the table:

Table No. (01): Shows the results of the Pearson correlation coefficient for the relationship between the study axes and the questionnaire as a whole.

The questionnaire as a whole	Developing loyalty	Developing a spirit of cooperation	Use problem solving method	Interviewer
0.65**	0.46*	0.50*	1	Use the problem-solving method
0.93**	0.88**	1	-	Developing a spirit of cooperation
0.96**	1	-	-	Developing loyalty
1	-	-	-	The questionnaire as a whole

** Significant at a significance level of 0.01 / * Significant at a significance level of 0.05

We note from the table that all the correlation coefficients between the axes of the study had statistically significant values at the significance level of 0.05 and 0.01, as they ranged between (0.46) for the correlation between the axes of using the problem-solving method and developing the quality of loyalty, and (0.88) for the correlation between the two axes of developing the spirit of cooperation. And developing the trait of loyalty. As for the correlation of the study's axes with the questionnaire as a whole, the correlation coefficient values were all statistically significant at the significance level of 0.01, as they ranged, as shown in the table, between (0.65) for the correlation between the axis of using the problem-solving method and the questionnaire as a whole, and (0.96).

Through the strong correlations between the study axes, and between the study axes and the questionnaire as a whole, we can say that the questionnaire has a high degree of validity and can be relied upon in the basic study.

Stability calculation: To calculate the reliability of the tool, we relied on two different methods: the split-half method and the Cronbach's alpha coefficient. Below we explain their results:

Half split: By dividing the tool into two parts and calculating the correlation between them, and since the two halves of the tool are not equal, we use the Guttman equation (**Guttman**) To obtain stability, the following table shows the value of stability according to this method:

Guttman coefficient (reliability coefficient)	Pearson correlation coefficient between the two halves	variable
0.84	0.78	Study tool

From the table it is clear that the value of the Guttman coefficient was estimated at (0.84), which is a high value and indicates that the tool is characterized by a high degree of reliability.

Cronbach's alpha coefficient: It is also called the consistency or internal consistency method, because it depends on the consistency between the phrases of the tool through the homogeneity of the variances. The following table shows the value of consistency according to this method:

Alpha coefficient	variable
0.89	Study tool

From the table it is clear that the value of the Cronbach's alpha coefficient was estimated at (0.89), which is a high value that indicates a high degree of homogeneity and consistency between the tool's statements, which indicates that the tool is characterized by a high degree of stability and can be relied upon in the basic study.

4-6- Statistical processing methods:

The Statistical Package for the Social Sciences program was used. Statistical Package for Social Sciences-SPSS (and Excel program) Excel (In analysing the data collected in this study, appropriate methods of analysis were used, which depend mainly on the type of data to be analysed and on the objectives and hypotheses of the study. Several statistical methods were used in order to employ the data collected to achieve the purposes of the study. The following are the methods: Which was used as follows:

A/ Regarding the psychometric properties:

- The Pearson correlation coefficient was used to estimate the validity using the internal consistency method of the relationship between the study axes and the questionnaire as a whole.
- Pearson correlation coefficient between the two halves using the Guttman equation (**Guttman**) to obtain reliability (Cronbach's alpha coefficient was used for reliability).

B/ Regarding the study hypotheses:

- One-sample t-test of statistical significance (Test)

Presentation and discussion of the study results:

To what extent do physical education teachers use the problem-solving method in teaching?

To answer this question, we relied on the arithmetic mean and standard deviation of the statements of the study tool, and in order to judge the arithmetic mean, we follow the following equation: number of fields between alternatives/number of alternatives, and since the alternatives are 1,2,3 respectively, the equation becomes: $2/3 = 0.66$. Then we rely on this value by adding it to the smallest alternative to set ranges through which we judge the arithmetic mean in the following way: $1 + 0.66 = 1.66$, $1.67 + 0.66 = 2.33$, $2.34 + 0.66 = 3$

Therefore, the fields become as follows:

(1 – 1.66) expresses poor use.

(1.67 – 2.33) represents average usage.

(2.34 – 3) expresses high usage.

Table No. (02) shows the arithmetic means and standard deviations of individuals' answers to the statements of the first axis.

standard deviation	SMA	Phrase	the number
0.53	2.35	Bring in teaching situations that help students think to the greatest extent possible.	01
0.54	2.60	I distribute responsibilities among the students according to their abilities and inclinations.	02
0.59	2.43	I rely on the problem-solving method to acquire sources of mathematical knowledge.	03
0.40	2.80	I encourage students and support them if they fail to solve the problem they face.	04
0.47	2.68	I rely on guidance in educational situations.	05
0.33	2.88	Motivate students when they feel bored.	06
0.49	2.63	Encourage students to draw on their previous experiences during the lesson.	07
0.43	2.75	I create educational situations that suit the students' abilities and physical and mental capabilities.	08
0.45	2.73	I provide students with means and tools that help them in educational situations.	09
0.17	2.64	The axis as a whole	
**23.26		Test value for one sample	

** The value is significant at the significance level of 0.01

We note from Table No.02) All the arithmetic averages for the statements of the first axis, regarding the degree to which physical education teachers in secondary education use the problem-solving method in teaching, all fall in the range (2.35-3), where they ranged between (2.35) for statement No. 01, and (2.88) for statement No. 06, This means that teachers apply indicators and procedures for problem-solving methods, such as providing means and tools that help students in educational situations, creating educational situations that suit the students' abilities and physical and mental capabilities, and preparing educational situations that help students think to the greatest extent possible....

Since the arithmetic mean for the axis as a whole, which is estimated at (2.64), falls in the range (2.34 - 3), this means that secondary education teachers use the problem-solving method in the physical education and sports class to a high degree.

In addition to our reliance on testing for one sample to compare between the mean of the axis, estimated at (2.64) and the average score of the expression (theoretical mean), estimated at 2. The value of the t test was estimated at (23.26), which is a statistically significant value at a significance level of 0.01, and expresses the presence of a statistically significant difference in Favor of the arithmetic mean, and this It supports the previously concluded finding that teachers use the problem-solving method in teaching physical education and sports classes.

Table No. (03) shows the arithmetic means and standard deviations of individuals' answers to the statements of the second axis.

standard deviation	SMA	Phrase	the number
0.55	2.55	Using problem-solving techniques in class helps students integrate into the group.	10
0.54	2.58	Using a problem-solving approach enhances the spirit of cooperationist team to win.	11
0.66	2.38	Using problem-solving method helps students get rid of shyness.	12
0.48	2.65	Using the problem-solving method motivates students to play collectively in one team.	13
0.59	2.53	Using the problem-solving method enhances students' sense of belonging to the group.	14
0.55	2.45	Using problem-solving techniques helps students make new friends.	15
0.59	2.45	Using the problem-solving method teaches students to engage in useful activities collectively.	16
0.59	2.43	Using the problem-solving method develops students' communication skills.	17
0.54	2.58	Using problem-solving techniques teaches students to help others even outside the classroom.	18
0.43	2.75	Using the problem-solving method develops the spirit of sports competition among students	19
0.55	2.50	Through this method, students learn dialogue and discussion skills.	20
0.59	2.45	Through this method, students learn to organize their thoughts to solve the problem they face.	21
0.54	2.58	Through this method, students learn to accept others and respect their ideas.	22
0.35	2.52	The axis as a whole	
**7.88		Test value for one sample	

** The value is significant at the significance level of 0.01

We note from Table No.03) All the arithmetic averages for the phrases of the first axis on developing the problem-solving method in teaching for the characteristic of cooperation within the physical education and sports class for students in the secondary education stage, all fall in the range (2.38-3), where they ranged between (2.38) for phrase No. 12, and (2.75).) for phrase No. 19, and this means that all teachers of physical education and sports agree that applying the problem-solving method develops the quality of cooperation among students, such as enhancing the spirit of cooperation among team members to win victory, motivating students to play collectively in one team, and developing the spirit of sports competition among students. As well as teaching students to help others even outside the classroom.....

Since the arithmetic mean for the axis as a whole, which is estimated at: (2.52), falls in the range (2.34 - 3), this means that secondary education teachers agree that using the problem-solving method in the physical education and sports class develops the quality of cooperation to a high degree.

In addition to our reliance on testing for one sample to compare between the average of the axis, estimated at: (2.52) and the average score of the statement (theoretical average), estimated at: 2, and the value of the t test was estimated at: (7.88), which is a statistically significant value at the significance level of 0.01, and expresses the presence of a statistically significant difference in favor of the average. Arithmetic, and this supports the previously reached finding that teachers agree that using the problem-solving method develops the quality of cooperation in the physical education and sports class.

Therefore, the first research hypothesis was accepted, which states: “Using the problem-solving method has a positive role in developing the cooperation trait among secondary school students.”

Table No. (04) shows the arithmetic means and standard deviations of individuals' answers to the third axis statements.

standard deviation	SMA	Phrase	the number
0.50	2.84	Using the problem-solving method develops commitment and adherence to the group's rules.	23
0.63	2.40	Using the problem-solving method provides the opportunity for students to exercise leadership roles	24
0.55	2.55	Using problem-solving techniques teaches students to play for the team.	25
0.64	2.53	Using the problem-solving method increases the cohesion of the group that students form.	26
0.54	2.58	Using problem-solving method enhances social responsibility among students.	27
0.40	2.50	The axis as a whole	
**9.38		Test value for one sample	

** The value is significant at the significance level of 0.01

We note from Table No.04) All the arithmetic averages for the phrases of the first axis on developing the problem-solving method in teaching for the trait of loyalty within the physical education and sports class for students in the secondary education stage, all fall in the range (2.53-3), where they ranged between (2.53) for phrase No. 26, and (2.84) For phrase No. 23, this means that all teachers of physical education and sports agree that applying the problem-solving method develops the quality of loyalty among students, such as enhancing social responsibility among students, providing the opportunity for all students to exercise leadership roles in the team, and adhering to and adhering to the rules of the group... .

Since the arithmetic mean for the axis as a whole, which is estimated at (2.50), falls in the range (2.40 - 3), this means that secondary education teachers agree that using the problem-solving method in the physical education and sports class develops the quality of loyalty to a high degree.

In addition to our reliance on testing for one sample to compare between the mean of the axis, estimated at: (2.50) and the average score of the statement (theoretical mean), estimated at: 2, and the value of the t test was estimated at: (9.38), which is a statistically significant value at a significance level of 0.01, and expresses the presence of a statistically significant difference. In Favor of the arithmetic mean, and this supports the previously concluded finding that teachers agree that using the problem-solving method develops loyalty in the physical education and sports class.

Therefore, the second research hypothesis was accepted, which states: “Using the problem-solving method has a positive role in developing the trait of loyalty among secondary school students.”

- Conclusions:

After completing our study, we concluded the following results:

- ✓ It has been shown that the problem-solving method has a major role in developing some social aspects among secondary school students.
- ✓ Problem solving style has an important role in developmentcharacteristicCooperation among secondary school students. This is confirmed by the results obtained and what is achieved by the first hypothesis: “Using the problem-solving method has a positive role in developing the trait of cooperation among secondary school students.”
- ✓ Problem solving style plays a major role in developmentcharacteristicLoyalty among secondary school students. This is confirmed by the results obtained and what is achieved by the second hypothesis: “Using the problem-solving method has a positive role in developing the trait of loyalty among secondary school students.”

2- Suggestions:

After presenting the research results and coming up with some conclusions, we decided to give some suggestions, including:

- ✓ Including problem solving as a very important means of completing physical education and sports lessons.

- ✓ Preparing pedagogical documents that are easy to understand and read, in order to enrich knowledge and applied knowledge for the physical education and sports class.
- ✓ It is necessary to pay attention to teaching methods and use them extensively in physical education and sports lessons.
- ✓ It is necessary to choose the appropriate method according to the ability and capabilities of each professor.
- ✓ Giving full care and great attention to the training of teachers of physical education and sports and qualifying them from all cognitive, psychological and social aspects.
- ✓ The necessity of establishing special facilities for practicing sports (halls, pedagogical facilities).
- ✓ It is necessary to take care of students in middle and primary education because the student in these two stages of life needs to play for the proper development of his personality in all its aspects, and also considering that these two stages are considered the basic rule for the secondary education stage.
- ✓ Increasing the number of physical education and sports classes to achieve the desired goals.

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