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Study on optimizing motivation for learning in middle school students

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Abstract. Motivation is found in all behaviors of the human psyche. There is no human action or inaction that is not motivated. Regarding the relationship between motivation and performance, motivation stimulates new experiences of internalizing values. There are some authors (Brophy, 2004) who argue that academic motivation can be improved through school interventions. Teaching students learning strategies can increase academic motivation. Starting from these theoretical considerations, but also from educational practice that shows a slight decrease in interest in learning in middle school students, we were concerned with identifying certain ways to optimize motivation for learning. In this sense, we analyzed the impact of socio-educational goal planning behaviors on the level of academic motivation in middle school students. The research results confirm the role of goal planning activities in terms of optimizing learning motivation in high school students.

Keywords: motivation, learning, optimizing, goals, objectives

1. Introduction

Motivation is found in all behaviors of the human psyche. There is no human action or inaction that is not motivated, although the subject is not always aware of what pushed or stopped him from a certain action. Knowing the real motivation, we know the "causal" source of the conduct (Mitrofan, 2008, p. 784, Sillamy, 1995, p. 202). Thus, motivation can be defined as a "set of innate or acquired motives, conscious or unconscious, from physiological necessity to abstract ideal,



which determine and sustain the conduct of the individual" (Idem, p.784). Together with affectivity, motivation enters the structure of the dynamic-energetic side of the personality. B. Zörge (1976) lists five component factors of motivation: needs, impulses, intentions, valences and tendencies. Needs represent the fundamental motivational structures of the personality, the "primary source of action" (Roşca, 1943).

Regarding the relationship between motivation and performance, motivation and learning, the idea of the motivational optimum, i.e. an optimal intensity of motivation that allows the achievement of high performance or at least the expected ones, has been outlined since the beginning of the twentieth century. In the work "Foundations of Psychology" (1991), M. Zlate specifies that one can speak of motivational optimum in two situations: a) when the difficulty of the task is correctly assessed by the subject; b) when the difficulty of the pregnancy is incorrectly assessed by the subject: either underestimates or overestimates the difficulty of the pregnancy. Thus, the subject can be undermotivated, acting in the conditions of an energy deficit, which will lead to the non-performance of the task, or overmotivated, the subject acting in the conditions of an energy surplus, which could disorganize, stress, unbalance, spending his energy resources even before facing the task. In order to achieve a motivational optimum, a slight imbalance between the intensity of motivation and the difficulty of the task is necessary: if the difficulty is average, but it is appreciated as high, then an average intensity of motivation is sufficient to achieve it (so a slight undermotivation); if the difficulty of the task is medium but is considered to be low, an average intensity of motivation is sufficient (therefore a slight overmotivation). In this way, we can say that motivation energizes and facilitates the learning process, dosing the effort and concentration of the subject.

Learning, says I. Neacşu (2008, p. 233), is "an activity essentially motivated and oriented towards knowledge, towards sensitivity, towards rationality and communication. Motivation makes learning happen and self-sustain; it generates energy; is a tempo regulator; operates as a selector of goals and objectives; it rationalizes effort and time, stimulates the success/performance of the learner, stimulates new experiences of internalizing values".

There are some authors (Brophy, 2004) who argue that academic motivation can be improved through school interventions. Teaching students learning strategies can increase academic motivation by increasing opportunities for success and encouraging students to develop a sense of internal control over their academic progress. At the same time, practicing skills will encourage students to use learning strategies effectively.

Starting from these theoretical considerations, but also from educational practice that shows a slight decrease in interest in learning in middle school students, we were concerned with identifying certain ways to optimize motivation for learning. In this regard, we designed an experimental research design. We analyzed the impact of socio-educational goal planning behaviors on the level of academic motivation in middle school students. We compared the score obtained on the academic motivation scale in the initial stage with the score obtained in the final stage. Guided and semi-guided activities were carried out to complete worksheets such as "Motivation Letter" and a work plan entitled "My Progress". Certain activities in these sheets were done collectively by the



experimental group, and others were done individually. At the end of a three-month period, students' attitudes towards the achievement of the objectives and self-evaluation regarding their achievement were measured. The last stage of the research consisted in measuring the level of academic motivation at the level of the two groups (the control and the experimental) and evaluating the impact of the training program at the level of the experimental group.

2. Research objectives

The aim of the pedagogical research was to establish the role of goal planning action in optimizing motivation for learning in middle school students.

3. Research hypotheses

It is assumed that there are significant differences between the experimental group and the control group regarding the results obtained at the initial testing and those obtained at the final testing regarding the learning motivation of middle school students.

4. Research variables

- a. the independent variable: the systematic application of exercises for planning the learning objectives;
- b. the dependent variable: increasing the motivation for learning of the students in the experimental group.

5. Description of subjects

Behavioral indicators	The student's form of expression	Number of occurrences exceeding 10 seconds duration
Body and head position	Head down, body turned to the side or at the back of the class (with your back to the teacher), the head is supported by the hands or the hands partially or completely cover the face.	
Gestures	Repeated movements of the lower limbs, kicking, repeated manipulation of a school object (pen, pen, eraser, etc.)	
Facial expressions	Repetitive movement of eyebrows, smiles to other students, yawning, frowning.	
Mouth expression	Grimaces, pursed lips.	
The voice	The even tone of the voice, the even rhythm, the inflections of the voice.	
Hearing	Not responding to teachers' questions or responding late and after repeated questions from the teacher.	
Other manifestations		



Other observations about the lesson (teaching, activities, recap, etc.)		
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The group of subjects consisted of 5th and 6th grade students (total 4 classes, total number of subjects: 43), from a secondary school in Constanța and a secondary school in Bucharest.

More than half of the subject group (53.49%) is 12 years old. The second age category represented is that of 13 years, in a percentage of almost 28%.

The gender distribution of the subject group is relatively equal.

6. Description of research methods and instruments

a. Observation - *Observation grid for decoding students' motivation.*

The observation took place during one school week of the first semester, respectively between November 15 and 19, 2021 (2 days - 5th grade and 2 days 6th grade).

b. Questionnaire-based survey - *Learning Strategies and School Motivation Assessment Questionnaire (SMALSI)*, developed by Stroud K. C. and Reynolds, C. R. Adaptation and standardization on the Romanian population, coordinator Mihaela Porumb. For the present research, we extracted only those items that referred to school motivation. SMALSI is a self-assessment tool that takes between 20 and 30 minutes to complete. The questionnaire can be administered individually or in groups, as it is necessary for the student / students to answer all SMALSI items from the age-appropriate version. Given that we used the computerized version, the version appropriate to the student's age was automatically chosen, each subject being first identified by two initials (name, first name, fictitious). The actual age of the student was entered, this being essential for completing the appropriate version of the questionnaire. The computerized version was completed online, on the evaluation platform developed by Cognitrom, CogniKit¹. The SMALSI items are worded so that they can be easily understood by anyone with the reading ability of a 3rd grade child. According to what is mentioned in the test manual, "...certain children of younger ages or with reading problems or attention difficulties may need more than 30 minutes to complete the questionnaire" (Stroud K.C, 2010, p. 25).

c. The pedagogical experiment – pedagogical program to optimize motivation for learning

d. Worksheet - "My letter of motivation" (Opre, A., Benga, O., Băban, A., 2015, p. 144).

e. My Progress worksheet (Opre, A., Benga, O., Băban, A., 2015, p. 144).

Statistical data analysis was performed using the SPSS program, version 20.0. The quantitative and qualitative results obtained were presented in graphs and tables.

¹Available at <https://www.cognikit.ro/acces/> for clinical psychologists. For access to the platform, a training course was followed, completed with the granting of the license to use the platform, following the successful completion of the final testing by psychologist Oana Gari-Negut.



7. Ethical requirements of research

We designed this pedagogical research respecting the principles underlying the code of ethics and professional deontology of any researcher. We have conducted research and development activities showing respect for participants, not treating them merely as a means, but recognizing their ultimate value according to the principle of dignity.

We respected the rules of good conduct in scientific and scientific-didactic activity by applying the principles of good scientific practice and by assuming responsibilities. This fact is demonstrated by the activity of open communication with the participants, by the transparency of the purpose and objectives proposed in this research, respecting anonymity both in publication and in front of the other participants.

In the theoretical part of the substantiation, we have fully respected the intellectual property of the researchers, presenting the primary data safely with references to the related work done.

Before any activity undertaken for this research, participants were informed of the necessary steps and everything took place following their consent.

8. Analysis, processing and interpretation of research data

The initial stage of the research began with the observation of the students during the didactic activities. We opted for online observation in order not to influence the results and behavioral manifestations of the students. Also, the observation carried out was selective, focusing our attention only on the aspects mentioned in the observation grid. The most recorded manifestations were: head supported by hands, repeated movements of the lower limbs and repeated handling of a school object. It was observed that certain behaviors illustrating students' lack of interest occurred more often in a certain type of lesson, namely in lessons that convey new knowledge in a frontal manner, unaccompanied by any other teaching aids (such as: visual, auditory, interactive).

The application of the SMALSI questionnaire for the evaluation of learning strategies and school motivation led to obtaining some initial results that were considered as a starting point for the actual implementation of the experimental approach. Given the fact that the questionnaire items allowed the recording of quantitative data, we calculated a series of statistical indices such as the mean, standard deviation and median.

Tab. 1. Mean, standard deviation and median

Experimental group and control group	Mean	Std. Deviation	Median
EG	43.8636	9.22881	40.5000
CG	39.9524	6.98911	37.0000
Total	41.9535	8.35223	39.0000

As can be seen, the average recorded in the experimental group (43.86) is higher than the average recorded in the control group (respectively 39.95), but it is not a very significant difference, in the context of the recorded response scales.

The formative stage consisted in the introduction of a motivational optimization program – practical activities in which students from the experimental group were presented with a series of techniques for optimizing motivation for learning.



I presented the students in the experimental group with a first activity called *Motivation letter*. The motivation letter was designed to include one or more personal goals, describe the actions/behaviors needed to achieve them and specify what the students are willing to give up in order to achieve them. The purpose of writing such a letter is to increase the sense of responsibility and involvement of the students in achieving the proposed goals. Materials needed: individual worksheets. Teaching methods used: brainstorming, individual exercise, pair exercise, group discussion. Running time: 45 minutes. After distributing the sheets to the students present, I asked them to write down 1-2 goals related to what they want to achieve during the semester. I explained to them that these goals must be related to school, to certain sports activities done outside of school or in school, as well as to relationships with others. It is important that these goals are achievable and realistic for the intended period, namely one semester (approximately 3 months). I asked the students to pair up with their bank mates. Each team member will check each other's goals and help them check that they are realistic and achievable.

Another activity consisted in drafting an action plan. Obstacles to carrying out the plan were identified (eg insufficient time, lack of location, need to give up other preferred activities, greater interest in other activities, etc.). We divided the collective class into groups and discussed the solutions proposed by them. I also explained to the students the need for a self-monitoring system to achieve the proposed goals.

A final activity consisted of students practicing critical thinking in relation to their experiences. This involves developing the ability to self-assess outcomes, identifying strengths (strategies that are useful and can be used in future in similar situations), identifying weaknesses (identifying the main obstacles/difficulties) and ways in which these can be addressed. Among the objectives considered by this activity, the most important was that of self-evaluation regarding the degree of achievement of the proposed action plan. Teaching methods used: brainstorming, individual exercise, pair exercise and role play.

The self-evaluation was carried out by completing the *My Progress worksheet*. Students worked in teams of 4-5 members to share experiences and compare how each group member managed their own plan. Later, after completing the exercise, each team member was asked several open-ended questions: "What were the obstacles your team members faced?", "How many of you changed your original plan and how many did not?" ", "Why do you think some did this and others didn't?". Finally, the students answered the last question in their worksheet, namely the one related to how they would handle a situation similar to the one they faced in the future.

Through the analysis of the impact of the training approach, the improvement of the level of academic motivation was highlighted in the case of the experimental group, compared to that of the control group. Moreover, since we are talking about students from the same school, we also had requests from those in the control group to participate in the training workshops after the end of the experiment, due to the positive feedback they enjoyed among their colleagues in the experimental group.

At the end of the training program, the self-evaluation was carried out regarding the achievement of the goals proposed by the students through the online application of a questionnaire.

Recorded responses to the question "How satisfied are you with how the plan you set for achieving your goal worked?" 54.55% are in the "Partially satisfied" category and 31.82% in the



"Very satisfied" category. The neutral response, let's call it this way, "Neither satisfied nor dissatisfied" registers only 13.64%. The results are encouraging. This fact has, in our opinion, several possible explanations. The first would be the own assumption of the goals and the visualization of those actions that could hinder the student in achieving the goal, as well as those actions that could help the student in achieving the goal. The second possible explanation would be that this assumption is made with other people (colleagues, teachers, maybe even parents), which implies a greater responsibility of the student. The attitudinal side is important, because a positive attitude towards the results obtained encourages the student to repeat the plan and way of conception in cases where he sets other goals.

Regarding the degree of achievement, implementation of the proposed objectives, the students were asked to make a ratio between the number of actions or behaviors they performed and the total number of proposed actions or behaviors. This self-assessment is important, contributing to the awareness of important aspects. The proportion of responses obtained is suggestive. Almost 60% (59.09% to be exact) chose the answer "Three quarters". Therefore, the dimension of effective achievement of the proposed goals has been achieved. This may be due to the way the goals were set (perhaps those goals were too easy to achieve). On the other hand, there is the possibility that the establishment of the plan and the goals had a positive influence in achieving them.

The last stage of the experiment consisted in measuring again the level of academic motivation at the level of the two groups (the control and the experimental) and evaluating the impact of the training program at the level of the experimental group. The analysis of the results allowed us to highlight some differences between the averages recorded by the experimental group and those recorded by the control group, as a result of direct involvement in the formative intervention. Thus, under the aspect of academic motivation, we can highlight a significant increase in the average of the experimental group, in relation to the data obtained by the control group (respectively 38.85 versus 47.61). The existence of this statistically significant difference can also be demonstrated by the t-value significance threshold, which is $p < .05$.

Table. 2. Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Paired Sample 1 GE Post Test - GC Post test	8.76190	10.77917	2.35221	3.85529	13.66852	3.725	20	.001

The analysis of this threshold of significance highlights specific changes in the approach to the educational phenomenon analyzed from a motivational aspect, at the level of the experimental group. The increase in the level of academic motivation directly brings concrete benefits in



increasing the level of effective and sustainable involvement in the instructive-educational process. In particular, we refer to motivation based on internal reasons, with considerably increased impact in terms of consolidating acquired knowledge and supporting the learning process with new acquisitions. Stimuli of an internal nature, such as the need for knowledge, the desire to be informed, the permanent need for exploration, epistemic curiosity, can be easily exploited in the school environment and in individual endeavors.

Conclusions

In conclusion, we affirm that the research results confirm the role of goal planning activities in terms of optimizing learning motivation in high school students.

The formative stage of the research has achieved its stated goal. During it, I held a series of workshops with the experimental group, during which the actions and behaviors that encourage and hinder the students in achieving the proposed objectives were explained and clarified. This awareness-raising, direct expression, sharing activity has been lucrative and enjoyable. Many students found that they faced the same obstacles, while others discovered new actions and behaviors to help them meet their goals. Through the analysis of the impact of the training approach, the improvement of the level of academic motivation was highlighted in the case of the experimental group, compared to that of the control group.

At the same time, our investigative approach presents certain limits. These are primarily products of the experimental design. The period between the two measurements of the academic motivation variable was quite long, namely three months. During this period of time, students in both research groups were also influenced by other variables, such as cognitive acquisitions that occurred as a result of the learning process and that positively or negatively influenced academic motivation. Also, there was a process of cognitive and emotional development of the students during this period of time, under the influence of the educational and social factors to which they were exposed. Last but not least, there is also an influence of the people who facilitated the application of variable measurement tools.

However, the present research opens the way to new opportunities to expand the variables and apply the design to a larger group of students. In this way, extensive variables can be taken into account, on the basis of which valid conclusions can be drawn and which can be reproduced in different contexts.

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