

STUDYING MINDSETS OF STUDENTS TO SOLVE PROBLEMS

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Abstract: This theme of solving problems is very actual. Their conclusion begins in school and continues whole life. This presentation consists of an investigation with students about solving problems. During the work the following conceptual basis for research intentions was raised: As a basic conceptual basis in this study the increased interest in psychological approaches such as changes in Bulgarian educational paradigm determine the need for the transformation in education is considered. Conceptually, the reason is the fact that the current situation needs ways which to be found to improve the practical training of young people.

Last but not least, it can be said that modern socio-scientific context puts imprints on attitudes and the ways of acquiring the students, the emphasis is placed on the learner as an individual - with specific needs, attitudes and motivation. In connection with the teaching of problem-solving, the following general questions arise: How the students in the program acquire the necessary training? Is it adequate in their future practical activity? How modern is the current methodology for solving problems and how to update it? What are the new guidelines to improve training in order to solve problems in a meaningful? How to determine the ratio of students to solve problems? There are the conclusions from the results of the investigation.

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Introduction

Only the accumulation of knowledge in a discipline is not enough. It is important that the knowledge can be applied in solving various practical tasks. "In applying the knowledge in practice, a rise is carried from the abstract to the concrete. Understanding and remembering are absolutely necessary but not the only precondition for the successful application of knowledge" (Andreev, 1987). Solving problems recreates theory into practice and demonstrates the meaning of the study. In this scientific-practical study, the problem of the attitudes of students learning to solve tasks is examined. Psychological approaches to selection, training, and implementation of rules for solving problems are established. The reflection of the author from his long teaching is used.

A real part

It could be said that the "quality of each product as well as of knowledge, is a function of the quality of the processes that create the product. Only through the optimum management of knowledge and its quality can we be given the correct answer to the questions: "What knowledge is to be produced," "For whom is it to be produced," and "How is it to be produced" (Ivanova, 1994).

This scientific-practical study does not claim to solve all questions but, has the ambition to interpret the survey given to students, which was conducted during the academic work and gives both interesting results and has formed a certain type of thinking.

The purpose of the survey is to establish: what are the attitudes of students to the process of solving problems flowing in classes; what are their attitudes to their own participation in this process as future leaders and representatives of various institutions.

The working hypothesis of this survey can briefly be formulated as follows: We assume that the attitudes of respondents will be changed in a positive way, after passing through a series of trainings for solving problems in different disciplines.

The study was conducted with students majoring in "Technology, technology and entrepreneurship" / TTP / "Business Management" / SU / and "International Economic Relations" / Relationships / first course in the academic year 2015/2016. Their total number is 116. The distribution of subjects was as follows: TTP - 10 T - 82 and Relationships - 24. Consciously freshmen were selected to track their attitudes and presented at the beginning of their training. It would be interesting for them to be tracked down and at the end of their studies. The actual survey focuses on the attitudes of students for the specific type of learning activity.

The attitude towards an object, exploring attitudes to it are binary - "strongly disapprove" - "not approve." Three components have been explored:

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- Associated with our knowledge of the site;
- Related to the emotional evaluation of the site.
- Related to the behavior of the object.

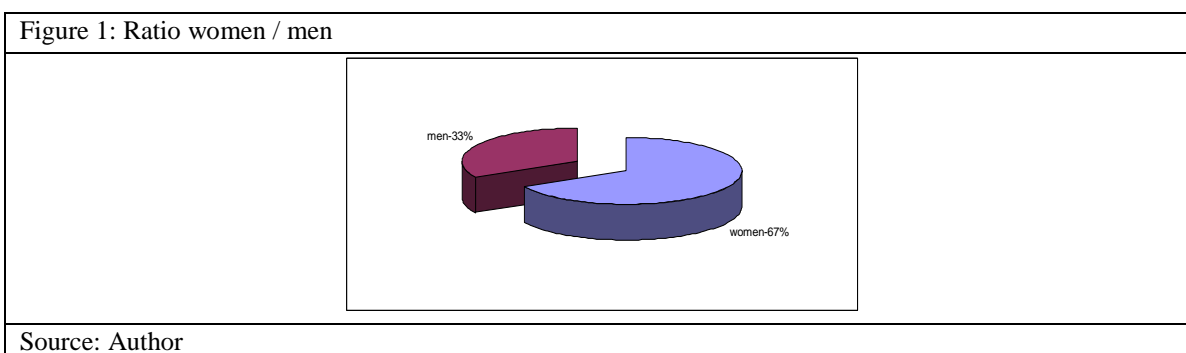
Writing on attitudes, we are actually looking at the attitude of the individual and in this sense they are regarded as having a "sustainable latent predisposition of the individual to positive or negative assessment of the object or situation that arises on the basis of life experience, it turns regulatory dynamically organized influence on perceptual, emotional and mental processes and results in consistency of behavior - verbal and non-verbal" (Mitkova, 2010)

Attitudes can be defined as a mental state of the human predisposition to certain activities in certain situations. They can be based on positive or negative views about people, events or processes forming the subject of attitude. The influence of attitudes on the effectiveness of each activity is directed and deep because they are a constructive element of motivation and personal attitude to the action. Attitudes are based on the value system of the individual, his perceptions about themselves and the world. Like most mental phenomena they are dynamic and subjected to change and development that would motivate another similar study.

In the survey, we chose to study six functions of attitudes to solve problems. There is also included the rock of denial for a fuller examination of these attitudes. The questions are covered in full enumeration of possible answers (Piryov & Desev 1981).

1. Cognitive attitude - reflects the attitude of the individual to the knowledge that can be acquired. Here it reflects the trend towards deepening knowledge in a professional way. The individual seeks knowledge to make sense of the world around him;
2. Value adjustment - reflects the attitude of individuals towards the realization of values in the working process. Here, it is good for the student to attach importance to the good performance of the team, the standards in the system, and gives a higher sense of their future profession;
3. Material attitude - reflects the material interest of students for participation in his future work purely. The attitude towards material gain applies to comparing their pay with the salaries of others;
4. Ego protecting attitude - reflects the desired future position in the hierarchy of the society. It is part of the reference group, and one has the feeling that was adopted as part of it;
5. Energy saving attitude - reflects the attitude of the individual to retreat and the failure to act. The attitude is passive about investing efforts into action. Lack of enforcement activities on its own initiative;
6. Socially progressive attitude - refers both to career development, i.e., the desire to rise in the hierarchy (even without regard to real possibilities) and projection over other (even without regard to the real achievements) and to the benefits and privileges that a person receives unlike other people;
7. The scale of denial - this scale reflects the existence of resistances, negative attitude of the individual to the job and negative attitude towards the implementation of the tasks in teamwork. Higher scores on this scale could mean as the entirely negative attitude of the student, and a moment of dis-adaptation. Regardless of the interpretation, obtaining inflated results on this scale, one should address the causes and take appropriate measures.

The proposed functions are the prism through which will be examined the attitudes of students to the process of solving problems. The main allegations are formulated in the form: , because: In the final version 5 are the formulated statements. Of the surveyed students 78 are women, and 38 are men. Graphically it looks like this: (fig. 1)

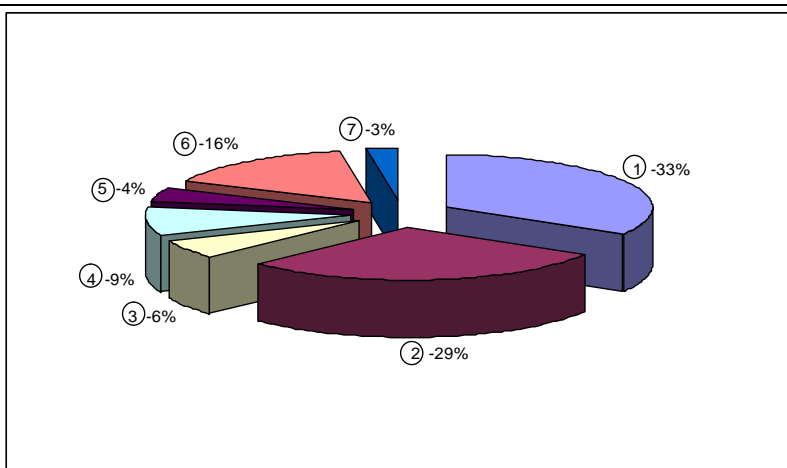


The first question is worded as follows: "I like my chosen specialty because:

1. ... gives me the opportunity to learn many new things.
2. ... the specifics and objectives are important to me
3. ... gives me good opportunities for future payment.
4. ... at future work I could run a team.
5. ... I led without much effort.
6. ... have the opportunity for career development.
7. ... I chose it by accident. "

Stratification in these attitudes is as follows: 1 - 39 students, 2 - 34 students, 3 - 7 student, 4 - 10 students, 5 - 5 student, 6 - 18 students, 7 - 3 student. The schedule specified values are distributed as follows: (fig. 2)

Figure 2: Election of specialty



Source: Author

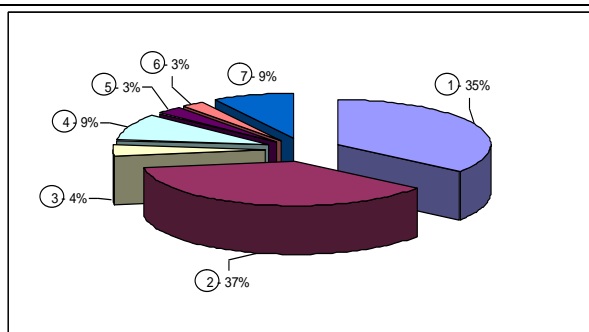
It is noteworthy that the logical answers to every student are the majority. Visible is the pursuit of knowledge, to the opening of new goals and perspectives.

The second question was: "Solving the problems in the learning process is significant because:

1. ... thus I put into practice what they have learned in lectures.
2. ... learn to seek the most valuable in the taught material.
3. ... at solving practical problems may have an additional charge.
4. ... I could become head of the experimental team.
5. ... guiding his colleagues will leave them to do the job.
6. ... dealing with tasks prepares me for my professional development.
7. ... I do not like the process of solving problems. "

These responses from students are the following: 1 - 41 students, 2 - 43 students, 3 - 5 students, 4 - 11 students, 5 - 3 students, 6 - 3 student, 7 - 10 students. Graphically these values look like this: (fig. 3)

Figure 3: Importance of solving problems



Source: Author

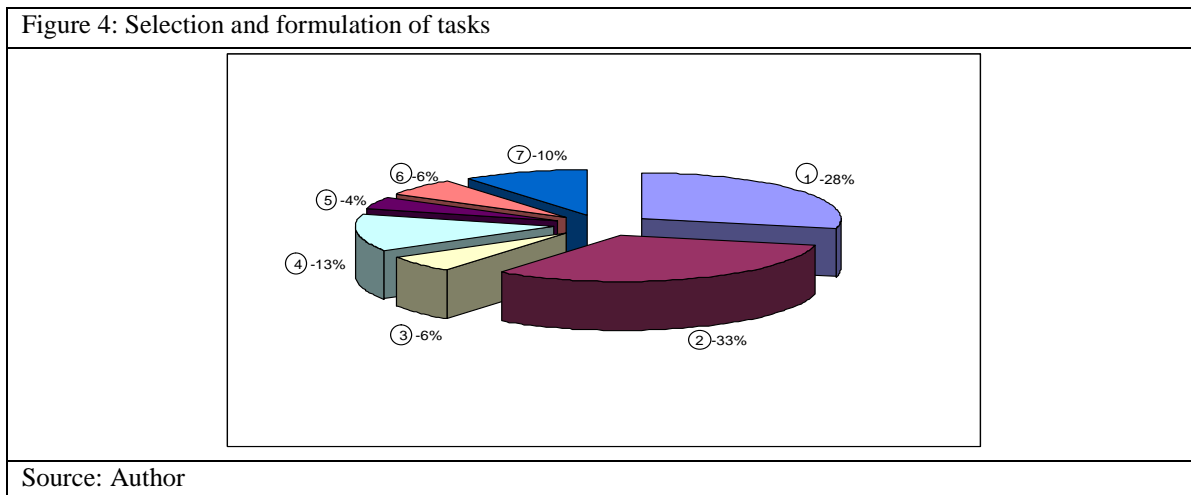
On that graph, it is shown that there are few results 6. Obviously, students do not associate the process of solving problems in their future career. The case may have its logical explanation. If the exercises are solved "invented" and non-life tasks, their effect would be purely academic. The tasks that are solved with training, an opportunity must be from actual practice. They need to be referred to real objects.

Third question: "The selection and formulation of tasks are important because:

- 1....so the real situation turns into tasks.
- 2.... reveals the best point of solving problems.
- 3.... I get the opportunity to select tasks in their future activities ,,, based pay.
- 4....can prioritize tasks to be performed.
- 5....I can decide the easier ones.
- 6....every choice is important.
- 7....not like to solve problems..“

The responses of the students are:

1 - 33 students, 2 - 37 students, 3 - 7 students, 4 - 15 students, 5 - 5 student, 6 - 7 student, 7 - 12 students. The schedule specified values are distributed as follows: (fig. 4)



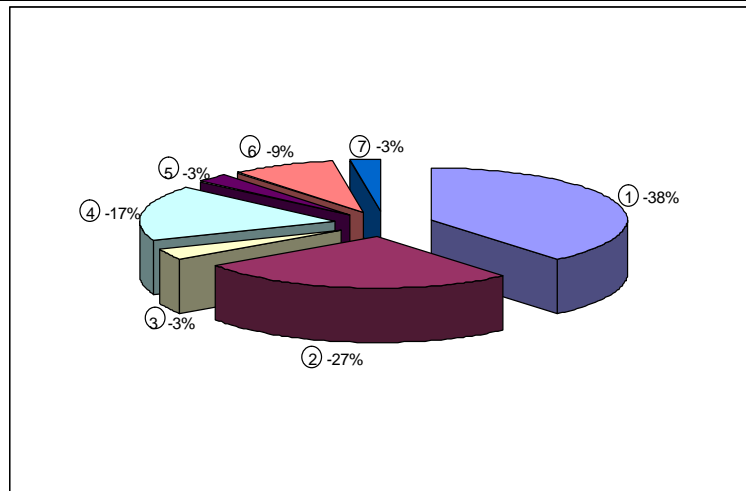
The condition of the task and its results correspond to a real practical situation. It should not lead to absurd or unusable results. In the practice of training, most often the given tasks to educational content are selected intuitively. The connections between the elements of the content must be transformed into an adequate system of these tasks. Choosing the type and complexity of tasks and sequence of their placement, the trend towards a gradual complication and promotion of cognitive activity should be optimized. The selection of tasks, the way of putting them, and their analysis helps to see beyond the individual task and to grasp the general way to solve them.

The fourth question is: "The proposed steps for solving tasks help because:

- 1....thus the problem is decomposed and easy.
- 2....learn to work in stages.
- 3....every stage could be well paid
- 4....gives me an opportunity to acquire skills to work in groups performing different stages.
- 5....cannot miss any stage if somebody else does the job.
- 6....each step brings me closer to my future practical activity.
- 7....these steps do not help me.

Stratification in these attitudes is as follows: 1 - 45 students, 2 - 31 students, 3 - 4 students, 4 - 20 students, 5 - 3 students, 6 - 10 students, 7 - 3 student. The schedule specified values are distributed as follows: (fig. 5)

Figure 5: Steps for decision



Source: Author

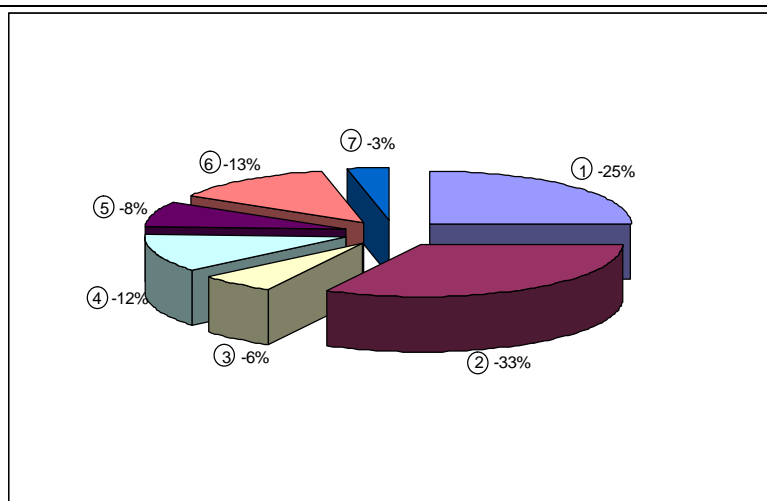
Answer 1 and 2 give 46% of the total. This means that students perceive stages offered as an aid to solve the problem. Breaking the separated parts into tasks whose solution is easier and faster. The end result summarizes the stepwise answers. So many tasks are algorithms, and their decision becomes certain rules.

The fifth question is worded as follows: "I participate fully in the process of solving problems because:

- 1... thus I get deeper professional knowledge.
- 2... thus appreciate their competence.
- 3... the physical benefit of dealing with tasks is great.
- 4... in its future shall I set tasks.
- 5... prepare for a manager who only puts tasks.
- 6... have the opportunity for advancement in the hierarchy after dealing with problems.
- 7... I have no choice."

Stratification in these attitudes is as follows: 1 - 29 students, 2 - 38 students, 3 - 7 student 4 - 14 students, 5 - 9 students, 6 - 15 students, 7 - 4 students. The schedule specified values are distributed as follows: (fig. 6)

Figure 6: Sufficiency of solving



Source: Tsvetana Kostadinova Antipesheva

And here it seems overwhelmingly professional. Students assess their own competence to contribute fully to the work. The important fact is the significance they attribute to their work in the team and their commitment to the event.

Conclusion

The conclusions that can be finally drawn are the following:

- The accumulation of knowledge leads to more easily cope with any task;
- There is generally positive attitude towards the process of solving problems both in school and in life;
- Even people with mercantile attitude tend to participate in this process, knowing that they will benefit from it;
- Possible positive change on their own values and attitudes.

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