

## **Experience of Intensification of Students' Cognitive Activity in the USSR (Postwar Period the Middle of the 20<sup>th</sup> Century)**

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**Abstract.** The article reflects the experience of Kharkiv higher educational institutions' leading teachers who were looking for and using ways to enhance cognitive activity of students in the difficult recovery time of higher school after the Second World War. Teachers' attempts to develop students' cognitive activity were conditioned by the need to perform complex tasks (to increase constantly the level and to improve the quality of graduates; to strengthen links between theory and practice; to attract students to scientific researches and introduction of teaching staff's inventions in production; to improve qualifications of teaching staff of higher educational institutions (HEIs); to develop initiative of universities' and institutes' teachers and professors; to develop and intensify independent work of students in the learning process), which were put forward the higher education institutions by the state leadership. Kharkiv University' and institutes' progressive professors tried to intensify students' cognitive activity at lectures, workshops, seminars, consultations, laboratory workshops. They used a variety of unusual for that time teaching methods: search, problem, research, etc. The article presents examples of various tasks (situation-exercises, group games, situations-problems) and approaches to the educational process (using problematic approach while giving lectures, case reports of students at lectures, exchange of best lecturers and others), describes the characteristics of using of them at lectures, seminars and workshops.

### **1. Introduction**

In the postwar years, higher education in the Soviet Union was in a difficult position. On the one hand, there were not enough qualified teachers, on the other, - a lack of professionals in all sectors of the economy had meant that universities had a large number of students of different backgrounds, motivation for learning activities, even different age. In addition, higher school tried to run "training arsenal and tools for specialist training (principles of drafting curricula, programs, forms and methods of work, recording, monitoring, evaluation, etc.)", which were used in pre-revolutionary times, when HEIs were focused mostly on noble and a few well-prepared graduates of elite secondary schools [1]. It is clear that the old principles and teaching methods in academic background of the old structure could not work effectively.

At the time the didactics of higher school was still under development. It did not acquire systemic characteristics and attributes as a theoretical discipline. The development of teaching ideas was going through accumulation, analysis and synthesis of empirical data on specific teaching problems. The most urgent issues that bothered teachers and scientists of the time were problems of optimization of different kinds of teaching and intensification of students' cognitive activity; improvement of learning content; use of visual aids in the learning process, including the TMT. In the early 60s the researchers revealed a tendency to consider certain aspects of programmed teaching [1].

In the period under research all spheres of life in the country were influenced by government policy. Higher education was not an exception. The government and the Communist Party demanded HEIs to improve training and increase the number of professionals necessary for the country to restore and develop the economy.

In addition, after the war, which was very difficult for the population of the whole country, people themselves tried to put as much effort to quickly improve their lives. So the teachers had not only external but also internal motivation to seek effective forms and methods of training students. Therefore, it seems interesting to study the experience of their work, as the positive achievements of the past years will contribute to the effective organization of educational process in modern higher school, help to prevent errors in teaching students to identify and eliminate the causes of difficulties arising in the educational process of higher school.

The place of our scientific research we have chosen the city of Kharkiv (Ukraine). Our choice is due, on the one hand, the fact that Kharkiv was the third city in the Soviet Union (and the first in Ukraine) the number of higher education institutions (there were 23 HEIs) after Moscow and St. Petersburg (former Leningrad). On the other hand, the experience of Kharkiv University and institutes are less studied, some archival materials have been studied for the first time.

## **2. The literary review**

Studying the scientific literature on the investigated problem indicates that the intensification of cognitive activity began to be studied actively in 80-ies of the last century. But at that time scientists such as G. Shchukina [2] examined cognitive activity of primary and secondary school pupils. Recently, researchers have paid considerable attention to this problem in higher school. Among them there are works of A. Kirgizbayeva [3] which are dedicated to finding the effective new types of students' cognitive activity, O. Aghyppo [4], who focuses on the innovative approaches in the organization of training, promoting intensification of pedagogical universities students' cognitive activity, G. Dudchakh [5] is also engaged in intensification of educational-cognitive activity of the future teachers. There are also researches of experience of higher school teachers. However, mostly they relate to experience of teachers of pedagogical universities: V. Viktorov [6], O. Orlova [7], A. Naumets [8]. But nevertheless there is no complete research of experience of intensification of students' cognitive activity in the postwar period, when there was the formation of the Soviet system of higher education, which had a number of advantages. That is why lacking study of the mentioned problem, the existence of the interesting and effective experience caused the conducting of this study.

## **3. The main text**

### **3.1. The Tasks that Higher Schools Had to Solve**

As it has been noted earlier, government policies had a decisive influence on the work of universities and higher institutes of the country. Within the studied period the Council of Ministers of the USSR and the Central Committee put forward the higher education institutions following tasks: to improve the quality of training of specialists with higher education; to enhance communication of HEIs with manufacturing; to eliminate deficiencies of planning of research, training of specialists and their distribution; to establish implementation of inventions developed by scientific and university teaching staff in production; to attract students to scientific research and implementation of inventions; to improve the composition of HEIs teaching staff; to methodize organization of work of higher educational institutions teaching staff; to develop HEIs teaching staff initiative; to strengthen the material and technical base of higher educational institutions; to expand and encourage independent work of students in the learning process.

To solve the tasks which were put forward HEIs leading educators of the studied period paid much attention to the search of forms and methods that would enhance the efficiency of the learning process of students and intensified their cognitive activity.

### **3.2. The methods of intensification of students' cognitive activity**

In the period in higher educational institutions of Kharkiv the priority forms of classes were lectures, workshops, seminars, consultations, laboratory workshops. The teachers mostly tried to intensify the cognitive activity of students at lectures, seminars and workshops. To do this, they used a variety of teaching methods: search, problem, research, etc.

*At lectures.* As the most common form of training were lectures (which accounted for at least 50% of study time [9, 10, 11]), the teachers paid much attention to enhance students' cognitive activity at lectures first of all.

For this purpose, the teachers used primarily problematic lectures, i. e. those that presented material as a problem, a palette of various views on an issue, forced the audience to think. By the nature of coherent activity of a teacher and students method of problematic presentation of knowledge was directly related to problematic lecture. Considering the characteristics of problematic thinking and activation of cognitive activity of students using heuristic methods provided a problematic approach to the presentation of lectures.

A positive example of creating problematic situations at lectures in mathematics at Kharkiv O.M. Gorky State University was presented by Professor D. Gordevskiy. He used elements of a short dialogue with the audience to enhance cognitive activity of students. During his lectures the professor set several problems and solved them together with students. He also allowed the students formulating some conclusions and determination, demanded independent actions. During lectures he created no more than 10-12 mini problems which were solved by students. Each of those mini problems took the audience 1-2 minutes, and in general - to 20 minutes of active, creative, mental activity of students. After that the information submitted by the teacher was perceived as essentially required [11].

Analysis of complex situations also served promoting cognitive activity of students. Students did it together with their lecturer. He was gradually bringing them up to the topic of the lecture and then he formulated the problem which had to be solved. Creation of cognitive situation at the beginning of the lecture aroused interest in the material that was studied, intensified educational and cognitive activity of students promoted the formation of intellectual autonomy of the individual.

Questions of lecturers also enhanced cognitive activity of students. Lecturers used them occasionally to stimulate attention and mental activity of students. If they listened to the lecturer attentively and understood the material, they answered correctly. So, questions not only attracted attention of the audience, intensified thinking of students, but also accustomed to critically evaluate, independently analyze, and compare the facts to make logical conclusions [12].

Effective techniques to enhance cognitive activity of students were presentation of material in the form of questions and answers, proving and resolving cognitive tasks. They demonstrated the ways of science and logical thinking. This approach allowed also setting feedback and focusing on key themes [8].

The study has found also such reception to increase cognitive activity, as a preliminary acquaintance with new material in the textbook on the eve of lecture. That helped not only to enhance cognitive activity of students at lectures, but also developed their logical thinking and mental independence. During the classes students were not passive listeners; instead they were interested partners in the process: put the question, discussed, and expressed their position.

Among other teaching methods that were used in the classroom of Kharkiv University and institutes to enhance the cognitive activity of students, to strengthen their mental activity were: engaging students in the preparation and staging of experiments, at the lecture demonstrations, in withdrawal formulas etc. [11].

Government regulations also served finding new ways to stimulate cognitive activity of students at lectures. For example, the Ministry of Higher Education of the Ukrainian SSR issued the regulation on exchange of experience to give lectures for students by researchers [12] to highlight the latest advances in science and technology, to spread good practices of higher educational institutions and to organize mutual assistance between individual universities, faculties and departments. As part of such exchange best professors and lecturers of Kharkiv HEIs were giving lectures, using everyday examples and photos from the practice of companies and factories. They also paid considerable attention to connection of theory and practice. Therefore, the results of the indicated exchange of scientists and qualified lecturers, experience in giving lectures were not only achieving the goal, but the intensification of students' cognitive activity, improvement of students' knowledge and skills of lecturers [13].

Another government step that served to enhance the cognitive activity of students became the demand of creative development and implementation of new curricula, which were to strengthen the theoretical training and the close combination of education with industrial and social practice. According to these curricula and programs the amount of hours for independent work of students was increased [12]. Thus, the lecturers have to create situations that would have caused interest of students to the material, choose such structure of lectures, which objectively provided cognitive activity and mental independence of students that stimulated them to their next self-study.

So, lecturer of Kharkiv O.M. Gorky State University A. Petrov used this method of lecture. Students previously acquainted with the plan of the lecture. On their own they chose a particular issues and were working on them (they alone adopted literature, prepared the report for 9-10 minutes). A. Petrov held consultations with students who were preparing for a performance, giving them advice. He was starting the lecture himself, and then gradually was coming to issues that were prepared by students. Then there was a joint discussion of the students' reports, the lecturer was bringing listeners up to the conclusion that they did themselves [7].

Organization of lectures presented by the above method was to support creativity, to develop independent thinking skills of analysis and synthesis of factual material that was already available, contributed to the formation of skills establishing causation and selection information. In addition, students under the guidance of their lecturer gained experience of work with scientific literature, developed skills of generalization of scientific data.

*At the workshops.* While many teachers used traditional forms and methods within reproductive education, progressive educational specialists of Kharkiv HEIs were trying to intensify teaching and learning activities of students. They used their various classes unconventional for the time methods and techniques of teaching.

Thus, during the practical lessons in pedagogy at the Kharkiv Pedagogical Institute teachers used following methods: detailed conversation based on material of lectures, on independently researched least literature; thematic report, written on the basis of observations of the educational process in schools of Kharkiv; discussions; problematic tasks [6]. That organization of training was very effective, because really raised the level of teaching and learning activity of students, including cognitive activity.

In geographical faculty of the Kharkiv O.M. Gorky State University practical lessons in pedagogy and pedagogical skills in order to enhance mental independence and cognitive activity of students the educators used situations-exercises. For example, the teacher suggested the students to consider and offer solutions to such situation: ten newcomers came to the 9th grade. They immediately began behaving improperly: were late for classes, missed lessons, behaved impolite. Class teacher tried to approach each individual, and to talk face to face. The refusal was categorical: "Your requirements are too harsh. You don't allow looking around, swiveling from side to side." The more - the worse behaved pupils. [14]. In addition to cognitive activity such exercises produced and consolidated pedagogical skills, methods of teaching influence on pupils, the future teachers were taught to interact with them.

Group practices also helped to intensify cognitive activity of students. For example, the teacher shared academic group into 2-3 subgroups. They were headed by the best students (captains of the groups). Each subgroup received individual task for 1-2 weeks. The teacher consulted only the students who led the groups. The latter, in turn, consulted other members of their own subgroup. Then the captain of a subgroup collected papers with performed tasks, tested them, and only then passed the teacher. The results were announced and discussed in the presence of all the audience. During the discussion, students of any subgroup could ask questions to each other; for each question and answer the teacher and the jury, composed of captains of subgroups exhibited appropriate marks. At the end of the work each student received his mark separately and each subgroup as a whole also received their mark [15].

Method of examining each other also promoted students' cognitive activity. First of all each student had to prepare well in advance to ask a specific question his group mate. Under certain circumstances he had to be ready to answer the question himself or to add necessary information.

We know that cognitive activity of students depends also on positive emotional atmosphere. Teachers of Kharkiv HEIs of the last century were well aware of it. So they tried to induce pleasure, joy, and optimism in the audience. The main methods of forming positive emotions at workshops were: providing creative situations, approval of actions of students, using facial expressions and gestures, dialog items and others. For example, Professor of Kharkiv Art and Industry Institute A. Kuzmenko remarked that “those are methods of communication of a teacher and a student, that influence the future of the student: he may become an artist or craftsman-creator” [16].

*At the seminars*, aimed at developing the mental independence and cognitive activity of students, advanced teachers of Kharkiv Pedagogical Institute used such techniques as role playing. At first the teacher gave students a description of a situation, connected with process of teaching at school. Then he shared roles among students. Future teachers alone pondered all the details of their role and began to play [6]. During the modeling of such situations future teachers experienced emotions and feelings that were analogous to those in real school, fixed in practice the knowledge and skills, increased level of cognitive activity and independence as one of the major professional qualities of future specialists.

### **3.3. The Difficulties in Activity of Children’s Game Libraries**

At the same time, despite the application of different methods of intensification of students’ cognitive and mental activity, one of the pressing problems of the time (especially 1945–1950) was a low success rate of I – II year students [9, 10, 15].

To combat poor performance of students Ministry of Education has introduced new requirements for HEIs, new plans and curricula, which increased the number of hours for independent work and strengthened links with practice.

HEIs Guide used specific measures to overcome the problem. Among them were simplification of lectures, their approach to school lesson, introducing mandatory consultation, implementation credits on specific topics and more.

Some teachers noticed that the low success rate of students was caused by their incontinence, connected with a certain fear to express their views and present technical projects. Then the teachers invented the following methods of overcoming the situation: during practical lessons, seminars, in laboratory conditions the teachers offered to such students “to criticize ideas, not the identity of the student”, increased marks when students presented various options (even wrong) of performance and implementation of technical projects [15].

## **4. Conclusions**

Thus, in the postwar period there were a lot of achievements in development of higher education: the work of higher education institutions was renewed; by the mid-60-ies there was the formation of the system of higher education; higher school solved the problem of training for all sectors of the economy, the intellectual development of individuality, helped to raise the level of education of population. The development of higher education boosted the number of students in higher educational institutions, improved the quality of education and training specialists, and required certification training of the HEIs teaching staff.

The need to continually improve the quality of HEIs graduates meant that leading teachers were looking for new ways to enhance cognitive activity of students. Some of the teaching methods which were used by teachers of Kharkiv University and numerous institutes were innovative for the time. Archival materials [9-11, 13, 15, 16] have shown that the described methods really worked and increased cognitive activity of students. Kharkiv teachers approached creatively to solve difficulties that arose during the teaching and learning process. Their creativity inspired the students to cognitive activity. So, indeed, Kharkiv began to be considered a city of students and science.

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