

“Forms and methods of training system for electrical engineers in national higher technical education institutions”

Problem setting. *The defining features of formation of higher electrotechnical education in Ukraine in the twentieth century are considered. The structural changes in training of electrician's specialists in leading higher technical educational institutions of Ukraine, including Kharkiv, Kyiv, Lviv and Odessa Polytechnic Institute are investigated. In attracting normative legal documents the stages of formation of technical education are shown and the positive and negative characteristics of each stage are emphasized. The peculiarities of the educational process, training practices, scientific research works, and the establishment of new specialties, departments, faculties and branches are highlighted. The analysis of methods of electrical engineer training for different specialties is conducted.*

Recent research and publications analysis. *The issue of improving the functioning and development of training and certification of scientific has found its development in the works of V.P. Yelyutin, S.V. Bondarenko, K.O. Vaschenko, O. E. Tveritnikova and many other researchers.*

Paper main body. *It was established that during 1950-1960 the training system for electrical engineers was significantly expanded. The number of specialists was increased by implementing of accelerated form of education and increasing population of evening, full-time and part-time forms. The peculiarity of this form was that the graduates of secondary specialized educational institutions, especially colleges could continue their education. This input significantly influenced on the increase of the number of graduate specialists that were required for industry. This gave an opportunity to continue education for college graduates. During the first phase of the development the list of electrotechnical specializations was expanded. The main task of this period was aimed at restoring the network of universities and increasing the number of specialists to recover the ruined industrial complex, increasing the quantitative part of training engineering staff was resolved. Among the negative features of scientific and educational process the imperfect material and technical base and the lack of qualified teaching staff should be noted.*

The characteristic features of the second phase of 1961-1975 became a strengthening of the quality of training and the deepening of productive system component of technical education. The transformation of the education system and its approaching to industrial needs were conducted, it contributed to the creation of new disciplines and faculties. Scientific and technical schools that received further development and new scientific directions were developed. The creating of fundamental research laboratories, the intensification of scientific research influenced the restoration of educational and laboratory base that reinforced the quality of training and the organization of student research works. Students were actively involved in research subjects that were held by the departments. Scientific and student studios were created. At the beginning of 1960 it was decided to remove the accelerated training of students. In order to improve the educational process the forms and dates of training practices were changed. The model of combining study with work on the production impacted on the quality of training. The load on production and training during the afternoon negatively influenced on general performance. In addition, practical training at the beginning of education had no expected results. The creation of special conditions for students who had a two-year production experience led to a lower level of general training contingent. That is why in the middle of 1960 the form of training "on the job" was canceled. Meanwhile the cooperation of higher education institutions and enterprises had a significant impact on the qualitative changes in training system of electrical engineers.

The spread of electrotechnical education contributed to creation of leading network branching in higher technical educational institutions. In 1960 Vinnytsya branch in KPI

(Vinnitsa Polytechnic Institute), General Technical Faculty in LPI (Ternopil National Technical University named after Ivan Puliuya) and LPI branch in Ivano-Frankivsk were created. Also in the same year in OPI Sevastopol branch “electrotechnics”, radio engineering, automatics and telemechanics departments were created.

Conclusions of the research. *During 1976-1991 it was noticeable that the work held in previous years, on the preparation of scientific and pedagogical staff gained positive results. The proportion of doctors and candidates of sciences working in educational process significantly increased. Different forms of scientific research work with students were supported. But during this period it was more formal. In 1988 there was a meeting of the Union, where the main statements of reforming the educational system were formed. During this period, some problems in electrical system of education were defined that were associated with general characters of crisis of higher technical education, including reducing funding for research activities of educational institutions, overdraft of specialists with engineering and technical education, outdated material and technical base. The last directly impacted on the further development of electrotechnical direction. The backlog in some areas of electrotechnics, in particular electronic computer facilities, and computer technologies retarded the modernization of training system.*

In the next period, attempts to modernize the educational system, the transition to a continual training system were made. But the process of modernization, main objective of which was the education system transition to new forms of educational methods was remained unfinished at that time.