

## **The Human Resource Capacity Development Program in the Context of a Multilevel Educational Complex with a Technical Profile**

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**Abstract:** The study proposes a solution to the problem of the human resource capacity development in the context of a multilevel educational complex with a technical profile. The way to solve the problem is presented in the program “The development of the professional competence of academic staff of a technical university as a multilevel educational complex”. The program is created by the authors on the basis of the ideas of corporate education and network approach. This program is a methodological document. It serves as a means of academic staff development and contributes to the development of their professional competence.

**Key words:** Human resource capacity, academic staff development, corporate education, network approach, a multilevel educational complex, a technical university, a program

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### **INTRODUCTION**

The professional competence of academic staff of modern educational institutions of secondary vocational education and higher vocational education determines the quality of training of future specialists and depends on the existing system of academic staff development.

This problem is of particular importance to a technical university as a multilevel educational complex. The complex includes both secondary vocational education and higher vocational education levels. Firstly, this is due to the specificity of the educational organization with a technical profile; secondly, the multilevel training; and thirdly, the extent of academic staff coverage.

The specific work of academic staff of a technical university as a multilevel educational complex largely determines the direction of their training and retraining in the academic staff development system taking into account the level of the educational organization. Both new entrants to the teaching profession and experienced academics are in need of improving their professional competence in the context of increasing requirements applicable to academics.

**Human resource capacity development program:** The program “The development of the professional competence of academic staff of a technical university as a multilevel educational complex” has been developed in order to increase the potential of academic staff of Penza

State Technological University (PenzSTU). It is a methodological document that determines staffing of the educational process in a technical university as a multilevel educational complex and one of the mechanisms for the implementation of “The concept of continuous education development in a technical university as a multilevel educational complex”. The concept has been developed in PenzSTU (Sergeeva and Voskrekasenko, 2014).

This program provides training and retraining of academic staff taking into account the level of an educational institution (secondary vocational education or higher vocational education), their pedagogical and scientific experience as well as the status of the post. Regardless of this differentiation, the main areas of academic staff training and retraining in the staff development system of a university as a multilevel educational complex are as follows: the discipline, psychology and pedagogy, information technology.

The main purpose of the program implementation is to develop the potential of academic staff of a university as a multilevel educational complex; to create conditions for their professional self-improvement. In order to achieve the objective, it is necessary to solve the following problems:

- Monitoring of effectiveness of academic staff activities. The development and implementation of the system of measures at the university that aim at enhancing the professional competence of academics.

- Pedagogical support of graduate associates' adaptation to professional and pedagogical activities of a university as a multilevel educational complex.
- Updating the competence of the organization and the implementation of experienced academics' professional and pedagogical activity in accordance with the requirements of the employer and modern legal documents
- The creation of the system of "vertical development" for every member of academic staff of a university as a multilevel educational complex (in the context of their professional and career development)
- The creation of methodological support of the academic staff development process

**Corporate education and network approach:** The methodological basis of the program is the ideas of corporate education and network approach.

Corporate education is aimed at improving the professional skills of academic staff of the university as well as creating the incentive system for the implementation of practical activities in the interest of problems that are solved by the pedagogical community of the educational organization. Using the ideas of corporate education in the practice of staff development provides: rapid solutions to the problems of the development and implementation of programs and projects that are relevant to the improvement of academics' professional skills; managing the process taking into account academics' length of service and work experience; the possibility of creating and implementing of an author's ideas, projects, programs, etc. with the support of the administration and the scientific pedagogical community of a university as a multilevel educational complex (Sergeeva and Voskresensko, 2013).

Using the network approach ideas to staff development provides. The effective interaction of various departments of the educational institution. The interaction of different structures of the educational organization with the structures of other institutions, business, industrial enterprises that are interested in training of qualified engineering personnel; equal opportunities of the educational institution and its external partners to develop joint projects, programs and courses aimed at academic staff development. The rapid spread of innovations between structural subdivisions of the educational organization (departments, laboratories, centers, units, etc.) and its partners (representatives of business and industry).

The interaction of academic staff and representatives of science, industry, business for the practical realization of their ideas in accordance with social demands. The

ability to improve the programs and courses of academic staff development due to the exchange of valuable experiences between the departments of educational institutions at various levels. The possibility of participation of employees of educational institutions structural subdivisions, representatives of business and industry in the process of staff development programs creation and implementation (Kozlova, 2013; Nicholls, 2001; Andersson, 1998).

The ideas of corporate education and network approach are presented in the program "The development of the professional competence of academic staff of a technical university as a multilevel educational complex" and are realized through the combination of the following principles (Sergeeva *et al.*, 2014).

The dependence of the organization and content of academic staff development on the objectives and the educational policy of a university (it provides the establishment of the order of learning, the formation of study groups, the creation of academic staff development courses, the selection of appropriate forms, methods and means for the development of necessary knowledge and skills to solve strategic problems that a university face):

- The permanent character of education (it helps to prevent the decline of the quality and efficient professional activity of academic staff by providing them with current knowledge)
- The mobility of training courses content (it provides the ability to quickly respond to changes in the professional work of academics in relation to the constant increasing requirements for their professional competence)
- The movement (it helps academics (in accordance with their posts and academic degrees) choose different "vectors" of personal and professional development by means of a continuous process of updating their knowledge and skills)
- The focus on the result (it provides the increasing competitiveness of a university at the market of higher education services as one of the main objectives of its work)
- The progressive and innovative development (it involves the gradual academic staff development at different levels, in different structural units in accordance with their status)
- Partnership (it provides networking of structural subdivisions of educational organizations, representatives of business and industry to achieve the objectives)
- Multilevel interaction (it implies the possibility of direct interaction between workers belonging to the network of structural subdivisions of educational and industrial organizations of different levels when required and as often as required)

**Program implementation phases:** The given program provides for the following stages in the course of its implementation: diagnostic, creative and transforming and assessment. The first (diagnostic) stage is a monitoring of an academic's professional competence:

- The determination of the level of an academic's professional competence in accordance with his/her professional pedagogical activity
- The identification of the actual needs of academics for staff development for their professional pedagogical activity
- The second (creative and transforming) stage provides the implementation of a set of measures aimed at the creation of individual trajectories of academic staff development taking into account the level of the educational organization, academics' research and professional activities as well as their status and post
- Pedagogical support of graduate associates' adaptation to professional pedagogical activity. They must have from one to three years of work experience in an educational organization (Sergeeva and Voskresenko, 2013)
- In the direction of subject-oriented training (enhancing the system of knowledge within the discipline through inclusion of R and D, through the study and analysis of academics' work experience, as well as through participation in seminars, master classes, internships, academic communities, assessment groups, etc.)
- In the direction of psychological and pedagogical training (mastering the basics of pedagogical skills, enhancing the system of psychological and pedagogical knowledge of the organization and implementation of professional pedagogical activity as well as the skills of application of training and education technologies in the context of professional education through training seminars, group and individual counseling, training workshops; the provision of targeted assistance in the organization of pedagogical support and implementation of pedagogical interaction with students through individual consultations with experts with psychological and pedagogical profiles; the system of mentoring as well as communication skills training)
- In the direction of information technology training (enhancing the system of knowledge and skills relating to the use of modern information technologies in professional pedagogical activities through training courses and individual consultations)
- Updating the organization competences and the quality of experienced academics' professional pedagogical activity in accordance with the requirements of the employer and modern legal documents
- In the direction of subject-oriented training (updating the knowledge system of the discipline in accordance with modern requirements; active involvement in research work in the direction of the subject-oriented training on the basis of the network principles through internships, seminars, supervision, master classes, sabbaticals; mastering the technology of teaching in a foreign language through self-education as well as participation in international projects and educational programs, etc.)
- In the direction of psychological and pedagogical training (updating the system of psychological and pedagogical knowledge and improving skills to use the latest educational technologies taking into account the characteristic features of modern students and the conditions for their professional training through short-term courses and seminars, workshops and internships, training sessions, etc) (Morozova, 2011; Nicholls, 2001; Zuber-Skerritt, 1994)
- In the direction of information technology training (the organization of individual work through consultations with experts to help academics master modern information technologies to carry out their R&D, professional and pedagogical activities)
- The main forms of academic staff development (within the current package of measures) on the second (creative and transforming) stage are as follows:
  - Postgraduate studies (the main form of academic staff training in higher education institutions)
  - Courses (they are conducted in order to learn new knowledge and skills that are necessary to perform high quality professional pedagogical activities when the requirements are changed)
  - Work placement (it is organized in enterprises that are partners of the university as well as in research organizations, in leading universities of the country and foreign universities)
  - Seminar-conference (it is held for the coordination of issues related to the current problems of the organization and R and D performance in accordance with the need to promptly solve strategic problems that the organization face)
  - Individual counseling (it is organized to discuss issues on the implementation of the education process, it can take place both under the supervision of an expert or without it)

- Supervision (the so-called cooperation between two professionals (one of them is more experienced, the other one is less experienced; they both can be equally experienced). It helps academics describe and analyze their work under conditions of confidentiality)
- Colloquium (it is a form of mutual consultation and sharing experiences between academics, the assistance of experts is also possible)
- Reciprocal visiting of classes (the analysis of academics' experience with the participation of experts);
- Seminars (it is a training session for the organization and implementation of professional pedagogical activity)
- A master class (it is a type of training session which turns theory into practice and involves case studies and exercises to reach concrete results);
- Assessment groups (a group of experts systematically analyze and assess academic and extra-curricular activities, curricular and educational programs)
- Internships (sharing experiences between academics in order to promote and stimulate innovation activities, academic staff development through the creation and improvement of professional competencies)
- Sabbaticals (an additional form of academic staff development for the completion of the research work)

An important condition for the effective use of these forms of academic staff development (in the framework of the given package of measures) is the implementation of the ideas of corporate education and network approach.

The third (assessment) stage is a generalization, systematization, data processing and the creation of educational learning materials for the work with academics. The content of the activities at this stage involves several steps:

**Step 1:** The implementation of the reanalysis of the level of an academic's professional competence in accordance with the results of his/her professional pedagogical activity.

**Step 2:** The comparative analysis of the data and, according to the data, the correction of the program to improve the professional competence of academics of a technical university as a multilevel educational complex taking into account: the level of the educational organization (secondary vocational education and higher professional education) where an academic's professional

pedagogical activity takes place; changing requirements for the training of future engineers on the part of society and employers as well as in connection with the actual needs of the individual himself.

**Step 3:** The creation of educational learning materials on the organization and implementation of staff development for: academic staff (for graduate associates and academics who have considerable experience in professional pedagogical activity in vocational training organizations); tutors and masters of vocational training (for beginners and for those who have considerable experience in professional pedagogical activity in vocational training organizations).

The expected result of the program "The development of the professional competence of academic staff of a technical university as a multilevel educational complex" is the development of the academic staff potential in the context of a technical university as a multilevel educational complex.

## CONCLUSION

The program presented in the article is developed taking into account the specifics of a technical university, its multi-level nature of future professionals' training. It certainly influences academics' professional pedagogical activity. At the same time, the program can be adapted for the training and retraining of academic staff of vocational education institutions with another profile.

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