

Improvement of the Quality of Higher Polytechnic Education on the Basis of a Customer-Oriented Approach

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Abstract— the object of the article is higher polytechnic education; the subject of the article is the improvement of higher polytechnic education quality based on a customer-oriented approach. The relevance of the article driven by the need to improve the quality of higher polytechnic education being one of the key factors of competitiveness and sustainable development of national economy's high-tech sector. The goal of the article is to improve polytechnic education quality based on the customer-oriented approach. In order to achieve this goal methodical provisions of the customer-oriented approach in polytechnic education are formulated; influence of client orientation on criteria of higher polytechnic education quality is investigated; stages and tools of realization of customer-oriented approach in higher polytechnic education are described, algorithm of implementation of customer-oriented approach in the higher polytechnic education is presented, practical importance of the application of this approach is substantiated.

Keywords— *polytechnic education, customer-oriented approach, quality, philosophy, staff, academic staff, motivation.*

1. INTRODUCTION

The relevance of the article is determined by the need to improve the quality of higher polytechnic education as one of the decisive factors for ensuring competitiveness and sustainable development of the high-tech sector of the national economy.

Relevance of the article is driven by the need to improve higher polytechnic education quality as one of the decisive factors for ensuring competitiveness and sustainable development of national economy's high-tech sector.

The purpose of this article is to improve polytechnic education quality through implementation of provisions and application of customer-oriented approach tools.

In order to achieve this goal, it is necessary to do next steps:

- methodical provisions of the customer-oriented approach in the polytechnic education are formulated;
- influence of client orientation on the criteria of higher polytechnic education quality is investigated;
- instruments of realization of the customer-oriented approach in higher polytechnic education are formed.

The object of the article is higher polytechnic education.

The subject of the article is methods and tools of the quality improvement of higher polytechnic education within the customer-oriented approach.

2. SCIENTIFIC SIGNIFICANCE OF THE ARTICLE

Driven by globalization in society, science and education being a characteristic feature of the modern stage of higher polytechnic education development [1, p. 30]. The globalization of education generates differentiation of the modern education nomenclature [2, pp. 46-51], which can be considered evidence of profound changes in education. In these conditions, the relevance of global education general trends study has increased [3, pp. 77-80].

The impact of globalization of education is so great significant that it allows talking about changes in philosophy of education [4, pp. 192-200]. Globalization leads to the necessity of changes in the system of higher professional education management [5; 6, pp. 22-24].

Additional important external factor is progress of informational technologies in higher education. That trend leads to the emergence of a new phenomenon known as "smart education". Experts believe that this type of education threatens the existence of traditional universities [7, p. 40; 8, p. 4].

Against this backdrop, the problem of education quality improvement remains relevant [9, p. 151]. This makes it possible to conclude that there are two main problems facing modern polytechnic education: adaptation to changes of external conditions and improvement of the quality of education. These two problems can be solved simultaneously by changing philosophy and culture of the universities [10, pp. 3-10; 11, p. 30].

Resources aimed at improving higher education quality are limited. Therefore, it is logical to refer to the philosophical concept of lean production and education [12, pp. 5-120; 13, pp. 240 – 256].

One of the directions of lean education can be targeted training of higher educational institutions students [14, pp. 116-130]. Targeted training decreases the percentage of graduates who do not work in their specialty. Therefore, such

preparation allows more efficient utilization of budgetary funds.

However, targeted training does not mean the university is customer-oriented. Therefore, the question of necessity of customer-oriented approach implementation at the university is expected to arise [15, p. 16; 16, pp. 259-260]. At the same time, specialists draw their attention to the importance of preliminary preparation for the application of the customer-oriented approach at the university and/or the organization of additional professional education [17, pp. 31-40].

Such preparation at the university should be systemic. It should include a number of aspects: changes in the philosophy and culture of the university; preparation of educational programs; adaptation of teaching methods; formation of the criteria for assessing the quality of education, etc. It is noted that organizational culture can be considered as a customer-oriented technology aimed to increase competitiveness of the university [18, p. 147-159]. A special methodology for developing curricula for additional vocational education in the customer-oriented approach has been described in paper [19, pp. 56-60].

Systems and procedures for assessing the level of education should also reflect the customer-oriented approach [20, p. 25-30]. Positive impact on image of the university created by the customer-oriented approach [21, pp. 85-88] is an additional factor of education quality of improvement.

Using the customer-oriented approach the university should also take into account the impact of globalization of the economy on corporate entities' development cycles [22, pp. 2126-2130].

Application of customer-oriented higher polytechnic education can provide participating organizations (enterprises) with increasing efficiency of diverse workforce management [23, p. 453].

The increase in staff management efficiency can be facilitated by vocational guidance management at the university in the framework of the customer-oriented approach [24, pp. 87-90].

It is proposed that the formation of efficiency assessment criteria for the quality of higher polytechnic education should be carried out based on the efficiency approach [25, pp. 7-16].

The research objective of this article is determined by the need to develop methodological provisions and an algorithm for customer-oriented approach implementation in a polytechnic university.

The hypothesis of the article is the assumption that the customer-oriented approach used in higher polytechnic education could improve quality of such education.

Based on analysis of literature, an implementation algorithm and methodological provisions of the customer-oriented approach in a polytechnic institution can be formulated.

The theoretical part of the article covers development and refinement of conceptual apparatus and methodical provisions of the customer-oriented approach in higher polytechnic education.

It is proposed that the customer-oriented higher polytechnic education is a systematic incorporation of philosophy, culture, and educational technologies, built on the basis of study (and prediction) of areas, technologies of work principles, and key values of the university's basic organizations' (enterprises') personnel.

It is proposed that the basic enterprises of the university are the organizations that prove to be the most large-scale, typical employers for the graduates of polytechnic universities.

To ensure the client orientation of higher technical education, the university should establish strategic partnership relations with the basic organizations. Such relations may be established both formally, with the conclusion of the relevant agreements between the organizations and the university, and informally.

Analysis of areas, technologies of work principles, key values of the university's basic organizations' (enterprises') personnel of should be predicative. This means that not only the current state, markets, technologies of the organization are analyzed, but also their change in the future. The analysis of the areas of activity means not only establishment of the sectoral specifics of the organization, but also place of the organization in reproduction process (scientific research, design, operation, service, consumption, utilization).

Algorithm of the customer-oriented higher polytechnic education implementation can be divided into next stages:

1. Stage of preliminary research on which the directions, technologies of activity, principles of philosophy and organizational culture of the basic organization activity are clarified.

2. The preparatory stage on which educational programs and methods of teaching are developed, criteria of education quality assessment are formed, scientists and educators with the system of values close to that of the basic organization are selected.

3. The stage of educating and mentoring of university students during implementation of the customer-oriented approach educational programs.

4. The stage of quality control of higher customer-oriented education.

When creating such a system of quality assessment criteria for higher customer-oriented education, it should be considered that in the modern world corporations form a technological pyramid.

The highest level of this pyramid is occupied by corporations that synthesize new technological principles. The criterion for quality assessment shall be number of proposed new technological solutions per one university graduate during the first 5 years after graduation.

The second level of the technological pyramid is occupied by organizations, which design new means of production based on these principles. The criterion for education quality assessment shall be competitiveness of these means of production.

The third level of the technological pyramid is occupied by organizations, which produce goods using the above-

mentioned means of production. The evaluation criterion for such education shall be competitiveness of such goods developed by the graduates of the university.

The fourth level is occupied by organizations that use the above-mentioned products as a part of their activities to perform work and provide services. The criterion for education quality assessment shall be quality of rendered services.

The fifth level is occupied by organizations that extract raw materials. Education quality criteria: production volume, share of extracted raw materials, etc.

The focus of the customer-oriented educational process on problems and specifics of the basic organizations will increase level of satisfaction with the quality of such education.

The following can be considered as tools (factors) for quality improvement of higher customer-oriented education:

more precise definition of the graduate's skill set based on analysis of the basic organizations' operations;

orientation of educational process on knowledge and technologies of the basic organizations' operations that will allow optimization of the graduate's competence improvement at a workplace;

orientation of the educational process on more comprehensive assimilation of behavioral principles and values of organizational culture inherent in the basic organization, etc.

The practical importance of the article is connected with the possibility to develop and implement a systematic approach in staff management enabled by customer-oriented higher education.

The customer-oriented approach in education influences the methods of economic entities' staffing. Cooperation with a customer-oriented university brings the basic organization and additional opportunities of successful labor optimization.

According to R. Daft, the optimization of the workforce resides in assigning the right person to a position suitable for him or her at the right time [23, p. 441]. Knowledge of the organization's development cycle allows defining this "essential moment" for labor optimization. The methodology of the customer-oriented education allows more accurate determination of this "right person's" competencies interrelationship and content of activities on this "suitable position" in the process of labor optimization. At the same time knowledge of the corporate education developmental cycle allows defining "the essential moment of time" to appoint the person on the considered position.

In addition, participation in the customer-oriented education will enable organizations of the real economy to form more successful innovation teams and business teams. The definition of a "team" is given by Richard Daft: a team is a group of people who coordinate their actions and labor efforts to achieve a specific goal. However, this definition might be viewed as incomplete. For a team to work successfully, a group of employees must:

have a common purpose;
be formed on the basis of specialization and division of labor;

possess a full set of the competencies to achieve the goal;
have a general idea of how to achieve the goal;
avoid conflicts during a joint project (conflict of goals, cognition, emotions, the conflict of intellect, the conflict of significance, and a workload conflict).

Preliminary selection of team members from graduates of a customer-oriented university can increase the likelihood of harmonious team formation, and reduce the risk of conflict in the team.

Knowledge of the organization's values and developmental cycle can enable the organization to overcome the crisis. For this, it is possible to carry out a restructuring of activities using a reception, which could be called a "recruitment experiment." This technique may include purposeful and conscious hiring of a notorious "rebel". Such employees do not accept organizational culture of the basic organization and create conflicts. However, analysis of these conflicts can allow the basic organization in crisis to find the correct strategy and tactics of crisis management. Because of the use of this technique, it is possible to increase competitiveness of the basic organization of the customer-oriented university.

CONCLUSION

The article proposes an algorithm of implementation and development of the customer-oriented approach methodology in higher polytechnic education; describes the stages of this educational concept implementation; explores the approach to the formation of the criterion basis of the customer-oriented education and describes the factors of the customer-oriented higher education quality improvement.

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