

Accountant Modeling Technology and Statistics in the Context of the New Educational Concept



A.M. Petrov, Y.E. Putihin, M.V. Poluleh, I.O. Yurasova, V.N. Erohina

Abstract: *Clear economic activity management is one of the most essential aspects of any company's stable financial standing under contemporary conditions. Economic activity management at a company is impossible without an in-depth and detailed study of all the processes related to it on the basis of the highly professional activity of accountants. This article addresses the issues of the new educational concept.*

Index Terms: *accounting, reporting, economic analysis, procedure, methods, techniques, new educational concept*

I. INTRODUCTION

Being a complicated formation with an immense amount of information flows, the educational process imposes special requirements for training of accountants. On the one hand, the necessity of applying information technologies in professional activities of an accountant enhances, on the other hand, the current situation requires accountants to have professional skills.

Development, mastering and distribution of innovations in the field of accounting education form a new contemporary educational system representing a system of open and personalized knowledge, continuous education based on the unity of engineering, pedagogic and organizational innovations [1, 2, 3, 11, 12].

The advantages of applying innovative technologies for teaching and learning activities are multifarious:

Increase of the accounting training quality.

Reallocation of teaching workload from routine to creative activities.

Optimized use of facilities.

Decreased demand for hard-copy study guides.

Possibility for students to self-test gained knowledge and skills.

II. METHODS AND MATERIALS

A. GENERAL DESCRIPTION

Evolution of professional activity models is studied on the basis of the historical approach.

The model of professional training has changed essentially over the last few years. Douglas McGregor substantiated the theory of human motivation in 1960s. Two professional activity models had fundamentally different characteristics.

The model X represented a human (a specialist) as simple performer of a regulated activity. The official powers are assigned strictly. Subordinates are subject to total control. As a rule, employees themselves dodge responsibility and demonstrate no initiative. The only way to spark the employee's interest is income increase.

Many managers followed this theory in 1960s as they held their subordinates in distrust treating them pessimistically.

The model Y differs from the model X fundamentally. It allows for rather ambitious employees, who strive for self-control and autonomy, incur liability and wish exercise their creative skills. The management control level of this model is low. Thus managers tend to be mentors and consultants for their subordinates, so the work management is more flexible. Money is not the governing factor.

Many consider the theory Y as a set of merits inhering in an employee. Though in his work *The Human Side of Enterprise* D. McGregor just wanted to show how open managers should be for a positive mindset and new opportunities.

A new model was substantiated in 1970 by A. Maslow. It is called the model of dynamic expertise. It is based sense-making assumptions that employees strive for self-actualization and maximum liability, which, in its turn, is an incentive to advancement of innovative proposals. Work management commonly relies on corporate culture, collaboration, a combination of team work and individual activity. Management and employees are ready and strive for various innovations.

B. ALGORITHM

Each of the three theories is represented by a model of professional training described in Table 1.

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Table 1 Professional training model

Adaptive model	Professional development model	Dynamic expertise model
Focused on execution of a particular function by a specialist.	Focused on making his/her own decisions by a specialist, readiness to be responsible for the work performed.	Focused on training a "multi-purpose" specialist able to perform a wide range of tasks.

Each model represented in Table 1 corresponds to a cognition-, activity- and person-oriented educational concept enabling implementation of abilities at a professional school.

Mainstream educational paradigms

Three paradigms of professional training (cognition-, activity- and person-oriented) have become fundamental in theory and practice over the last few years. A paradigm is an aggregate of theoretical and methodological prerequisites, which determine a particular research fulfilled at a certain stage in scientific practice.

The cognitive paradigm contemplates education from the cognitive point of view. Personal training is characterized by development of motivation for cognition and deployment of cognitive abilities. Experience in evaluation of other people’s activity and own experience is gained. The purpose of training is the quality of knowledge, skills and abilities, as well as information support of a person rather than overall personality development.

The activity-oriented paradigm is based on the principle that education is a sociocultural technology of development of knowledge and skills, as well as a method of generalization of mental and practical efforts for a successful labor activity. As a rule, this paradigm is directly applied for internship and studying of particular vocational subjects. The activity-oriented paradigm is mainly used for trainees of elementary vocational education.

The person-oriented paradigm is focused on professional development of the trainee’s personality. Individuality and professional development of a person, his/her expertise and extra-functional qualities are prioritized. Applying the person-oriented paradigm assumes training of specialists using information and production technologies typical for the future profession.

Currently all the three reviewed paradigms are highly demanded by professional schools. The paradigm to be selected depends on the profession or the educational subject content.

III. RESULTS AND DISCUSSION

New educational concept

Accounting is an essential science in the system of business education. If considered from the point of view of the education technology, this discipline is commonly focused on transfer of necessary knowledge and skills, which can be used by students in practice. It is the key factor of mastering a profession. As a rule, obsolete methods are used for practical training at institutions of higher education; in the

aggregate, those methods do not cover every aspect of the accounting and are not focused on the profession’s practical component [4, 7, 8, 13, 17, 20].

The need for solving the existing problems of training is attributable to the fact that the current educational system fails to provide the required practical training for accounting students, because a comprehensive concept and an efficient system of training in the context of the peculiar computer environment are missing [5, 6, 14, 16, 19].

The Decree No. 497 of the Russian Federation Government Concerning the Federal Dedicated Program of Education Development for 2016 — 2020 [15] dated May 23, 2015 emphasized provision of affordable high-quality education, which can meet the requirements of the innovative socially orientated development of Russia. In its turn, this will enable a phased transition to the new level and quality of educated based on information technologies.

The innovations used for training of accounting specialists at the present stage are associated with introduction of new educational technologies into the educational process rather than with changes to the content of education. Such technologies include the following:

- Interactive exercises and practical training.
- Case study.
- Computer-aided laboratory facilities.
- A computer-aided consulting system.
- Virtual computer laboratories.
- Electronic textbooks and guides.

Modeling used as the basis for many learning and training facilities obviously increases the training efficiency.

The main development trends of education in the field of accounting can be categorized by the following level of innovations:

- Innovations associated with structural elements of accounting education: training tasks, methods, techniques, monitoring and evaluation of results.
- Innovations associated with the subjects of education: the domain of development of their knowledge, skills and competencies.
- Innovations based on functional capabilities: innovative conditions enabling update of the educational environment and innovative products representing practical training, projects and technologies.
- Innovations related to the distribution scale.
- Innovations related to significance. Typical for educational institutions of a particular type or at educational institutions of various types [9, 10, 18].

Considering the prerequisites and structure of the education revolution, we can draw certain conclusions.

First, the content of accounting education is being updated at the present stage. Preceding experience and knowledge are being reconsidered from the point of view of the new education paradigm and changed business development conditions.

Second, the mainframe innovation is using the creative approach to accounting education.



The emphasis is put on the ability to adapt to the changing environment and find unconventional solutions to business tasks.

Third, informatization of the education process enables combining the logical and imaginative method of gaining knowledge, which, in its turn, increases the training efficiency immensely.

Fourth, organization of the accounting education system changes. The capabilities of distance learning based on using modern technologies assume ever greater importance.

Innovative technologies are a major asset in development of the key accountant competencies. Since with the help of professional competencies a specialist can reach adaptability to the changing labor-market conditions and fulfill himself or herself in various professional fields. A professional competency is an aggregate of interrelated components — the key, the basic and the special. Each component has its specification. The key competencies assume generality of required knowledge and skills. The basic competencies focus on the specific character of a particular professional activity. The special competencies are characterized by accounting knowledge in a particular field.

The competency-based approach allows for consideration of the education process as gradual complication of the training methods, forms and results at various levels of education. New forms of education must be developed along with innovative technologies.

An innovative technology based on modeling of the accountant's professional activity has been already used as the basis for reforming of the education system. This concept is developed using electronic exercises for learning and practice. The program is aimed at gaining both new knowledge and practical skills. The programs are developed by the Department of Accounting, Analysis and Audit of the Financial University. Interactive learning and training facilities are used successfully for mastering such disciplines as Modern Accounting Concepts and IFRS. The program has a number of unique features:

Setting of real-world problems instead of working on artificial situations and exercises.

The participants learn more from each other rather than from the "teacher".

The participants can start learning from scratch, working on real projects.

The work of the participants is focused on implementation of the obtained results, but not on doing a paper or recommendations.

The innovations developed and used in the program were appreciated both inside the university and at the external market of educational services. This conceptual model can be used for simulations of the professional accountant's activity not only at institutions of higher education, but in the system of advanced training of accountants as well.

IV. CONCLUSION

The model of professional training has changed essentially over the last few years. Though the theories described in the works of D. McGregor and A. Maslow are still relevant.

Innovative technologies are a major asset in development of

the key accountant competencies. The competency-based approach allows for consideration of the education process as gradual complication of the training methods, forms and results at various levels of education. New forms of education must be developed along with innovative technologies.

An innovative technology based on modeling of the accountant's professional activity and named "teaching by doing" has been already used as the basis for reforming of the education system. The concept developed using electronic exercises for learning and practice has been appreciated at the educational market.

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