

Learning Specifics of Corporate Culture Development: A Study of Motor Transport Masters Program Graduates

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Abstract

Within the framework of post-industrial development in the motor industry a new management culture based on corporate values is stimulating change in the system of engineering education. In the evolution of the vehicle servicing businesses, second level higher education graduates, (masters of Engineering) are often employed as line managers. The results of a multi-panel academic study involving stakeholders indicated the need for masters program graduates to be actively engaged in the development of corporate culture and training production staff. This highlighted a new competence for line manager which has previously not given adequate focus – training as a part of operational management activities. This is an innovative feature of the Engineer masters Program training process. This article analyzes the curriculum for teaching corporate culture to production personnel. It also specifies the role of a facilitator to replace an expert teacher and formulates the academic problem of teaching specific didactic tools appropriate for corporate culture development to masters students.

Keywords: educational research, engineering higher education, corporate culture, masters competencies, didactics, production personnel training, educational innovations.

Дидактические особенности формирования корпоративной культуры у выпускников магистратуры автотранспортного профиля

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Аннотация

В рамках постиндустриального развития автотранспортного производства новая управленческая культура, основанная на корпоративных ценностях, стимулирует изменения в системе инженерного образования. В процессе развития автосервисных предприятий выпускники второй ступени высшего образования (магистры инженерии) часто занимают должностные позиции линейных руководителей. Результаты многопанельного академического исследования с участием основных стейкхолдеров показали необходимость активного участия выпускников магистратуры в развитии корпоративной культуры и приобщении к ней производственного персонала. Это выявило новую компетенцию линейного руководителя, которой не уделялось должного внимания прежде, – подготовку к образовательной деятельности как части деятельности по оперативному управлению. Это инновационная особенность процесса подготовки магистров инженерных специальностей. В данной статье анализируется программа обучения производственного персонала корпоративной культуре, уточняется роль фасилитатора, заменяющего преподавателя-эксперта, и формулируется академическая проблема обучения магистрантов конкретным дидактическим средствам, способствующим развитию корпоративной культуры.

Ключевые слова: педагогическое исследование, высшее образование инженерного профиля, корпоративная культура, компетенции магистра, дидактика, обучение производственного персонала, инновации в образовании.

Introduction

Within the framework of post-industrial society, the old-fashioned hard hierarchical management of a technical production enterprise is giving way to a new management culture based on the set of corporate values (Fidelman, Dedikov, Adler, & Yu, 2010). As a set of declared principles, values, and rules, corporate culture serves to stimulate employees' consciousness and guide their conduct in employment (Cardona, Malbašić & Rey, 2018; Hailin, Haimeng & Qiang, 2018). In this regard, significant emphasis is placed on the professional responsibility of service providers (Ehrenhard & Fiorito, 2018; Persikova, 2015).

In this context of the post-industrial production process, centralization gives way to autonomy and the related responsibility (Kosyakov, Svit, Seymur & Bimer, 2014;

Bell, 2004). Individualization is recognized as the major human factor characteristic of the post-industrial development society (Illes & Vogell, 2018; Dempsey, 2015; Russell, Miller & Devis, 2008). Bell (2004), the famous researcher of post-industrial society, forecasts an inevitable shift to the free and responsible actions of individuals. The individualization concept inherent in post-industrial society development determines a refocusing of engineering education to maximally align the competencies of higher educational institution graduates with the set of core corporate values. There is a need to build willingness in masters of Engineering, as future line managers, to influence the development of values-based orientations of production unit employees in accordance with the declared corporate values.

Methodological Background

Corporate culture is a declared set of cultural values, principles, and codes of employment conduct that determine and regulate a labor enhancing conduct of organization employees in the course of employment (Bolton, Brunnermeier & Veldkamp, 2013). The assumption that corporate culture actively promotes employee self-actualization and professional responsibility is widely accepted in the field of engineering (Kosyakov, Svit, Seymour & Bimer, 2014). The motor transport industry has also started to apply this requirement for operational staff to comply with the enterprise values (Bukalova & Novikov, 2018).

The objective of the study was to obtain reliable data in order to develop training standards based on recognition of relevant demands by the major vehicle servicing business partners in the Oryol Region. The study was based on the competence approach and used a formalized expert survey methodology. The aggregate competences of vehicle servicing maintenance engineers of business' staff were appraised, became the experimental basis of the study. Respondents were selected from the managers and experts of the twelve most competitive vehicle service enterprises in the area.

Specific statistics are 'stubborn figures'. However, in educational research problems, "... *the logic of interpretation cannot be narrowed down to that of empiricism*" (Vakhshayn, Konstantinovskiy & Kurakin, 2008, p.29). of this argument of the famous sociology theorist V. S. Vakhshtain made it possible to follow the following thesis during the interpretation of study results: "... *different sociological explanations are possible exactly because they are narratively expressed and recorded in invariant explanatory schemes, narrative constructions*" (*ibid*).

Based on this theoretical principle, and a questionnaire completed by major stakeholders, the level of relevance of operational personnel competencies was discussed. This discussion included senior managers and lead specialists of the twelve businesses of the Oryol Region.

The study framework defined the choice of the sociological interpretation methodology for the interpretation of the empirical data.

Results

A quantitative approach was used to assess the respondents' level of significance of the competencies of a university graduate using a 100-point evaluation scale (table 1). The sample size was determined by the number of car service companies of official dealers of car manufacturers of the Orel region. The results were analyzed in terms of the level of relevance of individual competencies of university graduates and blocks of competencies: disciplinary knowledge and fundamentals; professional competence and personal qualities; interpersonal skills: teamwork and communication; planning, design, execution of production activities.

Table 1. Grading scale

Score	Interpretation of level assessment the relevance of the graduate's competencies
100	Competencies of the highest relevance.
80	Competencies of high relevance.
60	Competencies are relevant to ensure effective core production activities.
20	Relevance of competences is insignificant.
0	Competence irrelevant, useless for the performance of core production activities

The questionnaire of production professionals yielded unexpected results. The highest relevance score was received not by the competencies reflecting the operational engineering training, but by the production communications competency set. The highest level of relevance was for the set of competencies with development largely driven by the effect of vehicle servicing enterprise's corporate culture. The weighted average values of staff competency actual relevance are shown in Table 2.

Table 2. Level of Actual Relevance of Vehicle Servicing Enterprise Operational Staff Competence

Operational Staff Competencies	Operation Specialist Evaluation (points)	Higher Education Student Evaluation (points)
Ability to communicate orally and in writing to achieve operational objectives	93.85	62.95
Ability to work in a team and be non-judgmental to social and cultural dissimilarities	96.92	57.87
Willingness to employ personnel relations techniques and methods	93.85	56.92
Willingness to abide by ethical standards	96.92	66.45
Awareness of professional responsibility types in the context of ethical standards	93.85	55.64
Self-management and self-education ability	95.38	61.12

The discussion revealed that one of the most relevant competencies is the capacity to influence operational staff in order to develop adherence to productive conduct standards/customs and enterprise values. To put this in other words this is the ability to ensure the development and maintenance of corporate culture of an enterprise.

This identified the need to add to the list of educational goals of the masters of Engineering degree program in regard to personnel management – learning methods for developing corporate culture through the pedagogical impact on the production personnel employment conduct. This unit of competence is relevant to a modern engineer as a major component of the implementation of the widely accepted methodology for technical production organization, and systems engineering.

Discussion

The masters program traditionally includes academic training but this is traditionally focused only on their academic activities. It is ineffective to view the training agenda of the engineering masters program as a purely academic phenomenon, disregarding educational goals integrity and relations with standards regulating the result of future operational process. The specific feature of training in the context of actual operations

is that traditional educational approach expressed in terms of “instruction – training” cannot be reduced to cognitive activity of learners.

Training is emphasized to be a subject of didactics that represents the unity of training and nurture (corporate culture teaching). The willingness of masters students to participate in corporate culture development changes the direction of the traditional didactic teaching/training relationship from learning activity to teaching activity. This interpretation of didactics ensures that the needs of engineering job training identified by the study will be addressed. In the post-industrial society, training in the field of production *"requires the adoption of not merely information technology, but also a new methodological basis of education"* (Testov, 2012, p. 3). Thus, in accordance with the proposed methodological basis, the traditional didactic relationship in the future teaching activity of Master of Engineering students is transformed into the following triad: "learning activity/teaching activity/industry corporate culture".

The training of Master of Engineering students to influence the attitude of production personnel to corporate culture learning has certain didactic specifics. This determines a change in the educational process component of the masters degree program. This is to increase the production organizational and managerial activities learned by masters students and to add a subjectively new activity model to the learning results (Ornellas, Falkner & Stålbrandt, 2019; Ivanova, & Popova, 2017). Masters degree program providers must thereby be aware of the students learning result, the model of their future teaching activity.

The peculiarity of training masters students for work-based educational activity is determined by the fact that the subject of the educational process (production personnel) have hands-on experience in production and industrial relations, as well as personal experience. In contrast to the traditional educational process involving development of new professional experience, training of production personnel is meant to transform their previously accumulated experience (Yermolenko, Ivanova, Klarin & Chernoglazkin, 2013). For this reason, the problem of achieving the desired learning result cannot be resolved on the basis of traditional didactics. Accordingly, masters students must be informed about the peculiarity of work-based education that lies in the requirement to include the trainees' (production personnel's) own diverse experience in the process. Therefore, the peculiarity and complexity of production personnel training, as compared to traditional training, is due to its transforming nature.

Traditional didactics is focused on the educational needs of a subject of the educational process (Bravenboer & Lester, 2016). Production personnel training is, however, based on practical needs – workplace issue resolution. For this reason, a production employee has the position of is a subject of training who acquires practical skills, rather than of a student gaining knowledge. The didactic specifics of corporate training also imply the change of the trainer's position (Lester, 2014; Price & Whiteley, 2014). It seems most expedient to change the traditional position of an expert teacher to that of a facilitator who, through a dialog, organizes the efficient development of trainees' new experience. A facilitator creates a favorable atmosphere of dialog with trainees and a positive mindset for participating in corporate training (Reed & Abernethy, 2018). When maintaining the training direction, a facilitator helps trainees concentrate on the material being studied and restricts discussions not related to the learning objectives (Wang & Bloodworth, 2016).

A facilitator summarizes and analyses the results of a training session, and presents them in a form which can be applied by the learners in practice (Becuwe, Tondeur, Roblin, Thys & Castelein, 2016). The status of a facilitator enables young professional

master program graduates to carry out educational activities focused on promotion of corporate culture among employees.

To achieve the efficient organization of work-based training, it is important to consider the significance of awareness by production personnel of their involvement in industry community of practice. For this reason, it is essential for masters students – future education providers – to understand that corporate culture learning is relevant to company's employees. Culture translation is known to be a concept of traditional didactics (Choshanov, 2015). Learning by masters students of methods for teaching corporate culture fundamentals to production personnel implies the generation of new social experience concurrent with its transformation into the cultural form.

Traditional didactics is generally focused on an individual subject of training. In contrast, the didactic peculiarity of corporate culture development may lie in the fact that an individual subject of training is replaced by a collective subject of training. This may be a working team learning the labor enhancing methods of social and industrial relations necessary for professional collective actions. As an example, this may be a newly formed crew of mechanics trained in a new structure of production relations.

One of the major didactic specifics of training masters students to teach production personnel is educational design of real-life workplace issues. This is because workplace issues constitute the major source of needs for work-based training. Accordingly, the didactic peculiarity of work-based training lies in the achievement of a balance between real-life workplace objectives and educational activity.

A specific feature of the motor transport industry is the variety of personnel responsibilities. This is due to a widespread use of regulations, contractual relations and mutual arrangements. These different responsibilities do not lie within the sphere of ethical responsibility as such. From academic perspective, this is beyond ethical responsibility. Vehicle maintenance activities may involve workplace situations subject to conflicts between the ethical responsibility and the extra-ethical responsibility of operational staff. The operational activities of the motor transport industry are value-oriented business activities intended to generate profit. It is the duty of every employee to promote the achievement of these objectives. In this context, the influence of corporate culture may ensure the acknowledgment by the operational personnel of the supremacy of ethical responsibility to ensure people's wellbeing even if it results in the decrease of profit-earning capacity of operational activities.

Training activities focused on training of a masters program student in corporate culture development are complicated by the dynamic character of today's post-industrial transition of the engineering sphere (Støren & Wiers-Jenssen, 2016; Abramov, 2011). Masters program students should expect that the process of corporate culture development will require their continual interactive self-education.

It is expedient to inform masters students during their teacher training about the necessity to transform the trainees' (production employees') own accumulated production and personal experience. In this regard, the generation of new experience is based on the continuously emerging changes in the technical and technological, as well as social and organizational environment for production processes. The motor transport industry is exposed to high risks associated with negligence of operatives. In this context, the problem of liability distribution among task performers is highly important. Thus, the process of training in corporate culture development for operatives inevitably focuses on the development of the ability to identify work activity responsibilities consciously, as well as to approach the selection of engineering and process solutions as though making ethical choices.

Modern operational processes of the motor transport industry are implemented, as a rule, by employee teams. The personal professional activities of an individual employee within joint activities of a work team cannot be completely distinguished. This may give rise to a specific kind of professional ethical problems. There is the danger of leveling-out of personal responsibility of an employee. Therefore, master program graduates should be able to promote involvement of operational personnel in fulfillment of their ethical duty, which should be externally expressed in corporate responsibility of the business. However, the training process of masters programs traditionally extends the development of professional duty on individual responsibility of an employee only.

Corporate culture teaching in post-industrial technical production serves to prevent workplace crises (Hailin, Haimeng & Qiang, 2018). From the perspective of teacher training for Master of Engineering students to participate in the process of personnel's corporate culture learning we can identify specific development areas of didactic theory within the educational paradigm of the post-industrial society.

Conclusion

The training program for masters of Engineering presented here mainstreams the academic problem of identifying didactic tools for teaching corporate culture to production personnel. When resolving this academic problem, one should take into consideration the failure of traditional didactics to account for the specifics of production personnel training, such as:

- discussion of the managerial impact on trainees (production personnel) for the purpose of production performance improvement, change of the attitude to labor as the major educational goal;
- refocus from learning and cognition to cognition and transformation; transformation of the accumulated professional experience, rather than generation of knowledge and skills typical of traditional professional training;
- mismatch between the subject that initiates training (corporate management) and the subject of the educational process – trainee (company employee);
- dialogic educational process; change of the trainer's position in education practice to the subject-subject interaction;
- learning result assessment in accordance with the level of impact on trainees' employment conduct and work achievements, rather than assessment of knowledge and skills.

Engineering education is a diverse sphere. Development of competencies in masters students reflecting their readiness for work-based educational activity is but one component of the above field. However, the study results explicitly specify the relevance of this problem in engineering pedagogy. The problem of training for masters students was identified through the survey results of key stakeholders, i.e. the industry's competitive enterprises with a sufficiently high corporate culture level. Less competitive enterprises may experience this problem on an even larger scale. Thus, the article aims to introduce the problem of training Master of Engineering students for educational activity into the contemporary research discourse on engineering education problems.

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