



# Features of Personnel Training/Retraining in the Conditions of Digital Transformation

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**Abstract.** Today, no one disputes about the prerequisites of digital transformation, because it has already been happening. It would be strange to assume that businesses will be able to work according to the old model, with traditional processes and the same efficiency. Everybody is aware education to be an essential part of the economy, and the degree of education in society is compared with parameters of economic development and welfare of people. The purpose of the research is to improve effectiveness of personnel training/retraining for work in the conditions of digital transformation. The tasks are: to analyze the impact of digital transformation on labor market; justify the need for training/ retraining of personnel for these activities in the context of digital learning; consider stages of training personnel using distance education technologies; analyze participants' interaction in the educational process. Empirical (observation, comparison), theoretical (analysis, synthesis, modeling) and diagnostic methods (of the condition and causes) research methods were used. The article analyzes the impact of digital transformation on labor market and the trends of the latter's development; the necessity of staff retraining for activities in digital transformation; the stages of personnel training, and the interaction of educational process participants in distance education.

**Keywords:** Digital transformation · Digitalization of education · Distance learning · Labor market · Staff retraining

## 1 Introduction

Digitalization, digital transformation (DT) — the tendency has at present been resolutely recognized by representatives of global business in various spheres and is the most essential focus for business improvement at the moment. The opportunity of this trend is merely gigantic. At present, in line with certain estimations, more than 60% of the global biggest businesses have now been operating on their DT policy [5]. Furthermore, there has been a great upsurge in amount of requests for such services from Russian companies over the past year.

The main obstacle to successful business transformation is the lack of readiness of companies and personnel - lack of motivation and often lack of experience. In the process of business transformation, the main components also change: the approach to conducting business changes – businesses move from a designed marketing model to a customer-oriented system, methodologies are reborn from project management to product

management, the organizational structure is being transformed, and there is a need for continuous development, training and professional development of employees [9].

Along with new technologies, new positions are being created in companies, such as Digital Director, Data Director, Data processing Specialist, Transformation Director, and others. The structure of companies is also changing – there are completely new departments, for example, the Transformation Team, which includes specialists from various areas of business activity.

Digital transformation is no longer a service of consulting companies, but an inescapable technological process that global businesses are going through to adapt to the latest realities of the digital economy.

The Russian economy will also undergo major transformations in the coming years. Many businesses and firms will leave the market, others will lose their profits, and completely new businesses will take their place. The hardest hit due to the introduction of new technologies will be the labor market. There are now about 7 billion people living in the world, of which about 3.5 billion are able-bodied persons older than 15 years. Simultaneously, there are only 1.2 billion jobs available [3].

Humanity is on the verge of the highest unemployment rate in its history. To stay alive, everyone will have to adapt to the new conditions: the state, private enterprises and employees. At the start of 2019, the level of joblessness was approximately 5.2% in Russia that is roughly 4 million people. It might give the impression the rate of unemployment to be rather little. Nevertheless, it is used merely to officially recorded people without jobs. Indices of self-employed remain more significant. In keeping with numerous estimations, from 15 to 22 million Russian people catch salaried jobs in so called “grey”, i.e. illegal segment [3]. And since the staff will have to work in the conditions of digital transformation, it would be logical to train/retrain them in the conditions of digitalization with the use of distance and communication technologies. In this article, we will focus on some aspects of staff (hereinafter referred to as listeners/trainees) training, in particular at the stages of training, the interaction of participants in the educational process in distance learning (DL).

## 2 Methodology

The investigation basis consists of: scientific papers; psychosomatic literature; theories and reports at scientific conferences, e-resources on the subject.

Empirical (observation, comparison), theoretical (analysis, synthesis, modeling) and diagnostic methods (diagnostic analysis of the condition and causes, in particular the impact of digital transformation on the labor market and its development trends) research methods were used in the study.

Key areas of digital transformation include the following:

- customer focus,
- partnership and collaboration,
- use of data,
- search and implementation of innovations,
- value management,
- strategy of personnel management and digital culture [8].

As it was noted earlier, it is advisable to conduct training/retraining of personnel for activities in the context of digital transformation in the context of digital learning using distance and info communication technologies (ICT) [6]. The use of ICT in higher education system allows, first, to ensure equal access to educational resources (electronic libraries, cases, educational platforms) regardless of the listener's place of residence, health status, etc. secondly, it forms the ability of listeners to build independent educational strategies, and also contributes to the development of skills for independent work with information, which increases the analytical potential of listeners [1].

### 3 Results

Digital transformation in the economy and business directly depends on digital transformation in higher education [7]. In this section of the article will focus on some of the characteristics of the personnel training process (hereinafter listeners/trainees/learners), in particular at the stages of learning using ICT, interaction of participants of educational process in distance learning (DL).

#### 3.1 Stages of Training

Distance learning, carried out with the help of ICT, is a process of mediated communication between teachers and trainees, the goal of which is organized gaining of information, competences and capacities specified by academic standards [4].

The procedure of cooperative work of trainees and trainers in the DL is offered in the shape of a sample comprising five basic stages: 1) acquaintanceship, interaction and incentive; 2) information exchange; 3) understanding; 4) application; 5) knowledge building and improvement.

First, let's provide the general characteristics of the model. The necessary prerequisite for effective activity of listeners in DL system is their motivation, the desire to receive education (advance their abilities) via DL (the first stage). This phase relates as well to the acquaintanceship of trainees and trainers. Since that time, the trainer starts escorting trainees: defining their requirements, problems, and degree of their readiness. During the second phase, trainees learn the data delivered by the DL teacher or autonomously seek out the content concerning the training course. Didactic backing is delivered via advising at this phase. The third and fourth phases contain activity on the integration of the data acquired. At the fifth phase, the learned information and skills are summarized.

During every phase, trainees require definite technical abilities. Every phase needs definite abilities from DL trainer as well. The interactivity scale shows the degree of interactivity that can be expected at each stage. When organizing practical classes, one must keep in mind that during the first stage trainees interact, as a rule, only with a few listeners. Following the second phase, the amount of listeners that they cooperate with and periodicity of interactions gradually increases, although the fifth stage involves a large share of independent work of listeners.

Let's look at features of every phase in details.

*Stage 1: Acquaintanceship, interaction and incentive.* Through the learning process, and particularly at the start of it, when the listener is faced with possibly unfamiliar systems and modes of activity, it is important for him/her to be aware of the support from the DL teacher. During the first phase, incentive is very significant. The result of teaching mostly relies on the trainees' view of training forecasts, aims, and probable challenges. The mission of the trainer is to support trainees get used to it and propose assistance. It is here that the trainer encourages team interrelation and reciprocal help groups to be structured on his initiative. The trainer ought to provide the most comprehensive data on the training course on the whole and its details. It is essential to clarify the importance of homework and last tasks in the course, the needs for them. That is the trainer should "eliminate" probable listeners' inquiries in advance. The first phase stops after trainees become acquainted with the group and begin e-mailing primary letters to other trainees and the teacher.

*Stage 2: Information exchange.* Listeners get used to a new learning environment; a society of people working on common tasks arises. When listeners master this stage, become familiar with the etiquette of communication and technology, they are ready to perceive and search for information. Speaking about communication at this stage, it is worth noting that the teacher should make every effort to ensure that the listeners have a desire to communicate. Group discussions often show how quickly and smoothly the group works, the level of mutual understanding of participants. At this stage the teacher is to encourage the development of mutual respect among listeners, to eliminate imminent conflict, to help listeners to engage in better communication.

One of the demands of support in DL states that the course states that the course and training manuals must be self-sufficient in terms of information availability. Often, the course content is provided to listeners in the form of well-made and ready printed materials, in text format on the internet. Listeners independently master theoretic resources, advising with the trainer if required. The trainer, in turn, ought to inspire trainees to seek out extra data, search for essential connections and resources. Abilities to seek for material, choose the essential one at this phase may not be quite established, so the trainer ought to manage this skill. At the start of this phase, the trainer should consider means and practices of group-discussions, partaking in computer sessions, etc.

*Stage 3: Understanding.* Trainees recreate the gained knowledge and spread it to answer common learning problems, and they start cooperate more dynamically. To realize this aim, tutorials are considered to be efficient, where debates, role-playing games, and case studies should be planned under the supervision of a trainer and numerous active learning means which may eliminate holes in the data of the theory should be used.

At this stage, it is important that the teacher correctly manages the listeners' learning activities. It may be justified to attract listeners as "experts" - different people have different experience, knowledge from different fields, and this experience, vision and ideas can contribute to better assimilation of theoretical knowledge, problem solving, etc. The teacher should direct listeners to analyze their own activities (Which sections caused the greatest difficulties and why? What skills do the listeners lack?). It is likely that this stage will be held in full-time mode, at the so-called installation session.

*Stage 4: Application.* Trainees solve problems connected with using their knowledge to solve non-standard problems. They verbalize their understanding of the theme being investigated. What they study is not so much a product as a mental original practice, comprising the give-and-take of views, their evaluation, and the skill to fix them through debates or pair work. Learning is not mere active, it is interactive.

Working in pairs and groups allows solving tasks, considering different points of view, model, coming to a common opinion, etc. The listener is involved in the discussion and interaction with other listeners and experts in the communication process. At this stage a lot depends on teacher's behavior – controlling or participative style, dependence on/her own experience, etc. A complete variety of active educating means should be applied at this phase. Reflection of activity is also very essential.

*Stage 5: Knowledge building and improvement.* At this stage, there is a kind of generalization of the knowledge and skills acquired by listeners. They are presented the chance to alter their situation, improve their attitude and use it in their future work as specialists. Knowledge building happens when trainees study a task, arrive at some view, argue it, and estimate their positions, i.e. participate in reflection.

There may be a situation when listeners will need less support and assistance from a teacher-consultant. During the phase, the trainer does not offer prepared answers; listeners become more authors, not just information carriers. At this stage, the ability to think critically and evaluate the results of independent activity is formed. Listeners and teachers can use the so-called constructivist approach, which encourages listeners to think independently and explore the process of knowledge accumulation [4].

During the 5th stage reflection also plays a significant role: analysis and results of training course and its efficiency, the influence of technology on the educational process. Tutors, in turn, ought to be prepared to provide trainees with activities and tasks that improve critical reflecting (for instance, commenting other listeners' written work; defending final projects, the topics and conditions of which were agreed at previous stages). During the phase, it is worthwhile to perform a business play as one of the laborious types of active training. During the 4th and 5th phases, there is no teaching in the form of lessons. DL offers listeners an opportunity to autonomously search and analyze data, build their knowledge. The teacher is supposed to promptly react, summarize, assess, that is supervise the learning work of listeners. If in the process of the whole training trainees are given ongoing adequate assistance from the tutor, then the process of transferring from one phase to another and reaching more advanced stages will be rapid and efficient.

### **3.2 Collaboration of Partakers in Educational Process in Distance Learning**

Coordination of the teacher's activities with the participants of the educational process is of great importance in the organization of training/retraining of personnel to work in the conditions of digital transformation. In their professional activities, teachers have to interact with the following persons involved in the learning process: the course leader, authors of training courses, technical staff, administrators, other teachers, including the teacher-consultant, listeners.

Let's look at some of the relationships between participants in the educational process. Relationships with the course leader. The DL teacher should report periodically to the course leader to develop these relationships. Remember that both of you have specific expectations from each other. The ideas about these expectations are given in Table 1.

**Table 1.** Mutual expectations of the distance learning teacher and the course leader

Your expectations from the course leader	The course leader's expectations of you
You assume that your course leader will	Your course leader assumes that you will
Keep in touch with you	Contact him
Discuss with you the content of the course	Master this course and develop your own ideas on the activities of the DL teacher
Let you know about resource limits and what he expects from you	Do what is expected of you
Assist you in improving your business	Constantly improve yourself as a teacher
Give you feedback on the results of your work	Welcome feedback from him and respond effectively to it
Provide you with necessary information	Ask him to provide you with the necessary information and apply it
Assist you in solving emerging problems	Report and discuss your problems as they arise

Source: author.

Relationships with the course authors can be conducted in face-to-face (instructing) and distance mode, their goal is to get explanations (if necessary) and improve the course. You can get a variety of data, including information about students, from the administrator, who should also be friendly with the DL teacher. You both organize the training process with the support of the administrator. Relationships of a DL teacher with the teacher - consultant. For a DL teacher, especially a beginner, such relationships are invaluable: getting practical support, answers to many different questions at the initial stage, the teacher-supervisor will check the quality of your comments on the written tasks of students, and help you adjust your professional activities. Considerations about these expectations are given in Table 2.

The nature of the relationship of DL teacher to other members of DL system depends largely on the efficiency of the educational process, and yet, since the teacher is one of the main participants in the educational process, the educational process will be as successful as he himself knows the training material, owns a situation, is educated and competent. Intensive interaction with other participants will enable the teacher to contribute to fruitful work and mutual assistance among the teaching staff of the course and strengthen their position in the professional environment.

**Table 2.** Mutual expectations of the distance learning for teacher and the teacher- consultant

Expectations of the teacher - consultant from the DL teacher	DL teacher' expectations from the teacher - consultant
Carefully studies the feedback and applies it to their professional development	Analyzes his/her activities objectively and thoroughly
Informs the teacher about how effective the consultant's comments were for the teacher	Starts and maintains, along with tracking, other contacts (social networks, email, etc.)
Treats him/her like a colleague	Treats him like a colleague
Ready for joint professional development	Ready for joint professional development

Source: author.

## 4 Discussion

At the moment, few doubt that we are experiencing the era of the digital revolution. Digitalization, digital transformation - these are trends that are already firmly fixed in the realities of today. The main economic trend of the current era is the digital transformation of business. This concept was thought for a long period exclusively as transformation and storage of common information in digital format and transferring of media from analogue to digital one [2]. Now digital technologies are being actively introduced into all spheres of business and traditional industries that have not modified for years. It first of all influences the labor market: according to the World Economic Forum robots will ruin more than 75 million global jobs in the near future, though they will generate 133 million new jobs [11]. The DT is built on certain know-hows: industry and business procedures robotization; manmade intellect; many-channel gathering of information, its study and use both for forecasting and satisfying consumers' request and wishes etc. At the moment everybody ought to understand that such concepts as "profession", "stable employment", "career" in the classical sense of the word, no longer exist. And never will be. Moreover, this does not depend on the qualifications of the employee. This applies to the situation both in the whole world and in Russia. There are examples when a former private security guard became a system administrator, completely and radically changing his profile of activity. And there are examples when investment bankers have been unemployed for years, because there are practically no investment banks left in Russia, but they continue to hope for a miracle.

The general pattern is as follows. For "blue-collar" workers, the amount of jobs reduced by near 20%. There remain fewer and fewer positions for low-skilled employees which makes it more difficult for them to gain their money. There has been redeployment among "white-collar" workers. Like the "blue ones", the number of jobs also decreased by 20%, but new ones came to replace those that disappeared. The status quo has roughly remained, but the situation has required many people to retrain, get a second higher education, and generally not sit on an even keel. Therefore, the key skill now is constant self-education and obtaining new competencies, creating a flexible set of them that allows you to adapt to any changes [10]. That is why the study was aimed at solving these problems.

## 5 Conclusion

Summing up, we can conclude that the digital transformation has significantly affected the labor market, causing the need for enterprises to train/retrain personnel. The paper analyzes the impact of digital transformation on the labor market; substantiates the need for training/ retraining/advanced training of personnel for new activities; proves the feasibility of such retraining in the conditions of digital learning; considers the stages of training using distance educational technologies; analyzes the interaction of participants in the educational process in distance learning. The current situation requires a corresponding restructuring of business, and, on the other hand, changes/modernizes education system, both of which will undoubtedly cause a number of transformations, which we will witness in the very near future.

**Acknowledgements.** The author of the article expresses her appreciation to the Department for support of publication activity of Samara State University of Economics for the comprehensive assistance and support provided.

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