

*Invited lecture/Review*

# Digital education in the development of the company's human capital

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**Abstract:**

The company's human capital is its biggest asset, so its development is one of the essential areas of the company's development strategy. The concept of "human capital" has evolved for many years in connection with technological progress. And at each stage, human capital was a crucial element of business development. Today, we live and work in the era of digitalization, which has fundamentally changed all aspects of human life, including the approach to human capital development. An essential element in the development of human capital is the constant training of employees because, in the current conditions, the employee's knowledge, skills and competencies quickly become outdated, and, therefore, they need to be constantly updated. However, studying in the classical sense (attending classes, communicating with the lecturer, assignments, etc.) takes time and effort. It complicates human capital development under conditions of a high pace of activity. However, the situation has fundamentally changed in recent years due to the digitization of education. Today, digital education allows employees to study and work simultaneously, without prejudice to the quality of the activity results and the knowledge obtained. The article shows options for introducing digital education tools into the company's activities to expand human capital development opportunities. Attention is paid to the formation with the help of digital education tools of an individual training trajectory, which allows employees to increase the effectiveness of their training. It is considered employee competencies that can be developed and acquired due to digital education. The advantages and disadvantages of using such tools in the company's work are analysed.

**Keywords:** Human capital; Lifelong learning; Digital education; Competencies; Individual learning trajectory; Employee.



## 1. Introduction

The company's human capital is its biggest asset, so the sustainable development of employees is one of the essential indicators of its success. It should be noted that the concept of "human capital" has evolved over the years in connection with technological progress, and at each stage, human capital has been a crucial element of business development. To date, we live and work in the era of digitalization, which has fundamentally changed all aspects of human life. For now, many work processes that were performed by humans have become digital and do not require human involvement. However, despite this, human capital remains the driving force of business development, so it needs to be studied to ensure its preservation and development.

The most effective way to develop human capital is education. Over the past decades, a new approach to its implementation has been formed in education, which has received the name lifelong learning. The idea of lifelong learning is associated with the half-life of knowledge concept, which Fritz Machlup proposed in the 20th century. The concept essence is that due to the rapid updating of information, some knowledge becomes irrelevant even before a person learns it. Accordingly, there are fields of activity in which the de-actualization of knowledge occurs very quickly, for example, the information technologies field. Under such conditions, knowledge needs constant updating; therefore, a person has to learn throughout life (Mariz-Pérez et al., 2012; Pasban & Nojedeh, 2016; Boon et al., 2018; Protasenko & Mygal, 2020; Protasenko et al., 2021; Wujarso et al., 2021; Ray et al., 2023).

In addition, the education of the 21st century uses new tools to ensure the learning process, which is manifested in the following. Firstly, education is not a universal program for everyone but an individualized system aimed at revealing a person's natural abilities and obtaining the knowledge he needs for further professional development. Secondly, Education is gradually becoming digital, which allows expanding opportunities for providing continuous education since digital education functions due to the use of digital technologies that work with the help of the Internet (Laal, 2011; Han & Shin I, 2016; Cefalo & Kazepov, 2018; Mygal & Protasenko, 2019; Alenezi, 2021; Gabriel et al., 2022; Haleem et al., 2022; Alenezi et al., 2023).

Therefore, the purpose is to study the current trends in digital education, to determine the employee priority competencies, and to consider possible ways of implementing digital education tools in the company's activity.

## 2. The role of education in human capital development

First of all, it is necessary to analyse the meaning of the concept of "human capital" to determine the relevant competencies of the employee and possible ways of implementing digital education tools in the company's activity. Today, human capital is a specific stock of health, knowledge, skills, abilities, and motivation formed and developed as a result of investments and accumulated by a person, which is purposefully used in one or another economic activity, contributes to the growth of labour productivity and, due to this, affects on the income growth of its owner, the profit of the enterprise and the national income (Grishnova, 2014).

Let's pay attention to several fundamental points arising from this definition:

firstly, human capital is a specific stock of health, knowledge, skills, abilities and motivations of the employee formed and developed as a result of the company's investments, and not a set of characteristics that the employee must possess at the time of hiring. Therefore, for the effective operation of human capital, it is necessary to develop it through investment in development and not just search for employees who meet a complex and long list of employer requirements;

secondly, the growth of human capital as a result of cost-effective investments in its development naturally leads to the growth of the company's income;

thirdly, the increase in the company's revenue due to the development of human capital stimulates further investment in it, which builds the basis for future income.



At the same time, investments in the development of human capital contribute not only to the development of a specific company but also stimulate socio-economic development by increasing the general level of well-being of the population (Figure 1).

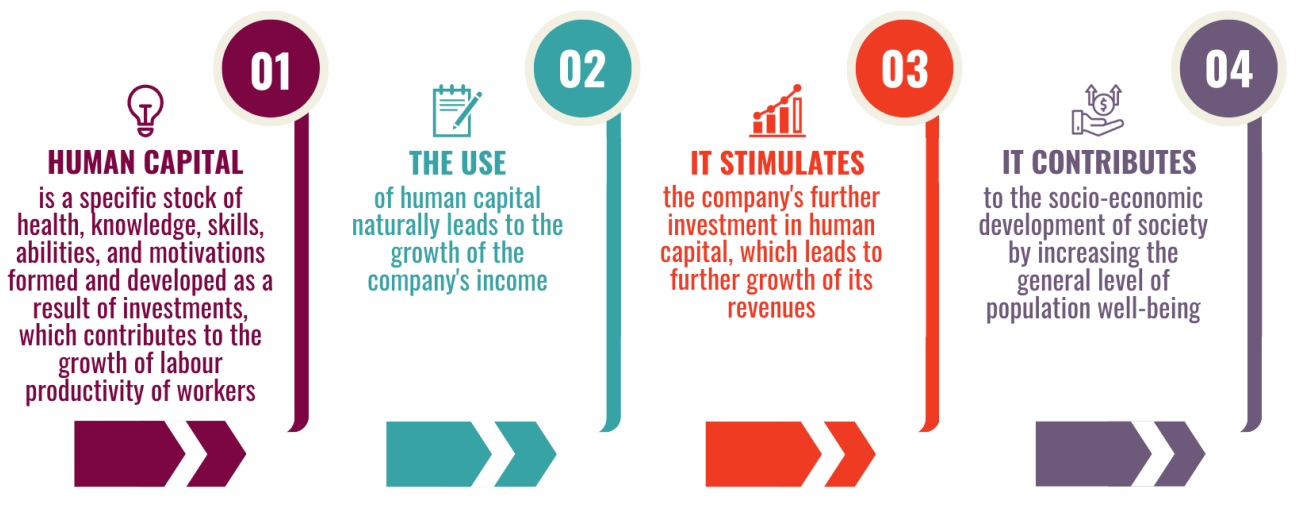


Figure 1. The role of human capital in the company and society development.

The next question is the competencies of a modern employee. As you know, an employee's qualification measure is his competence. It determines the employee's ability to perform his functions qualitatively and flawlessly in normal and extreme conditions, successfully master new knowledge and skills and quickly adapt to changing conditions. Practice shows that people with the same level of education work with different productivity and achieve different results. The very concept of employee competence allows us to identify the cause of these differences and determine the most effective direction of work with human capital.

The development of the employees' competencies takes place in acquiring the necessary knowledge, skills and abilities, which reveal a person's abilities and are embodied in the growth of his professional level and potential. Under modern conditions of hypercompetition, an employee must improve his qualification level throughout his life. Thus, the current stage of society's development shows a tendency towards rapid ageing of the knowledge and experience of employees, which is expressed in the lagging of personal knowledge and expertise from modern requirements for the profession. That is why human capital development costs in the world's leading companies make up to 10% of the salary fund.

So, what should be the competencies of a modern employee? The analysis of information on this issue showed that there are many such competencies since, to create a company development plan, it is necessary to form individual sets of competencies of employees that will ensure its development. However, among these competencies, the most in-demand ones can be singled out (Figure 2).

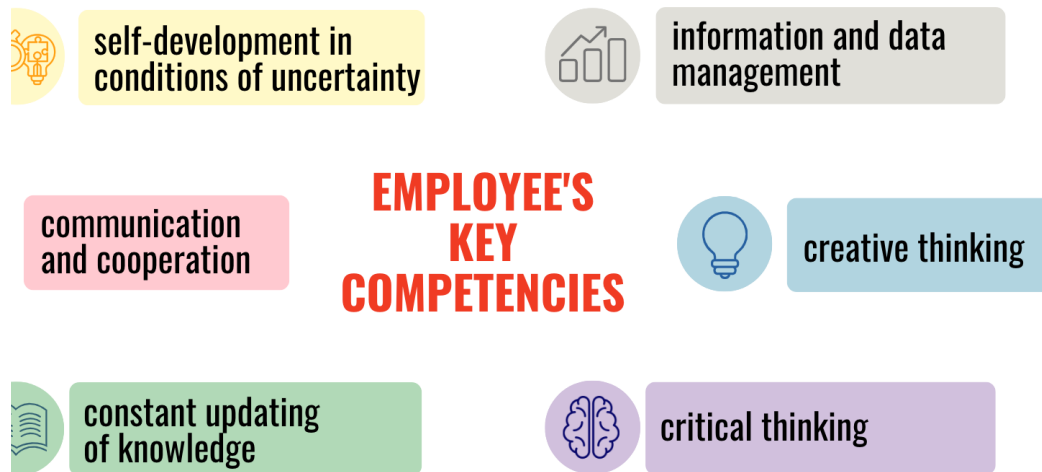


Figure 2. Employee's key competencies.

Let us describe these competencies:

1. Communication and cooperation involves a person's ability to use various digital tools to ensure interaction with other people and achieve set goals.
2. Self-development in conditions of uncertainty reflects a person's ability to self-study, set educational goals necessary for solving tasks, and choose ways to solve them, including using digital tools.
3. Creative thinking involves the ability to generate new ideas, rebuild known ways of solving problems, and create alternative options for actions to build more effective algorithms.
4. Information and data management describes the ability to find sources of information necessary for solving tasks and problems.
5. Critical thinking involves a person's ability to evaluate information and its reliability and draw logical conclusions based on incoming information and data.
6. Constant updating of knowledge includes expanding knowledge, improving skills and competencies.

In this way, human capital development is a work in advance since the employee must have competencies that not only meet the modern needs of society and the economy but also ahead of these needs. Only under this condition it is possible for the company to progress and maintain its competitiveness. The only way to ensure the continuous development of human capital is a lifelong learning (Figure 3).

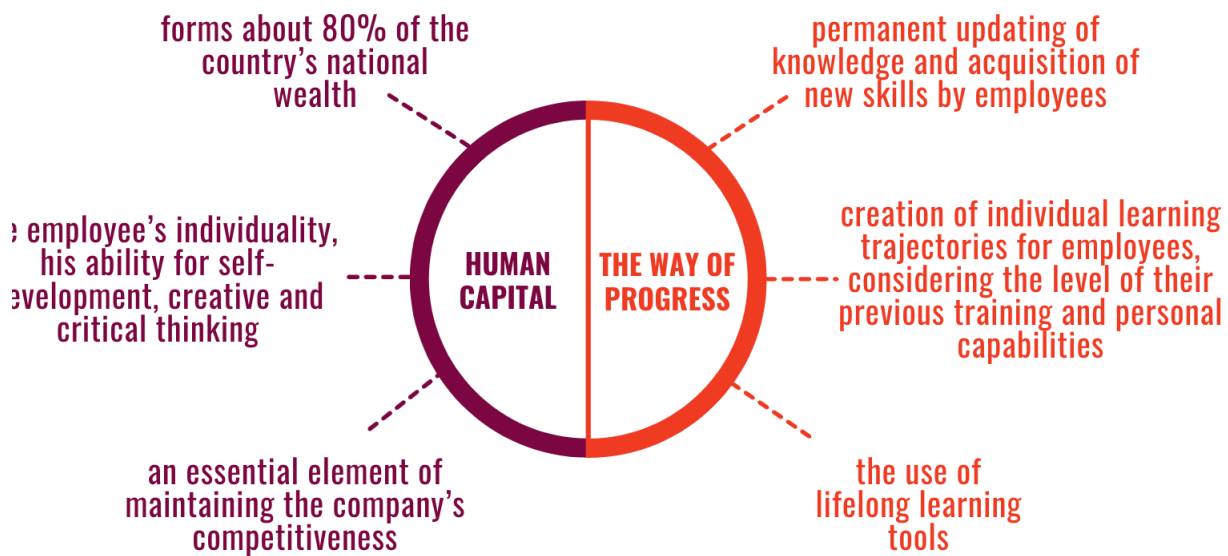


Figure 3. The role of lifelong learning in human capital development.

### 3. Digital education in providing lifelong learning

The introduction of lifelong learning for human capital development has led to the modernization of education. Following this, six principles of lifelong learning are defined (A Memorandum on Lifelong Learning):

1. New basic knowledge and skills for everyone. The goal is to guarantee universal continuous access to education for obtaining and updating the skills necessary for the inclusion of a person in the information society.
2. Increasing investment in human resources. The goal is to increase investment in human resources to raise the priority of human capital.
3. Innovative methods of teaching and learning. The goal is to develop new learning methodologies for the lifelong learning system. With the development of the information society, educational technologies are becoming more and more user-oriented. Learning methods in formal and informal education systems should be user-oriented, changing in the direction of personal motivation, critical thinking and learning ability.
4. A new evaluation system of received education. The goal is to change approaches to understanding and recognizing educational activity and its results, especially in informal and informal education. Recognition of such education will help increase motivation for continuous education.
5. Development of mentoring and consulting. The goal is to provide everyone with free access to information about educational opportunities and necessary consultations and recommendations throughout their lives.
6. Bringing education closer to the place of residence. The goal is to bring educational opportunities closer to the residence place of consumers with the help of a network of learning and consulting points and the use of information technologies.

The easiest way to ensure lifelong learning is through digital education tools. Currently, the digital transformation of education is a complex work on building an ecosystem of digital solutions in education, including the creation of a safe electronic educational environment, ensuring the necessary digital infrastructure of educational institutions, and increasing the level of digital competence.

The essential means of providing digital education is the learning management system (LMS). LMS is used to develop, manage and distribute online educational materials with shared access.

LMS is characterized by a convenient, flexible interface and functionality. It allows taking training to a qualitatively new level. LMS allows organising the learning process according

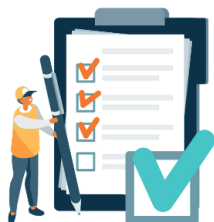


to the needs of a specific group of learners and tracks the success of learning by creating online courses available at any time and anywhere in the world where there is an Internet connection. At the same time, all training materials are stored in one place, and it is convenient to adapt and review them depending on the training goals and the type of company's activity.

In addition, the company can, according to its needs, purchase an LMS that is already working on the market and has user recommendations or develop its own. The company needs to analyse several factors to decide which option is better.

1. Determine the educational needs of the company. There are now a lot of learning management systems on the market for digital education services, so it is necessary to have a clear idea of what exactly the company needs from an LMS and how this system will help achieve the desired results. In addition, it is necessary to determine the target audience, namely: the student's age, the level of digital competence, the time of the classes, the duration of the courses, which digital devices are necessary for the educational process, etc.
2. Determine the requirements for the LMS system. The list of system requirements should be detailed to narrow down the search. Requirements can be grouped as follows (Figure 4).

### FUNCTIONAL REQUIREMENTS



the convenience of managing users and courses.  
 choosing a learning model (independent learning or under the guidance of an instructor).  
 educational content support.  
 analytics and reports on learning success.

### TECHNICAL REQUIREMENTS



The technical implementation of training depends on the choice of the type of platform. There are two types of platforms - "cloud" and "box". Cloud platforms store all information on external servers, and downloading materials is similar to working with Google Drive. Box platforms are installed on the company's server, but their launch is a technically more difficult task

### ECONOMICS OF THE PROJECT



How much is the company willing to spend on the project? Will implementing an LMS pay off? LMS has different payment models and tariff plans. At the same time, according to statistics, users' spending on LMS exceeds the planned by an average of 59%

Figure 4. Key company's requirements for an LMS.

3. Is there an LMS that most fully and accurately meets the company's requirements? There are only two ways to find out. The first is to study developer websites, reviews, reports, and user recommendations. The second is to test the LMS in practice. Many developers provide access to a demo version. In this way, the company can evaluate the system's functionality without risking anything.

To improve the efficiency of human capital development, companies can use the principles of forming an individual learning trajectory along with digital education tools. However, the organization of training according to an individual learning trajectory requires a particular approach. This problem can be solved in two ways:

1. The first method is external assistance. In this case, the differentiation of training is carried out by specialists based on the results of the study of the individual abilities of the



employee. Accordingly, they differentiate the material for learning by the degree of complexity, orientation or other parameters.

2. The second way is independent determination. In this case, the employee builds the education trajectory independently, based on his needs and capabilities. In other words, each person can create his learning trajectory of mastering the necessary knowledge.

An individual learning trajectory is a personal way of realizing an employee’s potential, which is formed considering his abilities, interests, needs, motivation, opportunities and experience. An individual learning trajectory is implemented through a free choice of types, forms and pace of study, educational courses and their level of complexity, methods and means of education (Figure 5).

## STAGES OF BUILDING AN INDIVIDUAL LEARNING TRAJECTORY

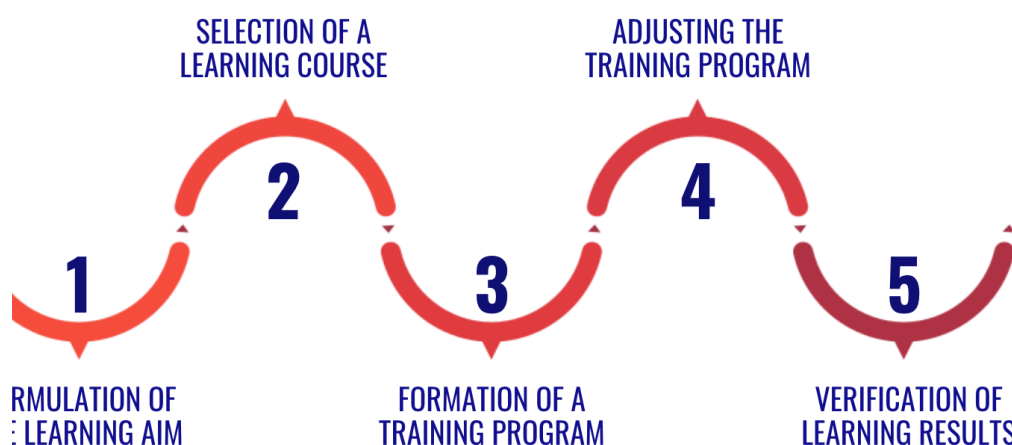


Figure 5. Stages of building an individual learning trajectory.

### 4. Conclusions

Therefore, the company’s human capital is its biggest asset, so the development of employees is one of the key indicators of success. The lifelong learning concept allows the employee to constantly update knowledge and skills and remain relevant in the labour market. Such a trend led to an increase in interest among companies in the application of this concept for human capital development. However, this demand cannot be satisfied within the framework of traditional education, which is why the problem of incompatibility of the classical education system with the new needs of society arises. This situation contributes to the formation of a different approach to the organization of educational activities of employees - training that meets the interests and capabilities of employees at various levels and organically fits into their lifestyle. This approach is implemented with the help of digital education tools, which allows employees to minimize the time and effort spent on improving their qualifications. At the same time, individual learning trajectories can be used to increase the efficiency of knowledge and skills acquisition by employees.

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