

IFTE 2019
5th International Forum on Teacher Education
HUMAN CAPITAL DEVELOPMENT THROUGH HIGHER
EDUCATION

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Abstract

In the context of higher education continuous reforming, the problem of accumulating positive human capital in higher education becomes particularly urgent, with the ever-present need for students professional training and professional adaptation of future specialists. The purpose of the article is to show the importance of human capital formation in an educational and pedagogical context. The main research methods in this study are the assessment of students' human capital with computer programs "Program for Identifying the Integral Indicator of the Individual Human Capital of a Student (IIIIHCS)" and "Database – Individual Human Capital of a Student", and registered in RosPatent of the Russian Federation, higher education. The article analyzes the problem of the students' human capital development by means of higher education. It describes a practical experiment for the human capital formation and the practical results of the technology testing. The article also shows the experimental results, which confirm the positive dynamics of students human capital using the discussed techniques.

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Keywords: Human capital, higher education, quality of education, computer and database programs, student.



1. Introduction

Today, higher education is the main component of modern sustainable development. It is designed to use its enormous potential for the reproduction of human capital, the transferring of knowledge and skills, and developing of qualities that will allow graduates to explore various professional situations and adapt to unexpected turns in technological processes changes, work organization, and the profession structure. Higher education plays a great role in any area of training since it performs an important social task: it is one of the means of implementing social justice in society. Education is the most effective way to increase labor quality and productivity. This idea is massively supported by the theorists of human capital all over the world (Emrullah, 2014). For example, the well-known political scientist Neumann (2002), in his writings, considered education as an independent element of human capital and attributed a combination of the following elements to its main components: cultural and ethnic characteristics; general education; professional education; key qualifications.

2. Problem Statement

Today the economy component of the human capital theory has been mostly developed (Blaug, 1976; Becker & Woessmann, 2009). Another part of this problem field, which includes psychological and pedagogical knowledge, has been studied much less. But it is the study in this direction that is able to confirm the viability of the presented theory. We mean the training that is implemented in education systems, and this is especially important in relation to the ongoing reform of higher education. Research on this issue, especially in higher education, is of particular concern.

Nowadays, human capital is studied by various sciences, in different fields: economics and economic psychology, psychology and political psychology, sociology and social hygiene, and philosophy. On the one hand, this indicates that today there is no coherent and convincing concept of human capital. On the other hand, it is obvious that education and pedagogical science, so far remain aloof, and there are still no serious studies of human capital from the position of education (Harchenko, 2018).

It should be noted that human capital development is a long-term process with such stages as the formation of basic capital and the one based on professional training, by mastering the abilities and skills required for specialized production (or general and specific human capital) (Ciguleva, 2016).

The main concept of our research lies in the theoretical and methodological substantiation of students' human capital formation by means of higher education resulting from the science education, education quality improvement, and effective independent work of students. We developed the practical base, using computer programs, the Program for Identifying the Integral Indicator of the Individual Student Human Capital (IIISHC) and the Database – Individual Student Human Capital.

The study of the pedagogical essence and human capital development in higher professional education, within the context of a new roadmap implementation, has not become the subject of independent scientific research. The relevance of education in the development of human capital is confirmed by the fact that currently this component is considered one of the most profitable types of investment (Ciguleva, 2015).

3. Research Questions

The main question of the study on the problem of human capital development through higher education, was to discover the positive relationship of human capital with education and its influence on the human potential formation, as well as the educational essence and improvement of human capital theory in the system of higher professional education.

4. Purpose of the Study

The purpose of the study was to justify the theory and technology of human capital formation through higher education. In the ongoing study we generalize the world and domestic scientific ideas on the educational essence and forms of human capital. At the theoretical level we also justify the connection of the scientific foundations with economic and educational theory of human capital and their role in «human capital» concept development in the field of higher education. This concept is widely used as a tool for the formation of educational policies in many countries around the world.

5. Research Methods

The Academy of Psychology and Pedagogy of the Southern Federal University became the experimental research base. The study was conducted from 2015 to 2018. Modernizing scientific and educational directions, and finding its practical application areas, we are taking the first step, making progress in increasing human capital.

The purpose of the study was to establish the educational and pedagogical essence, to develop and improve the theory of human capital in the system of higher professional education. Education is the most effective way to increase labor quality and productivity. This idea is massively supported by the theorists of human capital all over the world (Nafukho, Hairston, & Brooks, 2004; Jemrulla, 2014).

Material investments considered by economic theory can be invested into human capital, but since in our country material investments in human capital are cut, we need educational investments aimed at developing quality education and raising the general cultural level, i.e. positive human capital.

An increase in the advancement of positive human capital in higher education is necessary in connection with the main directions and implementation measures of the state policy in the scientific and technological development of the Russian Federation: staff and human capital. Creating opportunities, which lead to identify talented youth, make a successful career in the field of science, technology, innovation and develop the intellectual potential of the country are achieved by the targeted support for young scientists and specialists in the field of scientific, technical and innovation activities, the results of which ensure the socio-economic development of Russia.

The importance of positive human capital development is particularly increasing under the current problems of higher education graduates' employment in the vocational field, as well as their entry into modern society. In this case, the most important thing is to develop graduates' effective human capital, which allows them to adapt quickly to changing economic realities.

Student's human capital assessment is a complex, complex process that cannot be got only by their learning achievement indicators, which are supposed to be the key ones. For the objective picture, it is necessary to develop an integrated model for assessing the quality of students' training, which should be based on an integral indicator which combines quantitative and qualitative assessments, measuring the "productive" and "productive" potential of graduates at all stages of their personal and professional competence development (Mihalkina, Kosolapova, & Mihalkina, 2014).

Having analyzed this research problem, we find out that there are no specific methods for measuring and developing human capital by means of higher education. In this paper, we present an original method for measuring and improve students' human capital, based on the use of interdisciplinary synthesis, developed at the Southern Federal University of the Academy of Psychology and Pedagogy.

6. Findings

The method of measuring the students' human capital of students consists of applying for the test program "Database – Individual Human Capital of a Student", and the computer program "Program for the Identification of the Integral Indicator of the Individual Human Capital of a Student (IIIIHCS)". The programs represent a comprehensive assessment of the level of individual human capital and the measurement of the indicators values of students' human capital at the initial and final stages of our study at the university.

In the computer test program, students are tested according to the following criteria (the most significant from the point of human capital formation view):

- 1) "Health capital". Today, the students' health is defined as satisfactory, while at the time of the survey we found out that more than 50% of first-year students already have various types of physical health problems (poor eyesight, scoliosis, and lack of sufficient muscle mass). In the "health capital", we have included such modules as "healthy lifestyle", "health status" and "health value".
- 2) The "education capital" is the inculcation of knowledge values and the ability to accumulate them. In the "education" we have included the following modules: "educational achievements", "attitudes towards educational activities", "learning motives".
- 3) Cultural and moral capital (general culture, behavior, moral values and principles).
- 4) Labor capital (professional tests and additional education, professional orientation, the value of professional activity).
- 5) Intellectual capital (creativity, interest, and ability to innovate, motives for a change).
- 6) Organizational and entrepreneurial capital (leadership qualities, entrepreneurship, entrepreneurial motives).
- 7) Social capital (communication skills, social activity, and adaptability, social motives and values).

The program "Database – Individual Human Capital of a Student" is designed to save the university students' tests results in order to determine individual human capital. The data are used for subsequent analysis and output of results in the form of a radar chart (Figure 1).

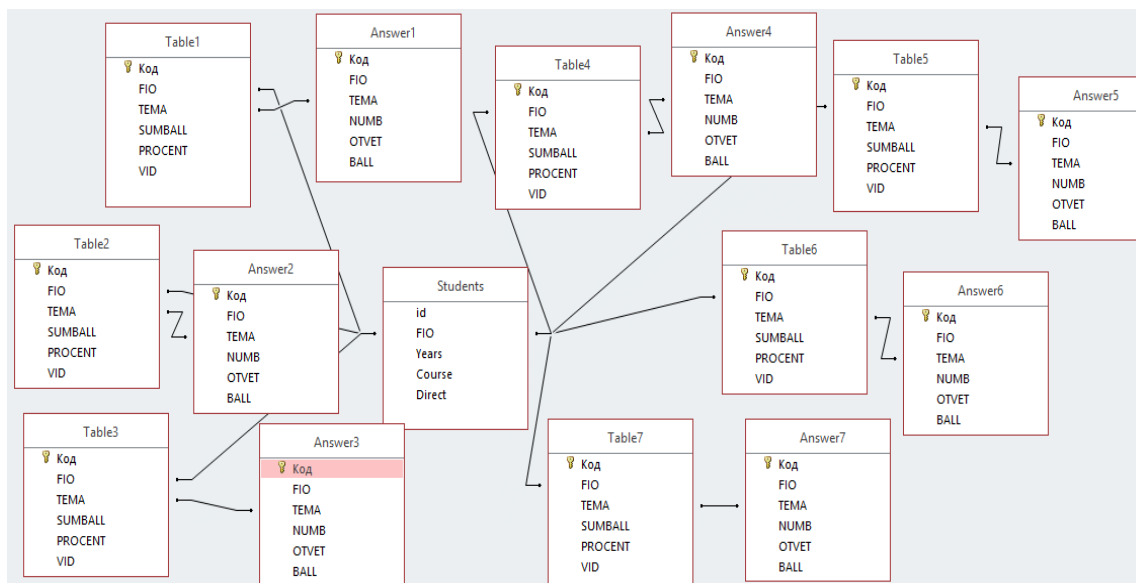


Figure 01. “Database – Individual Human Capital of a Student”

The database structure provides for the direct storage of information on students undergoing testing (the year of enrollment, course, level of education received), as well as the preservation of answers to test questions.

After conducting individual student testing, and storing his/her information in the database, we determine which criterion or criteria he/she has his human capital undervalued. And we give him the right to choose elective courses on a particular selected criterion. For this purpose, we have included into the curriculum (at each course) optional courses and electives aimed at the development of competencies according to specific criteria of the electronic test program. The student, having mastered the training for the selected courses, passes the repeated electronic testing again.

After retesting, the student's human capital became higher on average by all criteria by 10-15%, confirming our research on the effectiveness of our method of forming students' human capital by means of higher education. In total, the experiment covered 520 students and 28 teachers.

The technology of students' human capital formation makes it possible to deal effectively with such problems as the low quality of students' group human capital: for example, at the experiment ascertaining stage only 19% of the students surveyed had positive human capital; at the final stage of experimental education, 70% of students demonstrated a positive result.

7. Conclusion

Based on the literature analysis and experimental data, the state of students' human capital was determined, and the problems of its formation were identified. The study showed that most students, at the present time, are not sufficiently prepared and not motivated to take responsibility for their professional career. The approbation of the technology of students' human capital formation by means of higher education has been completed. The practical results of testing the formation technology of students' human capital were obtained.

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