

**ROLE OF HIGHER EDUCATION INSTITUTIONS IN SOCIETY:
CHALLENGES, TENDENCIES AND PERSPECTIVES**

Academic papers

Nr. 1 (6)

**AUKŠTŲJŲ MOKYKLŲ VAIDMUO VISUOMENĖJE:
IŠŠŪKIAI, TENDENCIJOS IR PERSPEKTYVOS**

Mokslo darbai

Nr. 1 (6)

EDITOR – IN – CHIEF

KANKEVIČIENĖ Lina – Assoc. Prof. Dr., Alytus College, Lithuania

EXECUTIVE EDITOR

BALYNIENĖ Rasa – Alytus College, Lithuania

TECHNICAL EDITOR

LEŠČINSKIENĖ Danguolė – Alytus College, Lithuania

EDITORIAL BOARD

KULVIETIS Genadijus – Prof. Habil. Dr., Vilnius Gediminas Technical University, Lithuania

TERESEVIČIENĖ Margarita – Prof. Dr., Vytautas Magnus University, Lithuania

VOLUNGEVIČIENĖ Airina – Assoc. Prof. Dr., Vytautas Magnus University, Lithuania

GEDVILIENĖ Genutė – Prof. Dr., Vytautas Magnus University, Lithuania

MAŽEIKA Dalius – Prof. Dr., Vilnius Gediminas Technical University, Lithuania

MAMČENKO Jelena – Assoc. Prof. Dr., Vilnius Gediminas Technical University, Lithuania

ŠILEIKIENĖ Irma – Assoc. Prof. Dr., Vilnius Gediminas Technical University, Lithuania

TUMASONIENĖ Inga – Assoc. Prof. Dr., Vilnius Gediminas Technical University, Lithuania

EJSMONT Aneta – Dr., Professor Edward F. Szczepanik State School of Higher Professional Education in Suwalki, Poland

SANDAL Jan-Urban – Prof. Dr., Fil. Dr. Jan-U. Sandal Institute, Norway

VAIČIŪNIENĖ Vilhelmina – Assoc. Prof. Dr., Mykolas Romeris University, Lithuania

SLAVICKIENĖ Astrida – Prof. Dr., Aleksandras Stulginskis University, Lithuania

ZAUTRA Rytis – Assoc. Prof. Dr., Alytus College, Lithuania

EDITORIAL OFFICE

Seirijų str. 2, Alytus, Faculty of Information and Communication Technologies, Alytus College, 62114 Alytus, Lithuania, tel. (8 315) 65 012, (8 612) 79 625, fax. (8 315) 79 132.

INTERNET ADDRESS: <http://www.akolegija.lt/>

E-mail: konferencija@akolegija.lt

PUBLISHED SINCE 2012

The journal is abstracted in the international data basis:

Index Copernicus Journal Master List: <http://journals.indexcopernicus.com/masterlist.php> since 2012

All rights of the publication are reserved. No reproduction, copy or transmission of this publication may be made without publisher's permission.

VYRIAUSIASIS REDAKTORIUS

KANKEVIČIENĖ Lina – Doc. dr., Alytaus kolegija, Lietuva

VYKDANTYSIS REDAKTORIUS

BALYNIENĖ Rasa – Alytaus kolegija, Lietuva

TECHNINIS REDAKTORIUS

LEŠČINSKIENĖ Danguolė – Alytaus kolegija, Lietuva

REDAKTORIŲ KOLEGIJA

KULVIETIS Genadijus – Prof. habil. dr., Vilniaus Gedimino technikos universitetas, Lietuva

TERESEVIČIENĖ Margarita – Prof. dr., Vytauto Didžiojo universitetas, Lietuva

VOLUNGEVIČIENĖ Airina – Doc. dr., Vytauto Didžiojo universitetas, Lietuva

GEDVILIENĖ Genutė – Prof. dr., Vytauto Didžiojo universitetas, Lietuva

MAŽEIKA Dalius – Prof. dr., Vilniaus Gedimino technikos universitetas, Lietuva

MAMČENKO Jelena – Doc. dr., Vilniaus Gedimino technikos universitetas, Lietuva

ŠILEIKIENĖ Irma – Doc. dr., Vilniaus Gedimino technikos universitetas, Lietuva

TUMASONIENĖ Inga – Doc. dr., Vilniaus Gedimino technikos universitetas, Lietuva

EJSMONT Aneta – Dr., Profesoriaus Edvardo F. Ščepaniko valstybinė aukštojo profesinio mokymo mokykla, Lenkija

SANDAL Jan-Urban – Prof. dr., Fil. Dr. Jan-U. Sandalo institutas, Norvegija

VAIČIŪNIENĖ Vilhelmina – Doc. dr., Mykolo Romerio universitetas, Lietuva

SLAVICKIENĖ Astrida – Prof. dr., Aleksandro Stulginskio universitetas, Lietuva

ZAUTRA Rytis – Doc. dr., Alytaus kolegija, Lietuva

REDAKCIJOS ADRESAS:

Seirijų g. 2, Alytus, Informacijos ir ryšių technologijų fakultetas, Alytaus kolegija, 62114 Alytus, Lietuva, tel. (8 315) 65 012, (8 612) 79 625, fax. (8 315) 79 132.

INTERNETO SVETAINĖS ADRESAS: <http://www.akolegija.lt/>

Elektroninis paštas: konferencija@akolegija.lt

LEIDŽIAMAS NUO 2012 metų

Žurnalas referuojamas tarptautinėje duomenų bazėje:

Index Copernicus Journal Master List: <http://journals.indexcopernicus.com/masterlist.php> nuo 2012 metų.

Visos leidinio leidybos teisės saugomos. Šis leidinys arba kuri nors jo dalis negali būti dauginami, taisomi ar kitaip platinami be leidėjo sutikimo.

WHAT IS SCIENCE?

Viktoriya Gura, PhD

*Affiliated Honorary Research Fellow, Fil. Dr. Jan-U. Sandal Institute, Norway
Taras Shevchenko National University of Kyiv, Ukraine*

Summary

This article is dedicated to explaining the real meaning of such categories as Science and the independent Science, the scientific truth, and the scientific thinking. In addition, it is very important to show the difference between Science and Propaganda, the scientific truth and freedom of speech. It is shown the importance of innovations. There were described challenges of Scientific development.

Keywords: Independent Science, Science, propaganda, scientific truth, freedom of speech, innovation.

Introduction

Human existence and nature are very complicated and various processes, which demand deep analyses for understanding all their features and peculiarities involved. If we know a lot, we can use obtained knowledge for critical thinking, better understanding different processes and, of course, for improving Science. An individual, which has good knowledge, can think independently and objectively. In addition, the person is able to produce new ideas. It means that Science is born in clear minds with big volume of knowledge, skills and experience.

In this article, following issues will be presented and analyzed: Differences between Science and Propaganda, How Science is made, and Challenges of Scientific development. Each subtitle will have discussion with comments and conclusion.

Methods, which will be used during research: presentation of relevant thoughts in accordance with the research topics, analyzes of information, synthesis of achieved results and conclusions.

There are challenges in this scientific work. Firstly, it is very important to define and describe the meaning of such categories as Science and Propaganda, and to show the difference between them. Secondly, to analyze the historic prerequisites of development and diffusion of scientific results. Thirdly, to explain the process of the independent Science, and to describe features of the independent thinking. Fourthly, to depict the freedom of speech and the scientific truth, and to outline importance of independent individual thinking for creating Science. Fifthly, to find out how Science and innovation are interconnected, and to show their influence on nature and the social system.

Differences between Science and Propaganda

In the modern society, there are both Science and Propaganda. These two categories completely differ from one each other. Science presents only the scientific truth, which is the result of an independent scientific process.

According to the definition which is given in the Cambridge dictionary, "Science is knowledge from the careful study of the structure and behavior of the physical world, especially by watching, measuring, and doing experiments, and the development of theories to describe the results of these activities: pure/applied science; recent developments in science and technology" (Cambridge dictionary, 2017-01-05).

In the Oxford dictionary, "Science is explained as the intellectual and practical activity encompassing the systematic study of the structure and behavior of the physical and natural world through observation and experiment" (Oxford dictionary, 2017-01-05).

"Contemporary science is typically subdivided into the natural sciences, which study the material universe; the social sciences, which study people and societies; and the formal sciences, which study logic and mathematics. The formal sciences are often excluded as they do not depend on empirical observations" (The Branches of Science, 2008). "Disciplines which use science, like engineering and medicine, may also be considered to be applied sciences" (Scientific Method: Relationships among Scientific Paradigms, 2007).

Propaganda contains information, which is given by the different kinds of politicians and authorities. This kind of information is a result of political decisions. "Propaganda is often associated with the psychological mechanisms of influencing and altering the attitude of a population toward a specific cause, position or political agenda in an effort to form a consensus to a standard set of belief patterns" (Smith, 2016).

Political decisions in a democracy is based on giving votes. The difference between voting and judgmental based decision-making is that the latter takes in account objective facts and the other is usually grounded on promises to the voters proclaimed by the politicians. Corruption also plays a significant part of

the decision-making system in the democracy. The relative power of the ruling party might play an important role in the decision-making process, especially when the will of the ruling party differs from the will of the people. In all these cases information given by the political system, governments and authorities represents the Propaganda, but some interested groups and companies can also promote their own Propaganda. It is often used to disseminate data that is convenient for ruling and influencing the society.

“Propaganda is information that is not objective and is used primarily to influence an audience and further an agenda, often by presenting facts selectively (perhaps lying by omission) to encourage a particular synthesis or perception, or using loaded messages or “loaded language” to produce an emotional rather than a rational response to the information that is presented” (Smith, 2016).

“In the 2010s, the term propaganda is associated with a manipulative approach, but propaganda historically was a neutral descriptive term. Propaganda is a modern Latin word, the gerundive form of *propagare*, meaning to spread or to propagate, thus Propaganda means that which is to be propagated. Originally this word derived from a new administrative body of the Catholic Church (congregation) created in 1622, called the *Congregatio de Propaganda Fide* (Congregation for Propagating the Faith), or informally simply Propaganda. Its activity was aimed at “propagating” the Catholic faith in non-Catholic countries. From the 1790s, the term began being used also to refer to propaganda in secular activities. The term began taking a pejorative or negative connotation in the mid-XIX century, when it was used in the political sphere” (Diggs-Brown, 2011: 48).

Propaganda can be found in different sources of information. Usually it is presented on the official websites of government ministries, institutions and authorities. It can be used also by local level of power and organizations. Moreover, wide ranges of contemporary tools are actively used to disseminate Propaganda. They are social networks like Facebook, Twitter, and different kinds of modern paintings, cartoons, posters, pamphlets, films, radio and TV shows. Science is not so widely presented as Propaganda. It can be found in some scientific, universities journals. Sometimes the results of scientific researches are possible to hear at conferences, round tables, summits etc.

Requirements of Science will be that it is not taking place in a production function, it is not labor, and scientist does not receive any economic benefits. It is important to explain the meaning of such categories as production function and economic benefits like, for example, salary. Production function is an analytical tool of land, labor and capital. According to Joseph A. Schumpeter's theory innovation is a new combination only of land and labor, not comprising capital. The entrepreneur, the creator of innovation is not taking part in the production function neither as a capital owner nor as a wage earner. His position is outside the production function. His only economic benefit will be the entrepreneurial profit, which occurs as a result of a successful entrepreneurial activity. The entrepreneur is not a wage owner, is not working for any kinds of economic benefits like a worker. He is in charge of whole process, making judgmental and independent decisions on a free and non-salaried basis.

Science is an Independent process like the entrepreneurial innovative process. Moreover, like the entrepreneurial process, the scientific process requires personal capacity that means using different talents, skills, abilities and knowledge by the individual. Therefore, three levels of thinking are used in the scientific process: independence, knowledge and experience. We can understand the implementation of independent thinking, received knowledge and obtained experience in the next five examples.

Example 1. Socrates (died in 399 B.C.) (Joshua, 2009). Socrates was an independent philosopher, who lived in Ancient Greece. He showed his attitude to different things and events in the environment. He had many followers, because he was a unique person and expressed his scientific thoughts. The consequence was that the government accused him for destroying and misleading the youth. Finally, he was convicted by the court and had to face death penalty, drinking a cup of poison.

Example 2. Aristotle (384-322 B.C.) (Joshua, 2009). Aristotle was also an independent philosopher in Ancient Greece; he did not work for or represent anyone, but only himself. He had knowledge, which could afford him to explain his points of view and thoughts on different topics. Moreover, the society listened to him very attentively as he was a real authority.

Example 3. Diogenes (404-323 B.C.) and Alexander the Great (356-323 B.C.) (Joshua, 2014). Alexander the Great, the Emperor of the entire world once met Diogenes of Sinope, the Greek philosopher, in 336 B.C. and tried to corrupt the independent Science, by letting the philosopher have a free wish. Diogenes gave his famous answer: “stand out of my sun”. It means that Alexander the Great wanted to concur everything in the world even the Science, but Diogenes could not be bribed by money or wealth. Diogenes showed the Emperor that it is impossible, because Science is an independent process and cannot be controlled by anyone or any power structure.

Example 4. Adam Smith (1723-1790) (Blenman, 2016). Adam Smith was famous for his describing and proving of such statements that independent thinking and skills cannot be inherited. They belong to certain individuals. In addition, and according to his statements it is important to develop oneself as a person, because that will guarantee material goods and a better life. Adam Smith's definition of good life equals material goods,

intellectual and moral excellences of character.

Example 5. Joseph A. Schumpeter (1883-1950) (Sandal, 2003). Joseph A. Schumpeter explained that innovation is an independent process, which changes the world. Innovation means that it is possible to do something, which previously was not possible to do or at least so efficiently or economically. The innovation process implies that individuals are able to do abstract thinking and therefore they can come up with solutions that the world has not seen yet. Innovation is the process of creating the frameworks of the world still to be presented.

From these examples it is necessary to clarify that abstract thinking were used by all famous individuals for the demonstration of their independent and clear minds, obtained knowledge, which can be used for creating unordinary ideas, and to gain experience that allow them to make conclusions from a variety of events and processes.

Discussion with comments

Science and Propaganda are exist in society as two completely different processes, but the second one is often use the results of the first to manipulate people's thoughts and will. Consequences of these two categories are such that both are independent from one each other; serve to society, but in their special ways. Scientists use their own knowledge, experience and skills. Propaganda is based on information that is given from ruling party or engaged authorities. Science is out of the political system. Propaganda is the part of the government. Science can create independent thinking which can be used by Propaganda either from positive or negative positions.

Conclusion

1. Science is an independent process, which can change the development of the whole society. It is born in the minds of intellectually progressive individuals.
2. It takes place in different spheres of the social system.
3. It completely differs from Propaganda as it is based on independent, abstract thinking and intellectual capacity, and presents only the scientific truth.
4. Science is not a kind of physical work and does not receive economic benefits, but it creates conditions for further improvements and implementations for rising effectiveness or developing other processes.

How Science is made

For making Science, we must think: "Cogito ergo sum". It is Latin, philosophical proposition by Rene Descartes (1596-1650) (Skirry, 2017-01-06), usually translated into English as "I think, therefore I am". It means that we live, not only exist in this world. We can see, hear, feel and think, enjoy etc., which explain the nature of human being. An individual has an independent choice how to live in this world. Of course, many factors such as family, religion, traditions, culture, friends, society, country ideology and propaganda influence on him or her, but everyone conducts his or her life path. Some people prefer to live ordinary life with certain set of goods and services. Some persons choose an ambitious way of living and try to achieve high aims. Moreover, the unique individuals are addicted to completely unknown experiences, knowledge and way of thinking for creating new ideas and thoughts in their bright minds. This explains the process of making Science. Nevertheless, there are two categories: Science and the independent Science.

Science is a method of production in the government universities or in private institutes and in the laboratories of big companies. In these cases, scientists are given tasks for solving, problems or issues for finding new solutions, which are related to the interests of governments or businesses. In addition, their scientific work are funded, and the personnel are salaried. This kind of Science is what is meant by research. Research is a word that consists of re- and search. It shows the process of Science – to do search again. Through history, these categories have been mixed. Science and research are understood as the same process and used as synonyms. Moreover, in governmental, classical universities and real business we can use these categories like synonyms, because they have common context. Scientific or research processes acquire a lot of time and expenses. For this reason, it is obvious that it is in the interest of the principle as well as salaried researches and scientists to make long lasting experiments and research programs. One of the consequences is that this kind of activities only brings changes by small steps.

At the same time, the independent Science deals with completely free, unforced by someone or any governmental structure or business interests, it is a volunteering activity and only based on intellectual thinking. The independent scientists create something new, which previously did not exist. The independent Science are born in individual's mind as a response of the question: "I think, therefore I am". People, who think in such a way, are special. They have their own specific opinion and vision about different processes and things. There

is one important moment, and that is the fact that independent scientists have nothing to do with government or private business commands. They are free in their will to create science and make independent scientific processes. The process of the independent Science contributes to innovations, which in turn transform nature and society, because it proposes results of new and unknown previously thinking.

For better understanding the difference between Science and the independent Science it is necessary to analyze details from the background of the scientists, and explanations from history for better understanding the role and importance of scientists. The significance of the development of the individual shows the opportunities for further improvement of Science and the independent Science. It means that through ages it has been parallel tracks of Science and the independent Science. Firstly, the Enlightenment period was a step stone for the development of both categories, because it was the time of quick increase and diffusion of innovations and small step changes in Europe. At the same time, the spreading through Europe took part in two different directions, the Western Europe with a relatively quick expansion, and the Eastern Europe characterized by a relatively slow development. Moreover, the border between West and East Europe was based on the River Elba in Germany. The main explanations of the diffusion of the Enlightenment in West Europe are 1) strong and wealthy cities, 2) relatively short distances between cities, 3) comparatively good transportation infrastructure, 4) heavily density of population, 5) people were relatively more educated, and used to technological changes.

The main explanations of the diffusion of the Enlightenment in Eastern Europe are 1) comparatively small and poorer cities, 2) long distances between cities, 3) relatively undeveloped transport infrastructure, 4) the Church and the kings influenced a lot and 5) Russia was the last country to abolish feudalism in 1861.

There are three main points as a result of the French Revolution in 1791, which contributed to the Enlightenment period. They are liberty, equality, brotherhood. Liberty means that a person can independently think and make analyzes. Equality offers to each individual opportunities for further development and improvement. Everyone can have a free choice of what she or he is going to do or create. Brotherhood means peaceful and friendly coexisting in the community. It also represents respect for everyone's life and freedom of point of view, openness for help and cooperation.

The Enlightenment period expended the movement for academies as institutions of scientists and their followers. It is interesting to mention that in the ancient time academy took place and was a meeting under a green tree in the Greek polis. Moreover, this movement formed many scientific schools in different spheres of Science. From the XVIII century until now, the independent Science has contributed to the creation of numerous innovations that improved and changed the social system. Nevertheless, it is correct to divide real innovations and small step changes. For a better understanding, examples with researcher Isaac Newton and scientist Albert Einstein can describe in an eminent way the distinctions between innovations and small step changes.

Example 1. Isaac Newton (1643-1727): small step changes. Isaac Newton said: "If I have seen further than others, it is by standing upon the shoulders of giants" (Biography.com Editors, 2017-01-06). It is true that in reality his research was based on previous knowledge and experience of other scientists. Isaac Newton is an example of scientific development grounded on small step changes. He was a dependent scientist who worked for salary and took orders from his superiors.

Example 2. Albert Einstein (1879-1955): independent scientist (Biography.com Editors, 2017-01-06). Albert Einstein was a real independent scientist as he had thoughts and hypotheses, which were unique and were not based on previous knowledge. He created his theory of relevance in ordinary conditions as he worked in absolutely another sphere. In his four groundbreaking papers (1905) which contained the results of his intellectual thinking and scientific conclusions there were no references, because no one before him had made that kind of independent thinking.

It is very important for scientist's development to live and work in that kind of society, which is ready to accept and understand innovations. In every society innovations and independent science can occur, because they are in the minds of the scientists. Innovations, like the independent Science, might be objects of hindrances due to the political situation.

In a historical view, we know that Copernicus' theory was much ahead of his time, and the society (that Church) did not accept it. In addition, Darwin waited 18 years before publishing his theory of human evolution, because he understood that society was not ready for his ideas.

Discussion with comments

It is an actual topic to find out the difference between Science and the independent Science. Science as a process of research deals with demands of governments and businesses. The main aim is to solve problems based on economic benefits. In addition, scientists as researchers also achieve different kinds of benefits like glory, awards and high salary. At the same time, the independent scientists represent totally another

kind of individuals, whose goals are to prove the scientific truth, to accomplish completely new experiences, knowledge and thinking. The independent scientists demonstrate primarily a process of intellectual and independent thinking, which is in their minds and does not require any economic benefits, inputs or motivation. Moreover, the obstacles strongly influence at Science and the independent Science development. It is a well-known fact that our living determines our consciousness. That is why through the history we can observe many examples of Science and the independent Science results. In addition, the expansion of innovations and small step changes were disseminated in different societies in their own quick or slow way. Social systems in earlier times were not ready to receive innovations, and some scientists had to wait for a proper moment to present their thinking or results, and some were even sentenced to death due to their ideas, which had the capacity to change the contemporary way of thinking and understanding the processes of nature.

Conclusion

1. The independent Science and scientists can evolve in every society, but the diffusion of their Science depends on different obstacles: mentality, culture and religious peculiarities, transport infrastructure, population density etc.

2. Through the history, we can find many examples of innovations and small step changes, which shows that we must be ready to accept new, previously unknown knowledge, experience, thinking, because they are driving forces of development.

3. Real scientists are unique individuals who do not think in ordinary ways. They are agents of development, strong and independent individuals active outside of the production function.

Challenges of Scientific development

Challenges are something, which demands physical and intellectual forces to solve in a successful way. Challenges of Scientific development are concrete decisions of solving issues in a proper way of nature and social character. The nature was created many years ago by higher energetic forces and it is a very huge and complicated process. People are the important part of the nature. Humans live and cooperate with the nature in various activities. Moreover, societies get everything from the nature. That is why Science appeared as a response for describing, explaining and conducting completely new knowledge, experience and thinking about the world.

Freedom of speech is entirely irrelevant to Science. Freedom of speech concerns the right of the individual to express political, economic, social, cultural and religious ideas within certain limitations. It is just points of view. The independent Science process presents the scientific truth, which by nature is a higher level and more important than individual needs for expressing ideas and feelings in the political system.

Freedom of speech is relevant in a political context. While the scientific truth is only relevant in the scientific context. The scientific truth has the potential to change the political basis. The next example analyzes freedom of speech in a historic context. In the XVI century, the Roman Catholic Church presumed to be in authority over private thoughts and opinions, and suppressed views that went against its doctrines. At that time, governments and the Church encouraged printing in many ways because it allowed the dissemination of Bibles and government information. But amongst others it banned or censored books written by René Descartes, Giordano Bruno, Galileo Galilei, David Hume, John Locke, Daniel Defoe, Jean-Jacques Rousseau and Voltaire, which also could circulate rapidly. Consequently, governments established controls over publishers across Europe, requiring them to have official licenses to trade and produce books (Castillo, 2010).

As we see, the independent Science has the potential to widen the borders of freedom of speech. The Science will change the political life when it is introduced in the society. That is why the scientific truth can help to distribute results of both Science and the independent Science, and introduce innovations.

The independent Science comes from nature, as it is a part of nature. One example will be that the person does not think how to breathe. This physiological process is going automatically; obviously, nature has its own process.

The next actual challenge of scientific development is the difference between certainty and science. Certainty means that we know some obvious things about specific topics. Moreover, knowledge about them has existed for a long time. Meanwhile, the scientific process not always deals with certain evidences and results, because we do not have knowledge about them yet. At first, we cannot accept this new approach, because we lack enough information, but later, after receiving arguments, we are able to approve the scientific truth as new knowledge, experience and thinking. We can, or cannot compare it with previous results. In addition, of course, for the mainstream, the main reasons are where the scientific truth can be used or applied, and what the expected benefits will be. "The philosopher of science, Karl Popper, sharply distinguished truth from certainty. He wrote that scientific knowledge "consists in the search for truth," but it "is not the search for

certainty"... All human knowledge is fallible and therefore uncertain" (Popper, 1996: 4).

When there is completely new knowledge, experience and thinking, it can be improved and transformed into innovations, and when there is some modified and extended knowledge, experience and thinking, we rightfully can name it small step changes. This modification between innovations and small step changes also can be the next challenge of scientific development as they both transform the social system, but in different scales and sizes.

Innovations can be based on recent knowledge, experience and thinking. The independent scientists create new approaches for understanding the processes in nature. Meanwhile, the researchers usually collect information, conduct experiments and try to improve or synthesis obtained results. Definitely, all new or improved outcomes must be grounded on strong arguments. Later it will be the process of presentation to scientific and public authorities. In addition, it is very important to show the results in proper and understandable way, as there is a high level of possibility that it cannot be accepted or approved. The significance of science and the independent science is to explain and show the importance of achieved results. Of course, the final aims of these categories are different, but they both have a common feature to bring new understanding on changes and functions of nature and the social system.

Meanwhile, the results of Science modify society and can make it more convenient. We must describe a symbol of Science. What is it? For example, a hat of the doctor degree.

When the Humboldt system (Berglar, 1970) was established in Berlin in the beginning of the XIX century the attitude to Science was changed dramatically. Previously, the master degree had been the highest one, now the doctor degree became the highest. During that period, the Science was relatively independent and had a significant position in the society. The contemporary elite understood and supported the independence of science as a relevant development strategy for the society. In addition, the symbol of the hat of the doctor degree indicated that there was no person, religion or political power in the world on the top of scientist's head.

Science explains how the nature is functioning. Usually people occupy their lives with day-to-day based activities and thinking, and have no or limited opportunities to think about topics which are not relevant for their daily lives. Moreover, the main difference between nonscientists and independent scientists is that the latter wants to find and explain the scientific truth.

Discussion with comments

Challenges of Scientific development contribute to increase productivity and efficiency as they stimulate different scientific processes. Challenges of Scientific development show the vast role of Science and the independent Science for better understanding and exploring nature and society's possibilities. The independent Science has the capacity to influence and improve such a process as freedom of speech, because the scientific results are able to change the political life by presenting innovations to the society. The next challenge is the difference between certainty and science, which show the most significant part of the independent Science as the scientific truth. It can be, or cannot be accepted, but in the future, the scientific results might be evidenced and presented. Its diffusion shows innovations that influence on the social system. Also small step changes take place in the scientific process and are conducted by researches. Nevertheless, there is a symbol, which show the important role of the independent Science, the doctoral hat. This hat emphasizes the highest level of knowledge, experience and thinking and there is no one, or any power structure on the top of the independent Science.

Conclusion

1. One of the most important challenges of scientific development is that the scientific truth presents a result of independent knowledge, experience and thinking.

2. Such category as freedom of speech expresses individuals' points of view. The independent Science has the potential to extend the borders of freedom of speech, because it deals with the scientific truth based on the scientific context.

3. For the independent scientists the main issue is to find out and improve their previously unknown statements, not certain knowledge. That is why searching of the scientific truth acquires many efforts and bright thoughts.

4. The independent Science is very important, because it deals with the scientific truth that can change our existence. No forces or authorities are able to influence the scientific processes.

General conclusion

Processes of creating Science and the independent Science have some common features and many uncommon. Common feature is that representatives of both try to obtain new knowledge, experience

and thinking. The uncommon features are that scientists or researchers do their job, which is motivated by economic benefits; get different tasks to solve and issues on behalf of governments or businesses. Meanwhile, the independent scientists are free in their choice what to do or create. Their driving force is to find answers on questions, which disturb and interest only them. The independent scientists are not economically motivated. They just want to prove their ideas and show that they are right and function. That is why scientists produce small step changes and the independent scientists create innovations. These small step changes and innovations are capable to improve social system in many spheres. Nevertheless, the independent Science is on top of the social system. It is the highest level of knowledge, experience and thinking.

Also in the modern societies, Propaganda exists as a powerful instrument of influencing on people's way of thinking and their consciousness. Nowadays, thanks to technological possibilities of presenting and spreading information, the interested people or authorities can disseminate different kinds of data more quickly than previously and in much bigger scales, which is convenient to them. The independent Science deals with the scientific truth and then its results are displayed to scientists and to the society.

Five various examples from the history about famous persons describe that the real scientist is a free and independent individual, who has the ability of abstract thinking and can create new ideas. Historical events and time conditions influence a lot on individual's perception of nature and society, but the independent scientists are able to produce new thoughts and ideas despite many obstacles. However, the diffusion of the scientific results can be quick or slow according to the society's level of development, and depends on the appropriate moment of presentation.

When analyzing challenges of scientific development, it is necessary to emphasize such categories as freedom of speech and certainty. Freedom of speech are permitted in some countries and are prohibited in another's. Freedom of speech is irrelevant for the Science and the independent Science, but the scientific truth can modify and change the way of expressing the people's points of views, feelings and attitudes to different things and events, which take place in the social system.

Certainty is our understanding of many known and general facts. In the same time, the scientific truth of the independent scientists gives possibilities to be acquainted with new knowledge, experience and thinking, which are capable to transform people's consciousness and improve the social system. Innovations as results of intellectual thinking can change many certain knowledges, which explain the significant role of the independent Science like the symbol of doctoral hat that means the free will to do intellectual work without any guidance from any power structures.

List of references

1. BERGLAR, P. (1970). Wilhelm von Humboldt. Rowohlt, Reinbek. ISBN 978-3-499-50161-6.
2. BLENMAN, J. (2016). "Adam Smith: The Father of Economics": <http://www.investopedia.com/updates/adam-smith-economics/> 2017-01-05
3. CASTILLO, A. (2010). Banned Books: Censorship in Eighteenth-Century England. GRIN Verlag. ISBN 978-3-640-71688-3.
4. DIGGS-BROWN, B. (2011). "Strategic Public Relations: Audience Focused Practice". Wadsworth Cengage learning. ISBN-13: 978-0534637064
5. POPPER, K., R. (1996) [1984]. "In search of a better world: lectures and essays from thirty years". - New York, NY: Routledge. ISBN 0-415-13548-6.
6. SANDAL, J-U. (2003) "Jakten på Etreprenøren". - Stockholm, Sweden. ISBN 91-22-02020-9
7. Biography.com Editors "Albert Einstein Biography": <http://www.biography.com/people/albert-einstein-9285408/> 2017-01-06
8. Biography.com Editors "Isaac Newton Biography": <http://www.biography.com/people/isaac-newton-9422656/> 2017-01-06
9. Cambridge dictionary. "Science": <http://dictionary.cambridge.org/dictionary/english/science/> 2017-01-05
10. Editorial Staff (2007). "Scientific Method: Relationships among Scientific Paradigms". Seed Magazine. Retrieved September 12, 2007.
11. Editorial Staff (2008). "The Branches of Science". South Carolina State University. Retrieved October 28, 2014.
12. Joshua J., M. (2009). "Aristotle": <http://www.ancient.eu/aristotle/> 2017-01-05
13. Joshua J., M. (2009). "Socrates": <http://www.ancient.eu/socrates/> 2017-01-05
14. Joshua J. Mark (2014). "Diogenes of Sinope": http://www.ancient.eu/Diogenes_of_Sinope/ 2017-01-05
15. Oxford dictionary. "Science": <https://en.oxforddictionaries.com/definition/science/> 2017-01-05
16. Skirry, J. "René Descartes": <http://www.iep.utm.edu/descarte/> 2017-01-06
17. Smith, B., L. (2016). "Propaganda": <https://global.britannica.com/topic/propaganda/> 2017-01-05

Anotacija

KAS YRA MOKSLAS?

Mokslas yra labai sudėtingas žmogiškojo abstrakčiojo mąstymo procesas. Per šimtmečius jis tapo

mokslu / moksliniu tyriminiu darbu ar nepriklausomu mokslu. Pagrindinis skirtumas tarp šių dviejų kategorijų atspindi tame, kam šis mokslas skirtas. Mokslininkai ar tyrėjai sprendžia užduotis, reikalingas vyriausybei, valdžios institucijoms ar verslui. Nepriklausomi mokslininkai nori sužinoti mokslinę tiesą ir dirba niekieno neraginami, vedini savų interesų. Mokslininkai ar tyrėjai juda nedideliais žingsniais, siekdami pagerinti socialinę sistemą. Tuo tarpu nepriklausomi mokslininkai kuria naujas idėjas, kurios kartais virsta inovacijomis, galinčiomis pakeisti socialinės sistemos procesus. Daugelį metų propaganda buvo naudojama skirtingose visuomenėse informacijos sklaidimui ir buvo naudinga valdžios institucijoms. Propaganda suteikia galimybę skelbėjams valdyti žmonių protus ir mintis. Nepriklausomas mokslas socialinę sistemą veikia priešingai. Jo pagrindinis tikslas yra pristatyti mokslinės tiesos rezultatus. Esmė tame, kad žmonės turi būti pasirengę priimti naujas žinias, patirtį ir mąstymą. Būtent todėl labai svarbu tinkamu laiku ir tinkamu būdu pateikti naujas idėjas. Nepriklausomas mokslas egzistavo per istoriją visą laiką, tačiau jo rezultatų sklaidai trukdė įvairios kliūtys ir politinės sistemos. Pastaruosius tris šimtmečius galima laikyti sparčiu naujų žinių, patirties ir mąstymo sklaidos periodu, kadangi daugelyje visuomenių vystėsi demokratija ir augo technologijų diegimas visose socialinės sistemos srityse. Žodžio laisvė taip pat daugeliu aspektų tapo labai populiari, tačiau tai tik tam tikras požiūris į skirtingus dalykus, procesus ir įvykius, galimus įvairiai apibūdinti. Tuo tarpu mokslinė tiesa yra nepriklausomo mąstymo, atspindinčio naujas idėjas, rezultatas. Be to, socialinėje sistemoje egzistuoja tam tikros žinios apie didžiulį kiekį procesų, įvykių ir požiūrių, nereikalaujančios įrodymų. Svarbu, kad socialinėje sistemoje būtų suprantami mokslo ir nepriklausomo mokslo rezultatai.

**AUKŠTŲJŲ MOKYKLŲ VAIDMUO VISUOMENĖJE:
IŠŠŪKIAI, TENDENCIJOS IR PERSPEKTYVOS**

Mokslo darbai

Nr. 1 (6)

**ROLE OF HIGHER EDUCATION INSTITUTIONS IN SOCIETY:
CHALLENGES, TENDENCIES AND PERSPECTIVES**

Academic papers

Nr. 1 (6)



2017

Editor – in – chief Kankevičienė Lina

Executive editor Balynienė Rasa

Technical editor Leščinskienė Danguolė

Alytus College, Faculty of Information and Communication Technologies, Seiriju str. 2, 62114 Alytus,
Lithuania

Internet address: <http://www.akolegija.lt/>, E-mail: konferencija@akolegija.lt,

tel. (8 315) 65 012, (8 612) 79 625, fax. (8 315) 79 132.

Vyriausiasis redaktorius Kankevičienė Lina

Vykdantysis redaktorius Balynienė Rasa

Techninis redaktorius: Leščinskienė Danguolė

Išleido Alytaus kolegija, Informacijos ir ryšių technologijų fakultetas, Seirijų g. 2, 62114 Alytus, Lietuva

Interneto svetainės adresas: <http://www.akolegija.lt/>, Elektroninis paštas: konferencija@akolegija.lt,

tel. (8 315) 65 012, (8 612) 79 625, fax. (8 315) 79 132.