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Published in the Slovak Republic
European Journal of Technology and Design
Has been issued since 2013.
E-ISSN: 2310-3450
2020, 8(1): 33-37

DOI: 10.13187/ejtd.2020.1.33
www.ejournal4.com

Formation of the World Picture

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Abstract

The article describes model of formation of the picture of the world. It is shown that every individual has personalized picture of the world. Personalized picture of the world is being formed as the objective necessity of development. The article notes that there are three pictures of the world: scientific, everyday world picture and personalized. Personalized picture of the world is formed by education. Personalized picture of the world is approaching the everyday picture of the world on the stage of training. Personalized picture of the world is approaching a scientific picture of the world at the stage of research. Personalized picture of the world can surpass the scientific picture of the world, which is the basis of development.

Keywords: knowledge, cognition, world view, a model picture of the world, scientific picture of the world, the everyday world picture.

1. Introduction

Picture of the world is one of the fundamental concepts in science. World Pictures have different forms of implementation. There is a scientific picture of the world. There is a picture of the world, which creates a person in everyday life. This picture of the world can be called the application view of the world (Lektorsky et al., 2014) or everyday picture of the world. There are qualitative differences between the scientific world and the application view of the world. The scientific picture of the world has a lot of implementations: general scientific picture of the world, world separate science and other. General scientific picture of the world is built as the system of knowledge, including the synthesis of scientific theories and scientific directions.

General scientific picture of the world includes and synthesizes the picture of the worlds of separate sciences. Many science: psychology (Zinken, Joerg, 2004), education (Tsvetkov, 2014a), quantum mechanics (Sukhanov, 2005) and others are exploring the construction of the world picture. The scientific picture of the world is not the body of all the knowledge on objective world. It is the integral system of main concepts regularities of current reality at the present moment. The development of science creates a lot of models and methods for the construction of a scientific picture of the World.

Periodically, there are contradictions between the new research findings and old ideas belonging to the scientific picture of the world. This situation requires a new systematization of knowledge, forming a picture of the world. Most of the work in this area describes the result of knowledge – the picture of the world. Little attention is paid to the process of forming a model picture of the world.

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2. Materials and methods

The material used for the publication of the formation of the world picture.

The used systems analysis, epistemology, qualitative analysis as a method.

Theory

General picture of the world is being built on the unity and variety of different disciplinary studies. It is realized on disciplinary and interdisciplinary levels. In contrast to this, education is being built as part of the subject system. Education is not aimed at creation of integral picture of the world, it is aimed at teaching the profession within the groups of disciplines.

Attention should be paid to the following. A human uses high information technologies in scientific investigations. That's why today the role of information technologies and approaches including the picture of the world building increases. Statistics records information growth. New IDC Digital Universe study (Gantz, Reinsel, 2011) finds world's data is doubling every two years – growing faster than Moore's Law (Schaller, 1997).

The scales and intensity of information interaction (Tsvetkov, 2013) increase. This creates big data problem which prevent the uptake of growing flow of information. Current branches of information industry grow actively and become global and new branches are being formed. The information component of economic activity of market entities as well as influence of information technologies on scientific-technical, intellectual potential and nation's health significantly increases.

Information component of the society is the basis of development. It reflects the application view of the world. The applied value of informatics and information technologies consists not only in information processing but also in the fact of how human and social picture of the world develops. The scientific value of informatics and information technologies in the sphere of scientific investigations consists in correspondence of the used model of human living environment. The instruments of use of information technologies at building picture of the world are information models.

The picture of the world in informational concept is the complicated compound information construction (Tsvetkov, 2014b). The basis for building simple and complex information constructions is information units (Kratzer, 2002; Tsvetkov, 2009).

Information technologies are the mediator useful for analysis and generalization of information. Human is the creator of picture of the world. The scientific world cognition consists of different components, of which the following should be pointed out:

- cognitive actions of a human, which leads to the creation of new concepts, principles, theories, models, methods;
- practical actions of a human which leads to the creation of computer-aided productions, i.e. the process of implementation of scientific investigations;
- generalization of accumulated experience which allows to form world models that correspond to the achieved level of scientific development and cognition of surrounding world;
- acquiring new knowledge in the process of education and self-education.

Utilitarian approach studies education as the total of processes of acquiring knowledge for further professional activity. However due attention is not paid to the building of picture of the world as the task of education. At the same time the system of education plays an important role in formation of picture of the world. However it is oriented not to the building of integral picture of the world, but to the formation of picture of the world of separate scientific studies within learning trades. Correspondingly it has a differential impact on formation of social-personal picture of the world.

Person of society must imagine world, i.e. he must be able to build and use picture of the world models. This means that professional specialist must have his own picture of the world as the basis for professional and social activity. However modern education doesn't teach to build picture of the worlds and a specialist has to use his own methods and intellect for creation of picture of the world.

The picture of the world model under the modern conditions needs the use of information constructions and information models. That's why the picture of the world model can be considered as a complex information construction which includes elementary integrative models.

Any modern information construction includes different information units as the basis (Kratzer, 2002; Tsvetkov, 2009). These information units are different in their purpose.

For example, the information construction is filled with content while using semantic information units. This is the objective way of picture of the world model building.

General picture of the world does not exclude the existence of personified picture of the worlds which are built by the separate subject during analysis and cognition of surrounding world. These personified picture of the worlds are significantly different depending on intellect, amount of knowledge, mindset, mentality, traditions and other factors. This is the subjective way of picture of the world model building. That's why the world model built by a separate person is called the naive model.

The method of building such picture of the world is often based on the analysis of an individual position in the information situation (Tsvetkov, 2012) in which he finds himself. In the process of cognition of the world and creation the model or picture of the world one can be lack of descriptive means of the subject. This situation characterises the so called the semantic gap (Snider et al., 2001). In the simplest situation it is characterised by the lack of language means for description of the reality. In the broader sense the semantic gap is characterised by the lack of means of scientific description of the world.

Education allows overcoming the semantic gap of a certain subject. This allows the education to create instruments of picture of the world building of every person. The higher accomplishment is the more corresponding is the personified picture of the world to the scientific picture of the world.

Not only education, but also the picture of the world itself, motivates human for different actions including the increase of the education level or get additional education. Perception of the external world is performed by a person by means of the use of available world model, information about the external world and used instruments of cognition.

3. Discussion and results

Such approach gives us grounds to show the basis for constructing a model of the world in the form of expression (1).

$$F\{I(t_{i-1}), PW(t_{i-1}), Ex(t_{i-1}), C(t_{i-1})\} \quad (1)$$

$I(t_{i-1})$ is previous information about the external world, available to a person; $PW(t_{i-1})$ is previous world model; $Ex(t_{i-1})$ is accumulated experience; $C(t_{i-1})$ are instruments of cognition (concepts, theories, methods) acquired on the basis of accumulated experience of studying the world.

$F\{I(t_{i-1}), PW(t_{i-1}), Ex(t_{i-1}), C(t_{i-1})\}$ is the generation functional which describes the way of generation information about the external world on the basis of current data, previous experience, familiar instrument of cognition. This functional depends on the accepted model of the external world and accepted familiar instruments of cognition.

In practice different processes of model building $PW(t_i)$ are possible. These processes are displayed by the expressions (2), (3), (4), (5), (6)

$$F\{I(t_{i-1}) + \delta I, PW(ti_{-1}), Ex(t_{i-1}), C(t_{i-1})\} \rightarrow \quad PW(t_i, \delta I) \quad (2)$$

The process (2) describes the construction of picture of the world based on new information about the outside world (δI), previous experience, well-known tools of cognition.

It leads to a new model PW (t_i, δI). This model of the world-to-date at the moment of time ti. This process describes the updating picture of the world only through the new information. The process (2) is called the actualization process.

There may be situations when it is found out inaccuracy or error in the details of the foregoing picture of the world and make corrections to it. This situation is described by the expression (3).

$$F\{I(t_{i-1}), [PW(t_{i-1})+\delta PW], Ex(t_{i-1}), C(t_{i-1})\} \rightarrow PW(t_i, \delta PW) \quad (3)$$

The process (3) is realized on the basis of accumulated information about the outside world and modification δPW picture of the world by eliminating errors or inaccuracies in the description. Process (3) leads to a new model of the world picture PW (ti, δPW). The process (3) is called the error recovery process. It reflects the well-known in the science of trial and error.

A possible situation where a new experience is accumulated in δEx knowledge. It serves as the basis for the modernization of the picture of the world. This situation is described by the expression (4).

$$F\{I(t_{i-1}), PW(t_{i-1}), [Ex(t_{i-1}) + \delta Ex], C(t_{i-1})\} \rightarrow PW(t_i, \delta Ex) \qquad (4)$$

The process of (4) is realized on the basis of accumulated information about the outside world, previous experience and modification of this experience δEx. It leads to a new model PW (ti, δEx). The process of (4) is called the process of extracting knowledge from experience or transformation process of tacit knowledge

Regularly in scientific research, new tools of cognition δS or improving old methods of knowledge δS. The new tools of cognition are the basis for building a new world view. This situation is described by the expression (5).

$$F\{I(t_{i-1}), PW(t_{i-1}), Ex(t_{i-1}), [C(t_{i-1}) + \delta C]\} \rightarrow PW(t_i, \delta C) \quad (5)$$

Process (5) is realized on the basis of new instruments δC knowledge. New of cognition tools give qualitatively new results. Process (6) is called the process of introducing a new quality in the picture of the world.

Perhaps a radical change (RC) picture of the world, when there is a change of values of the functional F. The new picture of the world due to a combination of changes and is described by the expression (6).

$$RC(PW(t_{i-1})) \rightarrow PW(t_i, \delta I, \delta PW, \delta Ex, \delta C) \qquad (6)$$

Process (6) is realized on the basis of important discoveries, new theories, the information revolution, breakthrough research. Process (6) is called the radical transformation of the world picture. Thus, depending on changes in the functional component can be prepared by converting various models world picture.

Changing the scientific picture of the world causes a change in the everyday world view. Changing the scientific picture of the world motivates change in a personalized view of the world.

It is possible to ascertain the presence of three high-quality pictures of the world: scientific, daily, personalized

Personalized picture of the world is based on the relationship of the individual with the world around them. It can be in different relationships to the scientific picture of the world.

The body of knowledge and human experience motivates him to create a personalized view of the world. Initially, his picture of the world is naive. After graduating personalized picture of the world is close to the everyday picture of the world. Scientific studies bring a personalized view of the world to the scientific picture of the world

Deep research the subject create a personalized view of the world, which is ahead of the scientific picture of the world. This motivates the creation of a new picture of the world in accordance with one of the processes (2-6).

The problem of constructing a scientific picture of the world is related to the issue of the role of personality in history. The person's existence in the world is accompanied by his respond to the perceived and realized information about the surrounding world. This respond is implemented in the cognitive activity, which actualises – explicitly or implicitly – In the picture of the world model, created by an individual person. Naive picture of the world is being built as the respond to the practical human needs – as a necessary cognitive basis of his adaptation to the world. That's why any person in the process of education builds his own naive picture of the world. In the process of education a human creates and approaches his naive picture of the world model to the everyday world picture.

In the process of research person brings a personalized view of the world to the scientific picture of the world. In the process of deep research subject generates a personalized view of the world, which is ahead of the scientific picture of the world

4. Conclusion

There are several pictures of the world, which are interconnected. The world picture is a coherent system of knowledge. Personalized picture of the world of man creates education. Personalized picture of the world with the development of the individual approaches to everyday picture of the world. Personalized picture of the world with the development of the individual approaches the scientific picture of the world, and may it exceed. It contribute to the development of society. Education is the starting point of the formation of the world picture. Education should not only provide professional knowledge, but also to teach the construction of the world picture.

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