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in Gubaidulina's art, including typical traditional aleatoric techniques and non-fixed types of sonorities stipulated by polyarticulating, thus, in the aspects strongly affected by performers. According to the composer, she was profoundly influenced not only by the whole range of Western classical music, but also by Tatar music she heard during her life in Kazan, as well as by archival records from Yava and Bali islands, Yakut and Mongolian folklore, etc. [9] Sofia Gubaidulina justifies her inclination to synthesis by life position consisting in desire «to absorb as much of the existing as possible. <...> Absorb powerful impressions from folklore, books, philosophy, paintings and other sources. And absorb various techniques, even merely composing ones» [10].

### Conclusion.

Rhizomorph in Gubaidulina's compositions is observed on the outer level in the form of polystylistic tendencies, explicit and implicit intertextuality expressed in allusions with other musical texts. The allusion principle is strategic allowing the author to arrange associative bounds with the largest possible number of listeners as any text represents an embodiment of a various texts accessed through connotation.

The non-controversy of arborescent and rhizomorphic processes is revealed after considering Sofia Gubaidulina's art in the aspect of postmodernism theory. Nomadological concept has no assumption of substitution or displacement of the Tree by the Rhizome. Postmodernism deems their interrelations more complicated, as different types of integrity structure – arborescent and rhizomorphic – can be encountered in various systems. Moreover, these structures can penetrate into each other, therefore the Rhizome structure can resemble arborescent (or rooted), however, deep in the tree one can discover the Rhizome. In this case, polyvariety of development in the self-organized environment is found in the structure phenomenon, whereas, rhizomorphe occurs due to heaps of possible musical text interpretations oriented toward listener's perception.

Introduction of Tree and Rhizome notions allowed to expose «West – East» problem in Gubaidulina's art and draw it towards the existential framework. It allowed to discover that the subsurface of the East adheres not to traditional oriental tendencies, but to special rhizomorphic type of integrity that not only opposes her music «westernization» but interacts with the European cultural model of the Tree on complementary basis. This research perspective allows to establish the dialogue of mindsets as means of mutual enrichment in artistic traditions and to determine the unity of East and West in joint musical domain as one of historic missions of Sofia Gubaidulina's art.

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However, it causes a contradiction: according to Gubaidulina, it is the principle of binary oppositions that appears to be the main principle of her musical thinking [6, 34]. Bipolarity as an indication of the art of drama becomes the core of the composition. On the conceptual level, bipolarity can reflect the interaction of two opposing spheres – for example, profane and sacral, personality and crowd, animate and inanimate, etc – and serve as a basis for the dramaturgic development of compositions. On the internal level, this principle is discovered in the differentiation of textural layers into conventional (monody, chordal texture, pseudohomophony) and non-conventional (sonorants).

The genre of drama based on the binary logic principle affected, according to V. Kholopova, all kinds of European arts over several centuries and was a specific feature of European artistic thinking [6, 35].

Thus, Gubaidulina's art is influenced by Western culture, in which postmodernism refers to the tree as the most relevant semantic representation. In the context of postmodern reflection this basic cultural symbol depicts the vertical model of the world semantically expressed in the concept of binary oppositions with both cosmological and axiological characteristics. As the most important component of morphological cosmogonies, the tree symbolises the vertical divide of the World that separates the single space into two parts – Heaven and Earth – endowed with special meanings, system of values and their own semantics. Such a wide range of meanings provides this phenomenon with the meaning of the world's centre, and the tree, according to M. Eliade, invariably claims for the status of a contact point between the immanent and the transcendent [7].

Another perspective on this problem refers to a different postmodern category, *Rhizome*, opposed to the notion of the tree. The term «rhizome» in postmodern philosophy encapsulates «non-linear and above-structural organisation that leaves open the possibility for immanent autochthonic mobility and, hence, for the realisation of its inner, creative, self-configuration potential» [8, 829]. Understood as a «tuber» of «bulb», the Rhizome is interpreted as a potential infinity, implicitly possessing a stem, the development of which is not determined by external causes and can be directed in any way.

Contrary to the arborescence of the Western worldview, the Rhizome connects with the East through postmodernism as with the plain-land culture – the culture of tubers developing separately from an individual. Within this theory, postmodernism interprets any text structure as a complex of anonymous but recognisable «quotations». Each of these cultural lexemes possesses its own inherent meaning and is expressed in its own language requiring a special recognition procedure and each of them can «inter-relate with each other in a form of a dialogue or a parody producing new quasi texts or quasi quotations in the text» [8, 831]. The emerging allusions correspond to the postmodernism's focus on refusal of definitely marked boundaries between the immanent (inner) and the adopted (outer). Such interpretation of the author's text is the result of the rhizomorphic organisation of the entirety.

In Gubaidulina's art, rhizomorphic structures may be hidden behind the interaction of numerous musical styles and traditions. The rhizomorph principle is commonly found

of structuralism with phonism. In the beginning of the 20<sup>th</sup> century, composers' devotion to mathematical modelling methods turned the creative process into operations with computational formulas, whereas the art itself became a logically verified mathematical model. Such speculations resulted in poor acoustics [1] in most cases and caused the loss of communication with the audience. Transition to phonism was to bring back the connection between the sounding of music and its perception by affecting auditory receptors with sound complexes aimed at creating phonic or sound-and-colour effects to trigger various associations and images.

The sound phenomenon subdued the composition structure, which began to be organised «on the basis of the composition's material» [1, 166]. Dependence of the form on the matter caused a joint musical domain to become a place for intuition demonstration, i.e. power determined by composition frames set by the author.

The fact that Sofia Gubaidulina's art follows the aforesaid tendencies is best proved by her own words: «I am an intuitive person; my most important possession is my strong intuition... My power is in my fantasy. From here stems my craving for improvisation, which is absolute freedom. However, I fully understand that the real piece of art cannot be fulfilled if intuition is not opposed to a system of restrictions. This is why the search for restriction means, mental work and intellectual work are very important. Intuition is what was given to me, and the work is set by myself. To achieve a creative result, these two elements should be opposed to each other». [2]

The paradoxical combination of passionate freedom to improvise inspired by a flight of fantasy with «a system of restrictions» expressed in accurate structural principles of composition is explained by Gubaidulina through ethnogenetic synthesis and her belonging to two cultural domains – Eastern and Western [3].

### Research methodology.

This phenomenon is analysed by techniques of postmodernism, a trend initially associated with art rather than science. The relevance of this approach can be interpreted by the peculiarities of the modern artistic domain, where the main condition of existence is the absolute, unconstrained freedom of the author's self-expression, and where any composition contains an immanent equality of the reason and unconsciousness, order and chaos. [4]

### Discussion.

Having established itself as the general theory of the modern art, postmodernism then penetrated all spheres of humanitarian knowledge as a complex of philosophical ideas expressing a unique spirit of time. The nomadological aspect of postmodern philosophy represents a new mentality characterised by abandoning rigid-structure ideas based on binary oppositions and strict determinism [5].

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## MODEL OF PANEL THESE EXPENSES OF HOUSEHOLDS

**Abstract.** *In model of panel data expenses of households are considered. Effective models of expenses of households are offered. Approaches to usefulness measurement are offered.*

**Keywords** – *expenses of households, panel data.*

Economists in the second half of the XIX century put forward two approaches to comparison and a soizmereniye of usefulness of various benefits – quantitative and serial. Practically at the same time English economist Stanley Dzhevons, the Austrian economist Karl Menger (1840-1921) and the Swiss economist Leon Valras offered the quantitative theory of usefulness. At the heart of this theory the hypothesis of possibility of a soizmereniye of various benefits lay. This theory was divided by A. Marshall. However, this theory met serious criticism. The English economist Francis Edgeworth (1845-1926), Vilfredo Pareto and the American economist Irving Fischer offered alternative quantitative the serial theory of usefulness which is now the most widespread. At the heart of models of consumer behavior and demand models of distribution of the income and the usefulness theory lie. We will consider in the beginning models of distribution of the income. At the heart of creation of models of personal consumption the principle of distribution of consumers on groups for which formation are used both data on a social status of families, and data on their income lies. According to this approach all great number of consumers, i.e. the country or region population, is considered as set of several groups of the families, everyone them which it is characterized by a certain level of the income and approximately the identical social status (employees, workers, peasants, etc.). Thus it is considered that each such group possesses some community in a choice and preference of these or those consumer benefits. When splitting consumers into groups on various levels of the income usually use models of distribution of the income of various types. For the characteristic of uniformity of distribution of the income in society Lorentz's so-called curve is often used. It is under construction as follows: all great number of consumers of this country or the region breaks into a quantity of the groups which are usually equal on number, but various according to the income. Then it is counted, what share of the national income is received by each such group, and count is kept, since group with the smallest income towards its increase. The model of distribution of the income, belonging to V. Pareto, is also intended for the analysis of nature of unevenness of the income in society. It is under construction as follows: We will designate through  $I_m$  – the smallest income which the family in this society can receive. Then for the characteristic of relative number of families

(as a percentage)  $N(I)$  gaining income not less, than  $I$ , can be used a ratio: which is modification of a formula of V. Pareto.

The researches conducted in various countries and during the different periods of time suggest that the specified ratio is quite applicable and in that case, so far as concerns the income from real estate and capital investments. Thus an indicator usually is in the range from 1.2 to 2. It is obvious that smaller values correspond to more uniform distribution of the income in society, and high value testifies to sharp differentiation of the income.

Here the AVATARS line correspond to income distribution with  $a = 1.5$ , the EXPERTS and HELL lines to values  $a = 2$  and  $a = 1.2$ .

Splitting into profitable groups in case of  $a = 1.5$  can be executed as follows:

- the first group, has the income from  $I_m$  to  $2I_m$ , consists of 65% of consumers;
- the second group, has the income from  $2I_m$  to  $3I_m$ , includes 17% of consumers;
- the third group with the income  $3I_m$  to  $4I_m$ , it includes 7% of consumers, etc.

Such type of a curve is explained by existence both bottom, and the top limit of earnings; and possibility of receiving a high salary is limited owing to influence of many factors which cumulative influence leads to a quasnormal curve of distribution of the income. Choice of concrete model of distribution of the income and consequently also the way of formation of profitable groups is defined as a result of the analysis of data on the income of consumers in considered society or the region. In a further statement of bases of the theory of consumption we will recognize that the specified formation of groups is made and the great number of consumers is presented as set of  $m$  of groups with numbers  $i = 1 \dots m$ . Thus, as it was already noted above, it is supposed that members of group are rather similar in definition of the preferences, and, therefore, all group can be considered as the uniform consumer in questions of formation of demand for goods and the services acting in the consumer market. Starting point of functioning of any economic system are needs of people. Consumption – process of satisfaction of requirements. The benefit – means of satisfaction of requirements. There is a huge number of the benefits satisfying requirements. Which benefit, and in what quantity it is necessary to make, the consumer defines. In the conditions of market economy production of only such benefits which can be sold at the price exceeding expenses for their production is allowed. Consumers, buying such benefits, estimate work of producers. Each consumer makes the decision independently. It is considered that the uniform scale of an assessment of the benefits doesn't exist. But each consumer has the scale of preferences. Each consumer seeks to choose the set of the benefits most preferable to within the income. This assumption – a hypothesis of rational behavior of the consumer.

If goods or service meet desires and needs of the consumer, they possess usefulness. Usefulness – satisfaction or pleasure derived by the person from consumption of these or those goods or service.

The concept of usefulness studies satisfaction or pleasure derived from possession, use, the use or extraction of benefits from goods or service. Usefulness consists in qualitative characteristics thanks to which they satisfy requirements. It is result of

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## THE MUSIC OF SOFIA GUBAIDULINA IN THE CONTEXT OF DETERMINISM AND POSTMODERNISM AS A SYNTHESIS OF EAST AND WEST

**Abstract.** *This paper is dedicated to the integration of specific Western and Eastern musical tendencies in the art of Sofia Gubaidulina. Paradoxical combination of intuition, spontaneous gust of passion and rational calculations underpin Gubaidulina's creative process and explains her belonging to two ethnic groups and, thus, two cultures – Western and Eastern. This phenomenon is analysed through the perspective of postmodern philosophy interpreting the state of modern art as interpenetration of freedom and reason, chaos and order. A case study of two philosophical notions – the tree and rhizome – acting as semantic associates of Western and Oriental identities is studied as the synthesis of binary opposites which is characteristic of Gubaidulina's art and appears to be one of the indications of Western European Art whereas intertextuality (allusion) is the main attribute of postmodernism. This interaction allows, first, establishing the dialogue of mindsets as the means of mutual enrichment in artistic traditions; and, secondly, determining the unity of East and West in a single musical domain as one of the historic functions of Sofia Gubaidulina's art.*

**Key words:** *allusion, binary, East, tree, West, cosmogony, rhizome.*

### Introduction.

Sofia Gubaidulina's name, as a composer and an outstanding representative of avant-garde in the music of the 20<sup>th</sup> century, is well known both in Russia and abroad. As the composer of numerous, globally recognised masterpieces performed by the best musicians, she can truly be ranked among those who define the outlook of the modern art.

The research interest in Sofia Gubaidulina's art can be explained by the fact that it integrally combines human spiritual searches with the innovative form and means of expression. Sofia Gubaidulina's experiments in the musical language required her to be fluent in the whole range of composer techniques of the 20<sup>th</sup> century music. However, the dominating composing method that she is faithful to throughout her art is sonoristics.

Gubaidulina's focus on sonoristic methods was in line with the general music tendencies of the second half of the 20<sup>th</sup> century that were expressed in the replacement

#### IV. Conclusions

English economist in their arguments and constructions actually came from the traditional world of Western Christianity views (ascending in turn to a position of Blissful Avgustina). The reasoning essence is in general that: basically good world order requires a person's natural behavior, following to the due (without violating the norms of the law and the rules of public morality), assuming that the sum of the right and reasonable in each case action may follow only the overall positive result. Thus the truth realizes itself sufficiently regardless of individual will and intentions (which sometimes may be deeply flawed), manifesting itself in the amount of free and constructive actions of all mankind. Including even primarily in the economic sphere of life.

Paving the way for a new outlook A. Smith remained a man of his time. He wanted to be heard and understood by his contemporaries, i.e. people perceiving the world traditionally. And revising certain moral judgments, A. Smith did not renounce Christian morality as such – on the contrary, fully relied on it.

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individual taste and perception. The same goods have different usefulness for different consumers.

The general usefulness – all amount of satisfaction received from this quantity of goods for a certain period. The general usefulness increases in process of consumption, but more and more slow rates. Its such dynamics is explained by that usefulness of each additional commodity unit decreases.

There are two main approaches to usefulness measurement: kardinalistsky (quantitative) and ordinalistsky (serial).

Quantitative approach to the analysis of usefulness is based on idea of possibility of measurement of usefulness of various benefits in hypothetical units – the yutilakh (utility – usefulness). It is supposed that the consumer can compare different goods from the point of view of their preferences and order them on a certain scale of preference, that is the consumer can define a difference of poleznost of different goods or their set. It means that the specific consumer can tell that consumption of one cup of coffee brings him satisfaction in 30 ютилов, two cups of coffee – 56 ютилов, two cups of coffee and one cigarette – 70 ютилов, etc. This approach is cornerstone of the consumer choice which purpose is maximizing the general usefulness at the limited income.

It must be kept in mind that quantitative estimates of usefulness of these or those goods have exclusively individual, subjective character. The same goods can be of great value for one consumer and any value for another. For non-smoking and teetotal coffee of the person, their consumption has no usefulness, rather on the contrary does harm. Therefore, quantitative approach has no opportunity objectively to measure usefulness of these or those goods in the yutilakh. It is impossible to compare also the sizes the satisfactions which had by various consumers. It is supposed that only the specific consumer can give a quantitative assessment in the yutilakh of usefulness of any commodity set consumed by it.

Quantitative function of the general usefulness (TU) in the beginning increasing, has a point of a maximum (S) after which it becomes decreasing. For specific consumers it is very important to feel a point of a maximum of usefulness and to stop excess consumption of the benefits. Therefore say that the most valuable feeling, this sense of proportion.

Limit usefulness (MU) is a gain of the general usefulness of a commodity set at increase in volume of consumption of these goods at unit:

$$MU(Q_i) = \frac{d(TU)}{d(Q_i)}$$

Most often, apparently on the bottom schedule limit usefulness falls and in a point of a maximum becomes equal to zero, and further – negative.

However, possibilities of the person to estimate usefulness of this or that commodity set in a certain quantity of units of usefulness are called in question. More



widespread the point of view is considered that the preference relations are inherent in the person at an assessment or usefulness of these or those goods.

Unlike previous, the second approach doesn't demand usefulness measurement in any quantity. The consumer here can compare usefulness of separate goods or their set and order them on preference degree. The theory of an optimum choice of the consumer recognizes that it carries out the right of comparison and a free choice on some set of the X consumer sets, each of which joins all types of production which are consumer goods for this group of families. Without belittling a community, it is possible to consider that any such set consists of the fixed number (n) of elements and has an appearance:

$$x = (x_1 \dots x_j \dots x_n),$$

where the  $x_j$  elements  $\geq 0$  as they express quantity of consumed production.

Further it is supposed that the comparative assessment of various sets this consumer from the point of view of his tastes, habits, traditions, etc., can be expressed by means of the so-called binary relation of weak preference.

This relation is defined on a set of consumer sets of X, is expressed by a formula «more preferably than... or it is equivalent», registers by means of a sign «=».

The formula « $x = y$ » where x and y the essence consumer sets means that this consumer (group of families) on an equal footing or will prefer a set x to y set, or doesn't see distinction between them, i.e. considers them equivalent. On the basis of the relation of weak preference the relation of indifference (equivalence) is entered: two sets x and y are indifferent for the consumer if conditions « $x = y$ » and « $y = x$ » are at the same time satisfied. The fact of an equivalence of two sets usually registers with the help « $y \sim x$ ». The concept of strict (strong) preference is defined as follows: « $x \succ y$ » in only case when when « $x = y$ », and a ratio « $y = x$ » doesn't take place.

In the consumption theory usually recognize that the relation of weak preference satisfies to important assumptions which are called as axioms of the theory of consumption. Thus, use of the following axioms forms a basis:

Transitivity: if the first size is comparable with the second, and the second – with the third, the first is comparable with the third;

Full or perfect orderliness. According to it, the consumer is capable to order various goods or their sets by means of the preference and indifference relations;

Not saturation: if to any set of goods to add an additional commodity unit, the received set always is more preferable former as possesses bigger usefulness.

The first axiom says that the considered relation is perfect, transitive and reflexive. The Sovershennost of the relation means for any two sets from a set of X surely takes place or a ratio « $x = y$ », or « $y = x$ », or both together, i.e. « $x \sim y$ ».

It means that there are no such sets which the consumer couldn't compare to others. Transitivity of the relation consists that from ratios « $x = y$ » and « $y = z$ », follows that « $x = z$ », where x, y, z – consumer sets. This requirement reflects compatibility

subject of every thought of any feeling and thinking being» J. Bentham proclaimed «welfare in one form or another» [1; P. 82] and, therefore, the unique universal social science, in his opinion, should be evdemonika – the science or art of achieving welfare. Passed utilitarian education in the childhood and later, to a large extent, overcame its influence J.S. Mill noted that I.Bentama's narrow view at human nature ignores such motives as the pursuit to perfection and approval from other people, a sense of honor and dignity, love of beauty, love of order and coherence of all things, the desire for power, desire for action as such and its opposite tendency to idleness [2; P. 99-101]. Modern Swiss economist Paul Ulrich notes the following: «Life Path *homo economicus* started generation after A. Smith. It descended from the marriage of classical political economy with utilitarianism. Assistant at birth was David Ricardo» [8; P. 196].

So thanks to J. Bentham and D. Ricardo efforts the concept of «economic man» – a follower of J. Bentham in the field of management has been developed. As a result, has spread the idea of man in general, as, indeed, the economic man, that is just as the economic egoist. In this sense, a more balanced position was A. Smith, who found it necessary to divide the two sides of the man – the altruistic and selfish (economic). He has devoted to studying of the first of them «The Theory of Moral Sentiments» [4], the analysis of the second is reflected in the «An Inquiry into the Nature and Causes of the Wealth of Nations». His contemporaries and followers have completely forgotten about this division and methodological premise of «The Wealth of Nations» with the help of J. Bentham have turned into a general doctrine of man.

It should be noted that none of Adam Smith or David Ricardo was not characteristic reflection on the preconditions for economic research. This task is performed other economists.

Adam Smith himself was far from vulgar-standard interpretation of his views. In his earlier work «The Theory of Moral Sentiments», he notes that human nature are inherent goodness and selflessness: «No matter how selfish you think man is, it's obvious that there are some principles in his nature that give him an interest in the welfare of others, and make their happiness necessary to him, even if he gets nothing from it but the pleasure of seeing it» [4; P. 1]. Thus he comes to the principles of the Scottish school of philosophers, whose representatives were A. Shaftesbury, F. Hutcheson and D. Hume.

According to S. Bulgakov, K. Marx, creating the social theory, directly borrowed the model of «economic man» in the doctrine D. Ricardo and J. Bentham: «...in humanistic belief in the natural man, in safety of human nature – are the roots of modern socialism, as well as the system of Fourier and Marx» [10; P. 192].

The question of the interpretation of the «invisible hand» concept put an American economist and Nobel Prize winner Vernon Smith 2002 [5], indicating that the Scottish philosophers, and after them is not Adam Smith argued that pursuing their own interests is a prerequisite for the effective functioning of the market mechanism. Correct interpretation of the concept lies in the fact that following their own interests can not contradict functioning of the mechanism for the common good [7; P. 371].



## II. Statement of the Problem

The model of «economic man» and economic selfishness as a driving force of economic motivation of the person steadily associated with Adam Smith's name. However, the true sights of the scientist extremely differ from sometimes vulgar and simplistic modern interpretations, the authorship of which allegedly belongs to the founder of the British political economy. The objective of research – to reveal worldview and methodological approaches, which formed the basis of ideas about a human nature in Adam Smith's two basic works. It is necessary to show the connection a Smithian model of «economic man» with a holistic worldview of philosophers and scientists of modern times, traditional morality. Hence, it will allow to avoid the false interpretations of the given anthropological concept leading to distortion of perceptions of economic reality.

## III. Results

In the analytical model based on «economic man» (*homo economicus*), introduced by A. Smith, lie assumptions that the individual as a subject of economic relations is:

- independent, able to make independent decisions;
- egotistical, one that wants to maximize of its own benefit;
- rational, able to compare the benefits and costs and to evaluate the consequences of its own actions;
- informed about its own needs and their potential to meet.

Noted properties of a human nature have the important economic consequences on A. Smith. They underlie the system of a division of labour, where the individual chooses such occupation in which its product will have greater value than in other industries. «Every individual is continually exerting himself to find out the most advantageous employment for whatever capital he can command. It is his own advantage, indeed, and not that of the society, which he has in view. But the study of his own advantage naturally, or rather necessarily, leads him to prefer that employment which is most advantageous to the society» [3; P. 362].

Choosing an industry where its product will have a greater value than in other industries, man driven by egoistical interest, the most direct way increases the wealth of society. A. Smith does not prove strictly the thesis about the coincidence of public interest and the interests of all members of society, limited metaphor of the «invisible hand». However, it is obvious that an automatic, requiring no government intervention intersectoral mobility of capital, driven by self-interest of its owners, plays in Scheme A. Smith crucial role. It was here that A. Smith directly uses formulated it first premise regarding human motivation.

The founder of English utilitarianism *Jeremy Bentham* was not, strictly speaking, an economist, although it had a great influence on economists who belonged to the circle led them: *David Ricardo*, *James Mill* and others. The aim of all human actions and «the

(consistency) of estimates of consumers and causes usually many additional discussions. Reflexivity of the relation, i.e. performance for any set of a ratio « $x = x$ », follows from its perfection.

It is necessary to notice that owing to performance of the first axiom the corresponding relation of indifference  $\sim$  appears the so-called relation of equivalence. It means that all set of the X consumer sets breaks up to in pairs non-overlapping sets – equivalence classes, each of which is called as a set of indifference.

We will review two examples of the relations of preference and the corresponding sets of indifference.

1) Let  $n = 2$  and quantities of products in a set  $x = (x_1, x_2)$  be expressed in weight units (kg), and the consumer builds the comparative assessment as follows: «the set more preferably than a set of y or is equivalent to it if its total weight more or is equal to the weight of the second set», i.e. « $x = to y$ »; if  $x_1 + x_2 = y_1 + y_2$ .

It is easy to see that this relation satisfies to the first axiom, and each class of indifference will consist of sets of identical weight.

2) lexicographic preference: quantities of products in a set  $x = (x_1, x_2)$  are expressed in any units, the consumer considers the first product extremely valuable and compares sets by the rule «the set more preferably than y set if the quantity of the first product in this set is more than its quantity in y set and if quantities of the first product are equal in both sets, preference is determined by quantity of the second product». This way of a comparative assessment is defined by a formula:

« $x \succ y$ », if  $x_1 > y_1$   
or, if  $x_1 = y_1$  and  $x_2 > y_2$ .

This relation also satisfies to the first axiom, and each set forms an own class of indifference.

For a set of the indifference consisting of sets which are equivalent to some set x, designation is used:

$$C_x = \{ y \in X \mid y \sim x \}.$$

We will designate a great number of all poorly preferable in relation to x sets through, and a great number of all weak not preferred sets through.

The second axiom of the theory of consumption consists that for any set x both sets and are the closed subsets of vector space of  $R^n$ .

i.e. is defined as crossing of these sets. The relation of preference possessing such property, is called continuous.

From performance of these two main axioms follows that there is a continuous scalar function  $u(x)$ , defined on a coherent set of the X consumer sets and being the preference indicator as it possesses the following characteristic property:

« $x = y$ » in only case when, when  $u(x) = u(y)$ .

Thus, if the consumer poorly prefers a set x to y set, value of function u in a point x will have not smaller value, than in y point, and vice versa if value of the indicator for some set x not less, than for y set, the consumer poorly prefers a set x to y set.

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## ETHICAL AND PHILOSOPHICAL FOUNDATIONS OF ADAM SMITH'S CONCEPT OF «ECONOMIC MAN»

### *The summary*

*The conceptual bases worldview A. Smith and other prominent economists, philosophers of modern times in relation to the formation of the model of «economic man» are investigated. Critically analyzed the false interpretation of the model. Disclosed that Adam Smith started with traditionalist worldview foundations.*

*Keywords: «economic man», «invisible hand», utilitarianism, behavioral motives, interest.*

### I. Introduction

Allocation of the political economy from general discipline called moral philosophy was due to the specific model of human, formed the basis of a new independent science. The main point of this model was a specific motivation: self-interest or desire for wealth as the main motive of conduct. Fundamental role in this process belongs to the book «The Wealth of Nations» by Adam Smith. Adam Smith was the first economist who has taken a certain notion about a human nature as a principle of holistic theoretical system [9; P. 63]. J. Stigler named this system «the magnificent palace constructed on a granite of self-interest» [6; P. 265].

The analysis of the concept of «economic man» takes a leading role in the works of many well-known scientific economists. A detailed research of this problem implemented in the writings of the famous economist-philosopher S. Bulgakov [10]. Among modern studies should highlight the works of American Nobel laureates W. Smith [5] and J. Stiglitz [7] also J. Stigler [6], a Swiss economist P. Ulrich [8] and Russian scientist V. Avtonomov [9]. It should be noted that for today the economic science has no generalized universal holistic model of man as an economic agent of micro- and macro-economic levels. The subject of this study goes beyond the purely economic science and is closely connected with the religious and social philosophy, psychology.

technique appropriate to apply in that case, when the number of unprepared students is quite high, and roughly corresponds to the number of prepared students to classes. In the case of absence of such a correlation of this methodical technique it not should be used in connection with the consuming a lot of time on his organization.

It is appropriate also the application of this methodological technique with the condition to students, which get help, to prepare for the next lesson in that way that they already assisted other students. Thus, firstly, they will also gain experience of knowledge transfer to another, secondly, they will be able to feel the positive feelings from helping one of their friends.

Thus, the above leads us to the following conclusions: firstly, the preparation of future teachers to the upbringing of socially healthy youth, given the nature of the process, to which is prepares, and also features of modern students, encourages us to the development of methodical techniques which would not only contributed to a better assimilation of the knowledges, that are necessary for the future expert, but also skills to pass on to others the assimilation knowledges, while developing professionally important qualities, among which an important place in the context of the formation of a socially healthy school youth is «empathy», secondly, the author's methodical technique on a different way impact on those or another students, namely, promotes mastery of the students of knowledge who were not ready for the practical lesson and consolidate knowledge and mastery of the necessary practical skills by other students, and, thirdly, trying to help their friend they created the conditions for the development of professionally important qualities as humanity, empathy, etc.

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## UKRAINIAN COMPANIES IN THE INTERNATIONAL IPO MARKETS

**Abstract.** *Intensive development of the financial sector creates objective conditions for increasing the number of joint stock companies, which is ahead of the formation of other organizational and legal forms of business. In these circumstances, the importance of finding and attracting long-term resources for the operation of public companies grows. In conditions of increasing the debt burden companies try to use new promising forms of financing. One of these forms is the Initial Public Offering (IPO), which is effective not only in terms of individual companies, but also for the economy and the country's image as a whole.*

*The paper presents the overview of the practice of Ukrainian companies in use the IPO as an effective method of financing business activities. Some key trends of this process were determined on the basis of statistical analysis for 2005-2014 years.*

**Key words:** *initial public offering, stock exchange, alternative platform, global IPO market, regional IPO markets*

### The introduction.

The need to finance the activities of business entities determines the demand for companies' long-term resources of companies. Ukraine has the great investment potential, which is in the center of international community attention. This is evidenced by strong interest on the part of the largest global exchanges Deutsche Börse (Germany), Singapore Exchange (Singapore), Hong Kong Exchanges & Clearing (Hong Kong), SWX Swiss Exchange (Switzerland) and also by the traditional annual «Ukrainian Investment Summit» in London.

*Statement of the problem.* Value of IPOs Ukrainian issuers and the amount of borrowed resources for the period 2005 – 2014 pp. is small. So, IPO, being one of the most effective and promising ways to attract foreign capital, is relatively new to local practices.

*The purpose of the paper* is to determine the main trends in IPO of Ukrainian companies in international IPO markets.

**Main results.**

History of Ukrainian IPO began in 2005 with an initial public offering of securities of Ukrproduct – one of ukrainians dairy producers. Then the company raised \$ 11.3 million on the London Alternative Stock Exchange (AIM). A few months after this Cardinal Resources LLC, which is engaged in the extraction of oil and gas in Ukraine (\$ 20 mln), also came here. In late 2005 they were joined by developer company «XXI Century». The latter received from investors first record \$ 137.8 mln. In 2006 a foreign IPO market came only one domestic agricultural company – Astarta Holding. The transaction received the status of the first IPO on the Warsaw Stock Exchange. As a result of the sale of 20% shares the issuer received 31 million dollars USA.

2007 was fruitful for IPO domestic issuers abroad. At the IPO came six domestic issuers and raised with almost \$1.2 billion (record levels). Thus, the first and so far only in Frankfurt houses construction and investment company TMM (more precisely, a subsidiary Cypriot company TMM Real Estate Development), which at 13.1% of the shares received from investors \$ 105 million.

In London in 2007 was held 4 IPO transactions of Ukrainian companies. In particular, the AIM: \$ 208 mln. US has sold 100% of investment fund Dragon-Ukrainian Properties & Development PLC (DUPD), which also specializes in investments in real estate; at 111 and 130 mln. USD. US companies sold shares Landkom International PLC (agriculture) and KDD Group (real estate), respectively.

The core area of London in 2007 came one company – Ferrexpo AG, which owns a controlling stake in Poltava GOK. The agreement, which brought the company \$ 420 million, was a landmark event. Ferrexpo was the first Ukrainian company and the second company from the former Soviet Union (except Russia) which was listed on the main market of the London Stock Exchange. In addition, the agreement remains the largest in the history of Ukrainian IPO.

One of the most successful IPO of Ukrainian issuer in 2007 was held in Warsaw. It houses the agro-industrial company Kernel Holding SA – Division of a large Ukrainian sunflower oil producer Kernel Group. Agreement, during which attracted \$ 218 million has strengthened the position of the Polish stock market as a platform for IPO of Ukrainian companies.

In 2008, London was held the second IPO deal of Ukrainian company. This time it was agrarian «Myronivskiy Khiboproduct», resulting got \$ 322 million (second largest domestic transaction after Ferrexpo).

In 2010-2011 domestic issuers traditionally chose Warsaw (10 deals), bringing together more than \$ 400 mln. In 2010 just one transaction of IPO agrarian Avangard carried out on the London Stock Exchange \$ 187.5 million. At the end of 2011 was made the first Ukrainian IPO on an international platform NYSE Euronext. Agricultural company Agro-Generation raised it \$18 million. In 2012 the transport company KDM Shipping houses in Warsaw (\$7.4 mln.), and in 2013 the developer

(i.e., the degree of development of relevant knowledge) with assessment, which arguably offers the student, for who was given assistance.

However, the teacher should pay attention to the peculiarities of the relationship between students and their modification in the process of applying a such method. Given the nature of our problem, namely the preparation of future teachers to the formation of the social health of adolescents, which has an extremely important value in the specified process is the establishment of positive relationships between students, the teacher, in the case of a positive result in the specified aspect (for example, the students themselves), has able to offer the use of this method for future teachers in their future professional activity.

On the positive side methodical admission include the following: firstly, the establishment and consolidation of friendly (or even good) relations; secondly, the development of future teachers of responsibility for others, the desire to help them and to feel the importance of this process for them (those who are helping); thirdly, with help of this method, students, who are taught, better learn course material and receive a minimum (possibly initial experience) regarding to the training of another, that is certainly extremely important for his future professional activity; fourthly, in extremely conditions (i.e., in limited time and lack of training it to to training other student) the student must quickly systematize the material, which he owns and to choose the most appropriate, in this context, methodical techniques, which, in our opinion, will also help to prepare students for the quick rebuild of the students in their future professional activity; fifth, using the specified method almost one hundred percent of students involved to work, what practically difficult to achieve in case of unavailability of a large number of students for the lesson without using the specified method, or other similar methods; sixth, using this method on the second half of the class students have almost the same opportunities in relation to the absorption of assimilation of the new material on the practical (seminar) lesson; seventh, understanding by the teacher of students problems (who were not prepared for class) will be induce in them a positive attitude to both: the teacher and the subject.

*Negative implications of methodological technique* is firstly, the loss of a certain amount of time to identify students who are not ready to lesson, and for their placement, secondly, the loss of time for training and detection of the level of development of the necessary minimum of knowledge on the studied problem, that, in its turn, reduces the amount of time to perform tasks, set by the teacher, in relative to the relevant practical exercises, thirdly, the specified methodical technique cannot claim to be continuous (or even frequent) its application in the same group, because in this case it loses its value, which is based on the fixture to him that part of students, who don't preparing for classes without good reason (what is characteristic of the mentality of ukrainian students). Such students need to apply other methods, that should be aimed primarily at improving their motivation to study at all.

Thus, this methodical technique is desirable to apply only on study those topics that are extremely important for their future professional activity. Specified methodical

for payment for study in higher educational establishment), not all students are prepared for a particular practical classes, that is a significant proportion of students do not understand the material, that was offered to them in lectures, or the material, that had to be purchased in the process of independent work. In this regard, only some part of the students have the possibility to work fully on practical (or seminar) lesson. Thus, we have proposed the methodical technique, which consists in the interaction during the lesson between students who are prepared for it and students who, for various reasons, this willingness is lacking.

The essence of this methodological approach was the following: the teacher identifies students who are not prepared for the lesson (for example, the teacher asks to inform students about this and correctly find out the cause of their lack of training for lesson). After that, the teacher asks students, who have prepared for class, to be positioned in such a way, that the prepared student was at the same desk with the student, who is not ready for the lesson. If students, who prepared for the lesson, there were more than students, who don't prepared for it, they are distributed among two students to one unprepared student. In the same way students are allocated if it is more unprepared students (that is one prepared student helps two students who do not possess the necessary educational material).

The complexity of this method is that some students need to provide the necessary (minimal) amount of information in a shorter period of time (10-15 minutes) than other students. This circumstance requires those and other students to work at a very high rate and, consequently, increased tension (nervous processes). The special burden placed on the student that tries to convey the most important aspects of the problem being studied to another student. In this regard, future teacher needs to quickly identify the most important from operating problems, to systematize the material, which he owns, and briefly to bring it to another student, and also selecting the most appropriate, in these extreme conditions, methods to achieve the desired result. The difficulty for the student who receives educational information is quick memorization and processing the received information (which is quite possible due to the mobilization of the nervous processes and high motivation, because in this way students have the opportunity to receive the desired points).

It is extremely important when applying this method is to provide an objective assessment by the teacher of the action of one and the other category of students. So, students, who received the information, directly assess the teacher. Assessment students who assisted his comrades, collectively assesses the teacher and the student who received the information from another student. In our opinion, this approach to assessment is fundamentally important when using this method, because, firstly, the student, who received assistance, is engaged in the lessons and tries to analyze the methodical technique used by his friend, the attitude towards him as a person, and so on. In addition, an important aspect here is the human factor (i.e. the degree of gratitude or conversely). Often when evaluating his friend might overestimate, in connection with thanks to the student who helped. Therefore, the teacher should compare the result

Arricano Real Estate plc has attracted \$24 million from investors on the London Stock Exchange (alternative) [1, p. 108; 2].

The analysis revealed that in 2012-2013 was carried out only one IPO transaction per year. The Eurozone crisis, and the deterioration of the national economy during 2012 have become the main causes of low IPO activity. In particular, 2013 was characterized by the following events: a decrease in exports (including Russia); falling industrial production; increasing the deficit; decrease in foreign exchange reserves; increasing external debt; falling purchasing power; Euromaidan events that led to a decline in investment activity and exit of foreign investors from the domestic banking, insurance, manufacturing sectors, as well as retailers. Political instability, including the government's refusal to sign an association agreement with the EU, making a controversial agreement with Russia to reduce gas prices and the granting of the loan of \$ 15 billion, pushed foreign investors from Ukraine.

Analyzing the industrial structure of Ukrainian IPO, we see that for the period 2005-2013 years 54% of transactions were performed by the agricultural sector (13 of 24 agreements). In second place are the issuers of the real estate sector (5 contracts or 21%), the third – the enterprise mining industry (3 agreement, or 13%). In one transaction accounts for the automotive, oil and gas and transport industry (4%).

As the study of the agricultural sector more than others use IPO to finance the business. The emergence of this situation in recent years contributed to a number of assumptions. Agriculture is one of the few in the domestic economy shows positive dynamics of development (for example, in 2013 observed record harvests in agriculture). The main sources of investments for it is its own funds and bank loans, including secured state guarantees, but they are limited. The ambitious plans for the future prompted many farmers to offer their shares to a wide range of investors, primarily through IPO.

Players in IPO usually have an annual turnover of not less than \$10 mln. The minimum amount of fund raising for IPO should be \$ 30 mln. If you are offered a 25% stake, the cost to business accommodation should be \$ 120 mln, and net profit – \$ 10 mln [3].

The growth rate of development, shift to profitable production position in export markets, the development of agricultural holdings make agriculture an attractive sector to attract investment in international equity markets [4, p. 22]. In addition, the effectiveness of crop production in Ukraine is higher than in other countries.

In a world food crisis, more foreign investors seeking to establish or acquire existing agricultural holdings with large amounts of agricultural land. The rapid increase in food consumption in the world has led to record prices for cereals.

Agricultural land in Ukraine is of 70% of the total area [5, p. 39; 6], which makes it the most attractive region for investment in agricultural production. Increasing competition in the agricultural market led to high rates of land lease 1.5-2 times.

However, there are factors that hinder investors to invest in agriculture Ukraine. The main drawback is the lack of investor protection, inadequate legislation and lack of highly qualified specialists. So at the end of 2013 on IPO took only 13 domestic

farmers and together raised around \$ 1.1 billion. According to the State Committee, the majority of Ukrainian land is leased to local agribusinesses (70.2% of land shares). Therefore, after lifting the moratorium on sale of agricultural land agricultural holdings, these will be the first candidates for the purchase of land. Raise funds for the purchase of land by the company will be an additional issue of its shares on the open market [6], which is expected to lead to an increase in the number of IPOs national farmers in the stock markets.

The research question of choice of foreign pad Ukrainian companies shows that during the period 2005-2013 24-IPO transactions of domestic enterprises conducted in foreign markets, the WSE made 12 transactions (50% of total transactions) (including one – on New Connect), the London Stock Exchange – ten transactions (42% of total transactions) (including seven – on AIM), one – the German Deutsche Boerse and Paris Alternext NYSE Euronext. No IPO Ukrainian issuers happened on the Russian and American sites.

Entering the US market is constrained by ultra-high requirements for listing. Lack of interest in cooperation with the Russian stock market caused by constant changes in legislation and restrictions by the Russian regulator. However, in 2012 SSMNC and the Federal Service for Financial Markets of Russia began discussing a pilot initiative to allow circulation of Ukrainian issuers on the Stock Exchange of (the possibility of cross-listing) [7]. But in the escalation of the conflict between Ukraine and Russia in 2014, this initiative is currently not relevant.

As a result, companies place their securities in Warsaw and London, and occasionally – in Frankfurt. Issuers of CIS chosen London through favorable tax climate and procedures support the IPO for Russian issuers. Popularity presence gives him an alternative site. In London nine IPOs held by four farmers. Experts advise not to go on the London Stock Exchange companies with cap less than \$ 1 billion. [8]. The Frankfurt Stock Exchange launched its «listed initiative» for companies from Russia and the CIS, has opened a site in Russian and seminars in Russia, Ukraine and Germany [9].

But the main center for Ukrainian issuers was WSE. By 2010-2012. Its 10 domestic companies have chosen [10]. Listing in Poland, a member of the EU, local issuers opens the way for other European stock markets. In addition to Ukrainian enterprises there are additional advantages: no language barrier, the presence of WSE IPO-partner in Ukraine, low cost of listing. In addition, the WSE is the only foreign exchange, which has an office in Ukraine [11, p. 89].

Polish investors are showing great interest in investing in the agricultural sector of Ukraine. Because domestic farmers get a better estimate in Warsaw shares. Thus, the WSE at the end of 2013 housed eight Ukrainian farmers and attracted together \$ 484 million. (33% of the total and 21% of total).

Since 2011 WSE began the calculation and publication of national index of Ukrainian companies WIG-Ukraine. This is the first and only index outside Ukraine, whose portfolio consists only of Ukrainian shares [12]. The composition of the index includes shares listed on the main market of the stock exchange, with free-float (shares

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**THE ESSENCE AND PECULIARITIES OF THE AUTHOR'S  
METHODICAL TECHNIQUE «SAVE A CLASSMATE»  
IN THE CONTEXT OF THE PREPARATION  
OF FUTURE TEACHERS TO THE EDUCATION  
OF SOCIALLY HEALTHY STUDENTS**

Nowadays, the issues of preparation of future teachers to the education of socially healthy youth becomes particularly relevant, that determined by several reasons, among which: availability, currently, many negative factors, that affecting on the state formation of pupils' social health (sex scenes on TV, the real manifestations of violence against people and animals, and is also available pornography on the Internet and so on) encourage pupils of general educational establishments, particularly adolescence, to early sexual relations, manifestations of aggression and violence, social exclusion, reducing the value of life, finding the direction to find their place in society, inhibition of the desire to realize themselves in life, etc.

Meanwhile, the search for ways to improve the process of preparation of future teachers, in our opinion, requires not only the development of appropriate maintenance and use of existing forms and methods of training (including active and interactive), and also take into account the specificity of the problem of forming social health of adolescents, consequently, the preparation in students for this process, encourages the development of individual forms, methods and instructional techniques with which students not only increased the level required in a specified context of knowledge and skills, but these qualities in today's study in higher educational establishments, as well as with regard to life's challenges directly the students themselves.

In this article, we propose to consider one of the developed and tested in the practice of preparation of future teachers to the formation of the social health of adolescents author's methodical technique, conventionally called by us «Save a classmate». Specified methodical technique has its own specifics and peculiarities of implementation and, therefore, differs from the known methods, and also methodical technique of study, that, first of all, has a different effect on those or other students, since it designed for interaction in the process of practical training of excellence students and students, who are not prepared to practical lessons.

Development of methodical technique of «Save a classmate» due to the specifics of the current time, which is consist of that now the number of reasons (among which combine individual students work with training full time in connection with the need

Finally, the most complicated version of the method is when each individual student get the task to make his own labyrinth on the most convenient issue in the context of the formation of social health of adolescents. Advantages of complicated variant of this method consist of that the student should not only to make the right path of gradual action in the context of the formation of individual aspects of social health of students with the help of the «labyrinth», but to offer the wrong way, trying to confuse that student who will try to solve it, so, in this way teacher was forced to analyze and anticipate possible wrong actions (in specific situations) in that or another aspect of education of socially healthy adolescents.

### Conclusions.

Thus, the application of the author's method of «Labyrinth» in the practice of training of students of pedagogical specialties allows us to state that its advantages compared with other methods of education in the context of the acquisition of future teachers of required practical skills in the context of designing their educational actions concerning to the issues of formation of the social health of adolescents and its individual aspects.

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in free float) at least 10%. As of 01.01.2014 p. WIG-Ukraine index included the following actions: Kernel Holding SA (weight in the index 40,8%), Astarta Holding NV (30,1%), Ovostar Union N.V. (8,1%), Industrial Milk Company (6,3%), KDM Shipping (5,5%), Milkiland NV (4,9%), KSG Agro S.A. (2,6%), Coal Energy (0,6%), Agroton (0,5%), Sadovaya Group (0,3%), Westa ISIC SA (0,3%). The aggregate market value of the index was 655 million. Dollars. USA (Exchange as of 01.01.2014 g. : 1 US dollar = 3.0067 PLN) [13]. In 2011 the company Kernel Holding SA (IPOs from 2007) won «Best IPO in Central and Eastern Europe.» For several years, the issuer increased the level of its capitalization 3.5 times (up to 1 billion. Dollars. USA) [14].

### Conclusions.

Analysis of the IPO practice of Ukrainian issuers shows such main market trends:

–dominance of agribusiness companies (54% of transactions). The attractiveness of agribusiness investors is strong demand for agricultural products and attractive conditions for development. The crisis of 2007 almost did not affect agriculture, and in 2013 against the background of general stagnation in agriculture observed record harvests, which further stimulates investing in this area;

–Warsaw and London stock exchanges (respectively 50% and 42% of the total number of transactions) are the main choices, due to loyal requirements for Russian issuers and investor interest in the Ukrainian enterprises;

–access to the international market through foreign holding company that owns the Ukrainian assets. The most popular jurisdictions are the Netherlands, Cyprus, Switzerland, Austria, Great Britain, Luxembourg and the British Virgin Islands.

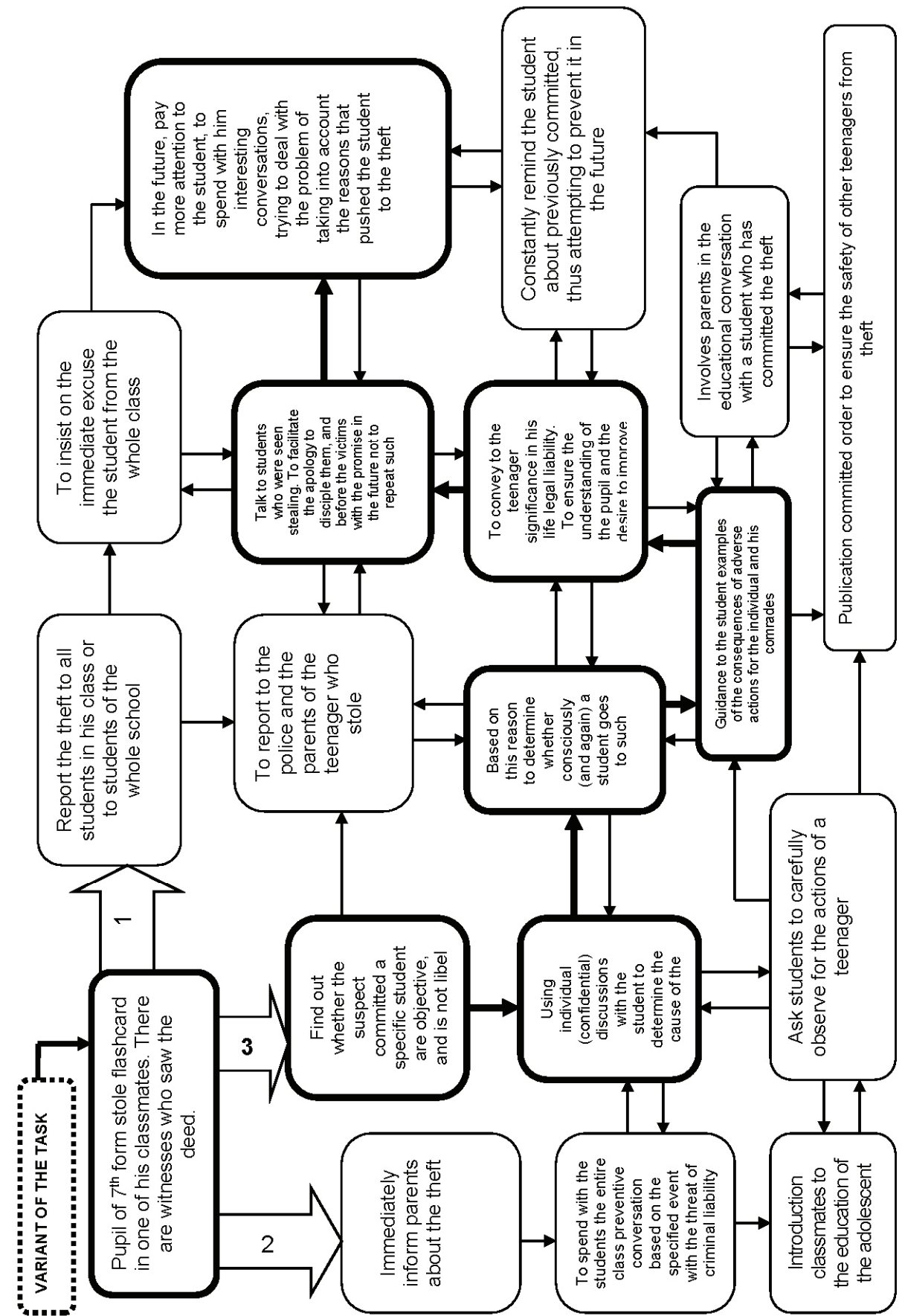
Thus, the results of the study can be concluded that the IPO as a form of investment resources is becoming increasingly popular among Ukrainian companies. So far, all transactions carried out abroad, which hinders the development of IPO market in Ukraine. But overall market potential is great and once the domestic economy will show a steady trend of development, domestic and stock exchange IPO, including activated.

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Pic. 1. The image of the labyrinth of the problems of education juridical liability of teenager

beginning to the end of the conditional maze, the teacher consistently asking the student why you have chosen this path, on the basis of the student arranges his speech at the scientific level confirms the correctness of the choice of the path specified. While it is desirable that the student, choosing the path of the labyrinth, commented on his choice.

It is extremely important that this is done in the correct form, engaging in the learning process of students who follow the paths of the proposed labyrinth and can participate in the analysis selected by the student way.

It should be noted that this method is quite difficult for the teacher, because it requires the ability to constantly adjust during lectures as a student of the most not provided reasons could choose a specific path of the labyrinth.

In practical classes tasks for students can be more difficult. Separating into micro groups, they need to create such a maze on the formation of any aspect of the social health of a teenager. This task is quite complex and therefore it is advisable to apply in a final year (third and fourth). The complexity of the task lies in the fact that we not only need to consider the gradual logical actions of the teacher in achieving the result, but to think about possible erroneous path from the teacher, which may not lead to the result that is expected.

Note that before you created by individual student labyrinth fell into another student, a teacher necessarily together with the student, who developed «the labyrinth», checked objectivity of certain ways.

Let's cite an example of its application in the study of specific topics of the course, namely: «Social and legal responsibility of adolescents – is an important component of social health», namely, the tasks, that was done by a student of physics and mathematics faculty Artem S., which consisted in the creation of one of the labyrinth of the problem of education of the legal responsibility of a teenager as an important part of its social health (look pic. 1).

Note that in the figure the right track (shapes that resemble rectangles and squares, which describes the choices teacher's actions in specific educational situations) marked by bold text, on which the proposed action in this particular situation. It is clear that to another student should get labyrinth without pictured on the figure, selected the correct solutions to educational problems. Thus, a student, who had to go through the labyrinth, he noted educative actions that he chooses sequentially on figure step by step.

Pupil of 7<sup>th</sup> form stole flashcard in one of his classmates. Since the students who created the labyrinth, also had to pass the labyrinth, that was developed by other students (of the various aspects of the formation of the social health of an individual), the application of this method allowed students deep dive into each of the specific issues that contributed to not only develop their ability to simulate certain educational situations that they may encounter in school, but also, trying to pass the labyrinth, designed by another student, constantly (critically) to reflect on the correctness of specific educational actions (steps) with one or another aspect of social health of adolescents.

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## THE FINANCIAL STABILITY OF THE COMPANY MANAGEMENT SYSTEM

*This article describes the theoretical and methodological aspects of financial stability in the system of industrial enterprise management. The factors influencing the financial sustainability of industrial enterprises, which form the two main directions in the management system financial sustainability were determinate; the options evaluation of financial stability were considered; the types of financial stability of enterprises was identified.*

**Keywords:** *financial stability, assessment, control system, information and analytical support, internal and external users, managers, assets, capital, liabilities.*

### INTRODUCTION

System of survival and development of any company, as a business process, is its financial stability. If the company has financial stability, it is able «to handle» unexpected changes of market conditions and not to be on the brink of bankruptcy. Moreover, the higher the stability, the more advantages over other companies the same sector credit and investment attraction.

The financial condition of the industrial company is determined its competitiveness at the external environment and potential in business cooperation, assessed the extent of guaranteed the economic interests of the company and its partners.

To study about the financial stability of company management system is dedicated the works of foreign and Ukrainian scientists: E. Altman, I. Ansoff, W. Arnold, I. Balabanov, I. Blanc, M. Bryuhovezka, I. Buleev, F. Butynets, I. Golovko, A. Gradov, V. Kryzhanovskiy, G. Kireycev, O. Kirov, D. Lapaev, D. Myers, E. Minaev, E. Mnich, V. Panagushin, Y. Pachkovskiy, O. Redkin, S. Romanchin, G. Savitskay, V. Savchuk, R. Saifulin, L. Sytnic, T. Taffler, O. Tereshchenko, E. Utkin, M. Hammer, N. Hahonova, A. Sheremet, R. Cyfrova, D. Ciampi, A. Chernyavskiy and others.

Despite the large number of scientific studies according to financial stability of company currently questions about the role of financial stability management system of industrial company are remained debatable.

## THE AIM OF RESEARCH

The aim of research is investigation the theoretical and methodological foundations of financial stability in the system of industrial enterprise management.

## RESEARCH METHODS

Methodological and information base of work is scientific papers, periodical materials, Internet resources, regulations and national standards of accounting.

For solving the set tasks such general scientific and special methods were applied: morphological analysis according to clarifying the conceptual and categorical apparatus of the research; the systematic, structural and logical analysis; formalization; the method of analogy, comparison and integration; methods of statistical and financial analysis.

## RESULTS

The company as an open system is characterized by appropriate composition, structure and interactions of elements in economic activity. By one side it is the debtor involving the assets of the creditors, by another side it is the creditor providing its assets for business customers – debtors.

Accordingly there is a strong dependence between financial stability of industrial company and level of debit and credit responsibility which make the financial stability vulnerable from external factors. Financially sustainable company pays in time for its liabilities to state, off-budget funds, personnel, contractors.

In the professional economics literature it is difficult to find approach to common interpretation for notion «financial stability», which is accepted as general and governmental used. Some sources about financial analysis are consider this concept as one of the indicators of the financial condition of company which characterizes the state of assets (liabilities) of the company that guarantees the permanent solvency [1]; such state of company when the amount of its assets sufficient to meet obligations – the company is solvency [2]; status and structure of assets of company, its security sources [3].

Financial stability of industrial company, according to our opinion, is the status, distribution and using of financial assets, which ensure its development based on profit and capital in conditions of acceptable risk saving solvency.

Financial stability is determined based on the ratio of different types of funding sources and its compliance to the asset. Knowledge of limitations changes in sources of funds to cover investments in non-current or current assets allows generating ways of business operations that contribute to the improvement of the financial condition and increase the stability of the industrial company.

The business unit is financially sustainable when for own expense covers the funds invested in assets, does not allow undue debit and credit receivables for its obligations in time.

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## PARTICULARITYS OF THE USE OF AUTHOR'S TEACHING METHOD «LABYRINTH» IN THE PREPARATION OF FUTURE TEACHERS TO THE FORMATION OF THE SOCIAL HEALTH OF STUDENTS

Over the last two decades, when little by little scientific pedagogy began to free themselves from the burden of the communist imposition and analysis of the existing situation in the context of the state of politeness and intelligence of pupils has enabled modern man of science to ascertain the presence of far-adverse changes in the specified dimension, came a obvious necessity for looking at this problem in new way and ways of its solution. Thus, came time of the search, development and implementation of new forms and methods of training and even various educational technologies. Not putting towards ourselves objective to dedicate this article to the detailed analysis in the context of the confirmation of the above, because it is given a lot, from our point of view, attention about this, indicate only on those aspects that confirm that the so-called «fashion» on the interactive forms and methods of training, at present, is really justified, since, their use allows students, engaging in the equivalent dialog communicating with their groupmates and by the teacher, thus at most higher level to be armed with the necessary knowledges, abilities, skills, and also increase the degree of formation of professionally important qualities.

Nevertheless, despite the fact, that now in the practice of the graduate school, there are still quite a wide range of interactive forms and methods of training, there still remains the question of the development of special teaching methods in relation to the training of specialists in the framework of specific issues, given the specificity of each particular problem. This is especially important in the context of the preparation of future teachers to the formation of the social health of modern teenagers. Since we have already covered the essence of some of the techniques and methods of training [1; 2; 3], in this article, taking into account its frame, succinctly describe another one of the author's method of teaching, the use of which, in our opinion, is useful in the context of training of students of pedagogical specialties to the formation of future professional activity socially healthy schoolchildren.

The essence of the method. The conduct of the method, proposed by us, is implemented in a multimedia audience. The screen displays a labyrinth (which represent a ways, which at their initial stage indicate the direction of action of the teacher in the context of solving educational problem) depending on the studies question.

Application in the lectures. On the ways, that the student chooses pointing cursor, specify variant of teacher's actions in the context of this problem (on the formation of the social health of adolescents). If the student is able to choose the right path from the

музыку?. Встречаются случаи сужения значения абстрактных местоимений, таких как *any, anything*. Например: *Now I'm not hearing any heart. – А сейчас я твоего сердца не слышу*. Местоимение *any* (какой-либо) переведено с помощью более конкретного местоимения *твой*, характеризующегося более узкой областью денотации. В некоторых случаях местоимения заменяются на существительные. Например: *I'm wondering if anything at home could be intensifying Anna's need to create this fantasy. – Я волнуюсь не могла ли ситуация дома повлиять на желание Анны выдумывать эти вещи*. Местоимение *any* имеет значение небольшого количества, в русском языке для обозначения малого количества жидкости принято использовать словосочетание *капля чего-либо*. Поэтому прием конкретизации, использованный переводчиком в следующем примере, является удачным. *Spill any on my drawing. – Прольешь каплю на мои рисунки*.

В ходе анализа фактического материала мы пришли к выводу о то, что конкретизация является более частотным приемом, чем генерализация. Это объясняется тем, что лексические единицы русского языка обладают более широким семантическим объемом, чем английские. Анализ показывает, что конкретизации чаще всего подвергаются глаголы общего значения, а также абстрактные существительные и местоимения. Генерализация же, напротив, используется для замены слов, обозначающих марки и модели чего-либо, что объясняется тем, что определенные реалии могут быть знакомы носителям только одной культуры, и не знакомы носителям другой.

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Assessment the financial stability consists of: definition of the overall financial stability; assessment of financial stability relate to formation of reserves and the cost and all current assets; calculating the amount of own circulating assets, and identify factors influencing its dynamics; the type definition of financial stability. To ensure the financial stability of the company must have a flexible capital structure and to be able to organize its movement such to provide a constant excess of income over expenses, thus saving solvency and creating conditions for normal functioning.

It's possible to note that industrial company is the subject and object relations in a market economy at once and influents on the dynamics of the different factors in different ways – there is the most important its division into internal and external. The factors of financial stability of industrial company are presented on table 1.

**Table 1 – The factors of financial stability of industrial company**

Internal	<ul style="list-style-type: none"> <li>- the industry type of company;</li> <li>- the composition and structure of products and rendered services;</li> <li>- the size and cost structure, its dynamics compared to cash income;</li> <li>- the size of the registered and paid-in capital;</li> <li>- the condition of the assets and financial resources, including reserves and resources, its composition and structure;</li> <li>- the technology and model of production organization and management</li> </ul>
External	<ul style="list-style-type: none"> <li>- economic conditions and popular equipment and technology in society;</li> <li>- the effective demand of consumers;</li> <li>- economic and financial policy of the government;</li> <li>- legislation to control activities of companies and the general political and economic stability;</li> <li>- tax and credit policy;</li> <li>- competition and the degree of financial market development;</li> <li>- the degree of development of insurance business and foreign economic relations;</li> <li>- the exchange rate changing and established economic partnerships</li> </ul>

External factors do not depend on the company, what's why it can't influence and must adapt to them.

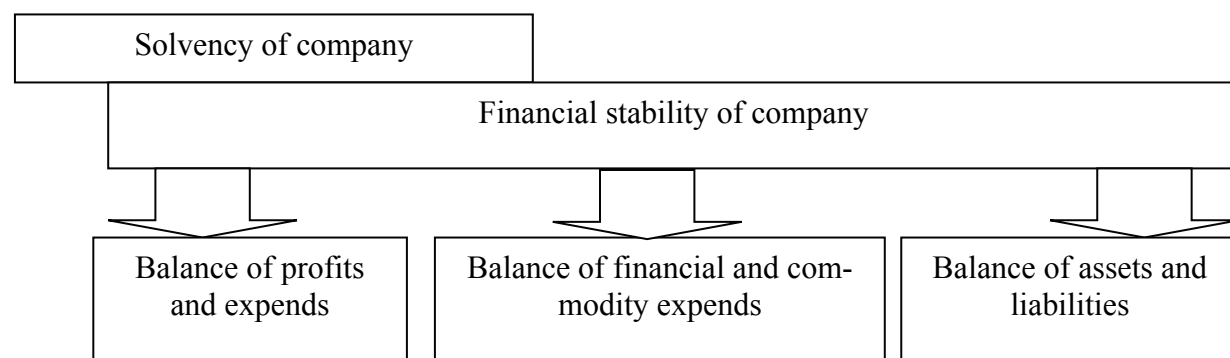
Internal factors are considered dependent, so the company is able to adjust its financial stability.

The group of external factors affecting the solvency of the industrial company consists of: the focus of demand for imports, weak legal regime, inflation costs, inconsistent state financial policy and excessive tax burden, budget non-enough-financing, state or municipal participation in the capital of the company.

Internal factors that have a destabilizing effect to finance industrial company include the imbalance functional and management configuration, not competitive products, non-intensive marketing, unprofitable business, depreciation, optimal debt and reserves, the fragmentation of the authorized capital.



Thus, the impact of these factors can make to be weaker the company's financial stability and reduce its ability to pay, especially if the influence to internal factors are supplemented by interaction with the external and vice versa. Financial stability industrial company must also be effective. To judge about the financial stability without assessment of solvency is practically impossible (fig. 1).



**Figure 1 – Financial stability and solvency of industrial company**

Stability financial state of the industrial company is the result of proper management of the complex factors determining the results of activity of business unit. Assessment of the financial stability of the industrial company is the study of the key parameters and indexes that give an objective picture of its financial condition. The results of the assessment help to identify existing and future problems and attract the attention to them of managers or owners. Assessment of financial stability allows determining the financial capacity of the company for the future. For characterize the financial stability it is used the absolute and relative indicators. Absolute metrics allow determining which sources of funds and what extent are used to cover stocks. Practical assessment of indicators of absolute financial stability carried out on the basis of information-analytical support of the company management system. In operating activities of industrial company is constantly moving inventory, finished goods, commodities. Both the working capital and debt are used in these conditions. Studying the surplus or shortage of funds for the formation of reserves, also set absolute financial soundness indicators (fig. 2).

*Loops* – это сладкие цветные колечки, русскоговорящему же зрителю такое выражение не ясно, так как это американская реалия. Поэтому автор вновь вынужден прибегнуть к замене гипонима гиперонимом, который понятен получателю информации, т.е. заменяет его словом *леденец*. В ходе исследование было отмечено, что прием генерализации чаще используется при переводе номинативных частей речи, глаголы же напротив чаще переводятся с помощью приема конкретизации. Но иногда, хотя и очень редко, встречаются случаи применения генерализации. Например: *I don't want to examine you either.* – *Я тоже не хотела бы тебя лечить.* В данном примере, слово *лечить* обладает более широкой семантикой, чем *examine-осматривать*.

Конкретизация – прием противоположный генерализации. Иначе говоря – это замена слова или словосочетания ИЯ с более широким значением словом или словосочетанием ПЯ с более узким значением. [Слепович 2003]. Как правило, лексике русского языка свойственна большая конкретизация, чем соответствующим лексическим единицам английского языка. Так, анализ фактического материала показывает, что конкретизации чаще всего подвергаются глаголы общего значения (*to get, to give, to be, to go* и др.): *When I get the phone, you are my first call.* – *Как я найду телефон, сразу тебе позвоню;* *Surely you can get a job in New York.* – *Ты можешь найти работу в Нью-Йорке;* *You can only get them in Los Angeles.* – *Их делают только в Лос-Анджелес;* *Don't you get it?* – *Разве ты не понимаешь?;* *Get you another ice-cream.* – *Купите себе еще мороженого.* Словарь *Abby-lingvo* предлагает нам 42 варианта перевода глагола *to get*, а словарь английских дефиниций дает более 45 его определений. Однако для многих этих значений в русском языке существует отдельный глагол. Данные примеры являются ярким тому подтверждением. *Will you ask Daddy to give me a white dove for Christmas?* – *Попроси папу подарить мне на Рождество белого голубя?* Глагол *be* часто используется в значении *быть, пребывать*. Но он не несет в себе информации о виде транспорта. При переводе же на русский язык используется глагол с более узким значением. *The clients will be there at 4:30.* – *Клиенты приедут в 4:30.* Еще одним глаголом, имеющим большой семантический объем, является глагол *to make*. Английский словарь дефиниций, *Macmillan essential dictionary*, фиксирует более 15 его значений, одним из которых является *создавать* или *производить что-либо* [Macmillan, 2007]. Рассмотрим следующий пример: *So the little old lady decided to make a man.* – *Тогда бабушка решила слепить человечка.* В данном случае перевод может быть также объяснен традиционным восприятием русских сказок, в которых человечка, как правило, лепят.

Конкретизация часто применяется тогда, когда речь идет о переводе английских абстрактных существительных. Например, существительное *stuff* может переводиться как *материал, вещество, субстанция, хлам, болтовня, штука* и т.д. *Just that «nothing lasts» stuff... – Просто эта тема, насчет «ничего не вечно; Mom, why are we listening to this classical stuff.* – *Мам, почему мы слушаем классическую*

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### ИСПОЛЬЗОВАНИЕ ПРИЕМОВ КОНКРЕТИЗАЦИИ И ГЕНЕРАЛИЗАЦИИ ПРИ ДУБЛИРОВАНИИ ХУДОЖЕСТВЕННЫХ ФИЛЬМОВ С АНГЛИЙСКОГО ЯЗЫКА НА РУССКИЙ

Для создания эквивалентного перевода для переводчика важно не только найти эквивалентное соответствие лексической единице оригинала, но и произвести, если это необходимо, ряд лексических трансформаций. В данной статье мы рассмотрим примеры использования лексических трансформаций, а именно конкретизации и генерализации, при дублировании художественных фильмов с английского языка на русский. В качестве материала исследования автор статьи автор использует аутентичный речевой рисунок фильма и его перевод на русский язык, анализирует примеры использования конкретизации и генерализации, описывает специфику их использования, выводит закономерности использования данных приемов при переводе речевого рисунка фильмов с английского языка на русский.

В.С. Слепович в своей классификации лексических трансформаций в числе остальных выделяет прием конкретизации и генерализации. Прием генерализации определяется Слеповичем как расширение исходного значения, которое допускается в тех случаях, когда переводящее слово отличается большей степенью информационной неопределенности, которая в достаточной мере упорядочивается определенным контекстом. [Слепович 2003]. *College is not cheap. – Образованию стоит недешево.* В данном примере английская лексема *college* в английском языке имеет значения *университет, факультет, корпорация*. Однако при переводе данного предложения на русский язык анализируемая лексема *college* передается русским существительным *обучение*, которое является гиперонимом по отношению к гипонимам *университет, факультет, корпорация*, что подтверждает процесс генерализации. *It looks like Game Boy. – Выглядит как игровая приставка.* В русском языке есть прямые соответствия слов *game* и *boy*, но в данном контексте они имеют иное значение. *Game Boy* – линейка портативных игровых устройств, разработанная и производящаяся компанией *Nintendo*. Но так, как реципиенту такое устройство не знакомо, автор вынужден прибегнуть к приему генерализации. К тому же слово *приставка* является гиперонимом по отношению к названию одной из моделей *Game boy. You got a Froot Loop in your hair. – У тебя в волосах леденец.* В английской субкультуре всем известно, что *Froot*

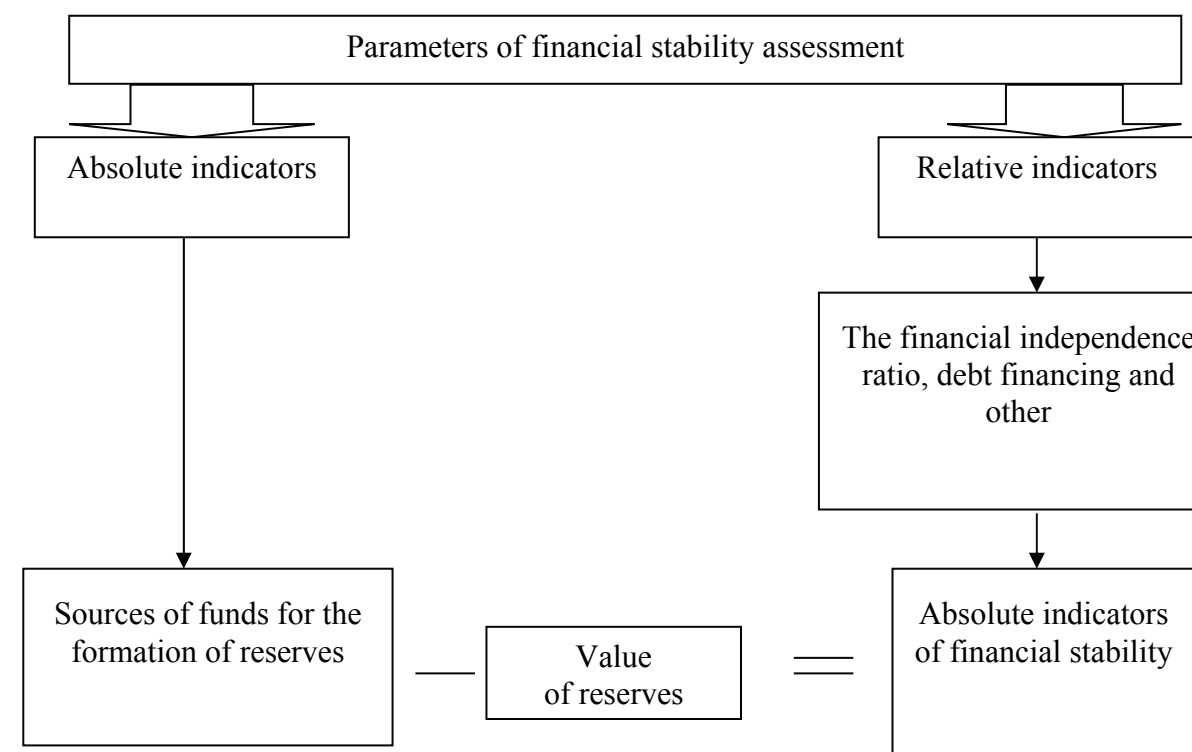


Figure 2 – Parameters of financial stability assessment

For a detailed reflection of the different types of sources (equity, long-term and short-term credits and loans) in the formation of reserves necessary to have data about concerning presence of own circulating assets at the end of the accounting period; the availability of own and long-term debt sources stocks; total sum of major sources of supplies, including surplus or shortage of working capital, own and long-term sources of financing reserves total size of the main sources of coverage reserves.

The types of financial stability accordance to the security reserves of own and borrowed sources are presented in table. 2.

Table 2 – Types of financial stability

Financial stability and financial state	Sources of reserves' finance	Short characteristic of financial stability
Absolute financial stability	Working capital (net working capital)	The high level of solvency. The company is not dependent on external creditors
Normal financial stability	Working capital plus long-term loans and credits	The normal solvency. Rational use of borrowed funds. High yield current activity
Non-stability financial state	Working capital plus long-term and short-term loans and credits	The disruption of solvency. There is a necessity of additional financing sources. Have possible to restore solvency
Crisis (critical) financial state	Working capital plus long-term and short-term loans and credits	The company is insolvent. The company is located on the verge of bankruptcy

Absolute stability appears when all reserves are fully covered working capital.

Normal stability reflects the availability of formation reserves' sources, the value of which is calculated as the sum of own current assets, loans bank loans used to cover inventory and credit for commodity operations. That's why the company to cover inventory and cost of successfully uses a variety of sources – both own and loan, which also ensures its solvency.

Non-stability financial state involves the disturbance of solvency, when the company to cover part of its reserves forced to seek additional finance sources, debilitating financial tense and which are normal in a certain sense that is reasonable. Financial non-stability is considered normal (acceptable), if the amount involved for the formation of reserves and costs of short-term loans and credits does not exceed the total value of inventories and finished products (the most liquid reserves and costs).

Crisis or critical financial state takes place when the company is located on the verge of bankruptcy. In this situation, cash, short-term securities and receivables do not even cover the accounts solvency and overdue loans. By type and changes in financial stability is possible to judge the reliability of the company from the point of view of solvency.

### CONCLUSIONS

Characteristics of financial stability in the long term based on the calculation of absolute values gives only a General estimate. The degree of dependence of an industrial company from external investors and creditors characterize the relative financial stability.

The owners of industrial companies are interested in maximizing their own capital and minimize the credit funds in the total amount of financial sources. Creditors evaluate the financial stability of the borrower based on the equity and the probability of bankruptcy. Potential investors are interested in the structure used by venture capital from the perspective of its solvency and future financial stability.

The relative indicators of financial stability allow assessing the degree of investors' protection and creditors, as they reflect the company's ability to repay its long-term obligations to partners. This group of parameters is often referred to as indicators of capital structure, or management factors are sources of funds. Information base for the calculation of these coefficients are the absolute values of the assets and liabilities of the balance sheet. Calculation and analysis of relative factors significantly complements the assessment of absolute financial stability of the company.

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**IV. Conclusions.**

Therefore, the program and the experimental methodology of the formation of the professional skills in the process of the practical training of the future technicians for the exploitation of gas facilities (at the practical lessons) was created with the usage of the positive elements of the academic process organization in accordance with the module technology by means of making some exercises in the form of the practical assignments and solving the academic problematic situations by the future technicians for the exploitation of gas facilities.

The topical issue for the further work is the scientific explanation which is necessary under the modern conditions of the materials basis and its organization for the guarantee of the practical training; the development of the system of methods of the stimulation of the students academic work; the further improvement of the technology of the formation of the professional skills and abilities during the practical training.

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## **THE CONTENT AND STRUCTURE OF THE GERMAN LANGUAGE TEXTBOOKS IN UKRAINIAN-SPEAKING SCHOOLS OF BUKOVYNA (THE SECOND HALF OF THE XIX – THE BEGINNING OF THE XX CENT.)**

**Summary.** *The article analyzes the content and structure of German textbooks in Ukrainian-speaking schools of Bukovyna (the second half of the XIX – early XX century). The found German textbooks have been divided into groups and the criteria for their analysis have been given, which makes it possible to describe the development of German teaching methodology on the outlined territory and in selected chronological terms.*

**Keywords:** *German textbook, foreign languages teaching methods.*

### **I Introduction**

Modern ideas about the place and role of foreign language teaching methodology (FLT) in Western Ukraine (the second half of XIX – early XX century) fit into the theory of globalization as an extension, deepening of the retrospective knowledge on the background of parallel processes of differentiation, regionalization and multiculturalism. That is why the growth of the significance of the regional distinction in all its manifestations is quite natural. Besides the regional peculiarities of Western Ukrainian lands appear not relics of the past but a direct result of multifaceted in its manifestation process of cultural evolution. The study of peculiarities of FLT in Bukovyna makes it possible to enrich the idea of the multidimensionality of the historical process by specific historical material, reveal the causes and consequences of the diversity of existing approaches, principles, methods of teaching foreign languages (TFL).

The analysis of the research sources, which cover the issues related to the history of FLT, particularly the works of I. V. Rakhmanov (studied methodological problems of new Western European languages teaching in the nineteenth and twentieth centuries); V. Y. Raushenbah (analyzed methods from the first till the twentieth centuries); G. Y. Vedel (continued the coverage of this issue to the mid-twentieth century); A. A. Mirolyubov (analyzed the status of FLT in the XX–XXI centuries in Russia); R. A. Kuznetsova (studied the history of FLT in the Soviet non-language higher schools); S. M. Nikonov (reviewed the development of FLT from 1900 to 1923); M. I. Rieger

answers to the questions which we asked during the conversation required from the students the knowledge which characterizes the fullness and the depth of a term which needed to be learned. For instance, during the test for the topic The «The Repair and the Scheduled Operation during the Exploitation of the Regulatory Installations» we offered a student to answer the following questions for him to learn the term «The repair and the regulation of the valves and the diaphragms of the pressure-sensitive detector»:

- Enumerate the main actuating devices of the pressure-sensitive detector;
- Explain the equipment service of the valve of the pressure-sensitive detector;
- Name the types of the valves of the pressure-sensitive detector;
- Explain the equipment service of the diaphragm of the pressure-sensitive detector;
- Explain the possible defects of the valves of the pressure-sensitive detector;
- Explain the possible defects of the diaphragm of the pressure-sensitive detector;
- Name the ranges of the oscillation of the regulated (the re-entering and the outgoing) gas pressure.
- Say how to choose the trademark of the pressure-sensitive detector depending on the valve size;
- Tell about the order of the adjustment of the pressure-sensitive detector installed at the gas-distributing plant.

In accordance with the results of such conversation, we defined the character of the students' understanding of each term. The correct answers for the questions which were offered by us stated that the knowledge achieved by the future technicians for the exploitation of the gas facilities is deep enough to work with them.

The methodology of the professional skills formation which was developed in the process of the practical training promotes the activization of their usage during the academic practice and the formed understanding of the terms of the future technicians for the exploitation of the gas facilities. Functioning as an oriented part of activity, this understanding guarantees the conscious fulfilment of the tasks by the students influencing on the process of the successful formation of the complex of the professional subject and practise skills in assembly and the supply service of the equipment and the gas facilities systems effectively.

Thus, the program and the experimental methodology of the formation of the professional skills in the process of the practical training of the future technicians for the gas facilities exploitation during the practical raining lessons are created with the usage of the positive elements of the academic process organization in accordance with the module technology. The experimental methodology of the formation of the professional skills in the process of the professional education during the practical training is based on the practical use of the formed complex of skills by the students by means of making some exercises in the form of the practical assignments and solving the academic problematic situations by the future technicians for the exploitation of gas facilities.

9. The practical assignment «The Repair of the Elements of the Gas Facilities Using Different Kinds of Welding»: The repair of the elements of the gas facilities using electro-welding and gas welding; The usage of the elements of metal heat during the repair of the gas facilities; The quality control of the performed work; The welding work safety.

The achievement of the goals of the formation of the professional skills in the process of the practical training by the future technicians for the exploitation of the gas facilities is determined with the methodology which was developed by us for the students of the experimental groups. It is determined with the traditional methodology for the students of control groups [21].

During the monitoring of the quality of the formation of the professional skills in the process of the professional education in accordance with the experimental methodology for practical lessons and the methodology which was used in the control groups, the control of the students' understanding of the terms was being provided during the defense of the reports which touched upon the topic of the practical training. In the process of the creation of the tasks fulfilled in the report, we wanted to achieve the goal of making the students pay attention to the specific features of the gas facilities construction and the details construction, which prerequisite the process of the service support for the technological operations purpose. Such task is determined by the character of the future professional activity of the students as one of its main tasks is the guarantee of the stream-oriented control and exception inspection of the work quality. In the first case, the correspondence of the technological regulations to the work conditions is checked in order to make the fulfilled operation the most productive and qualitative; in the second case, the correspondence of the basic quality parameters is checked.

The students of the experimental groups had a task to prepare the forms in accordance with which they had to provide their individual report on the results of the understanding of the academic material which covered the topic of the practical training. The students of the experimental groups were allowed to defend their reports if they: 1) had the positive mark at the test or passed a research work which proved that the student who had a negative mark at the test but he studied the academic material which covered the topic of the lecture in the written form; 2) the reports on the topic of the practical training were provided; 3) the defense of the reports was held in the order which was defined by the structural construction of the module; 4) the report which touched upon the topic of the practical training (except the first one) was considered to be defended not only in the case if the student understood each term but also if the student answered the additional questions which covered the topic of the previous practical training as it demonstrated the in-depth knowledge of a student. The students of the control groups got a task to make a report at the beginning of each practical training. The defense of the reports of the control groups students was held only if all of them were complete and in the order which was defined by the structure of the practical trainings.

The defense of the reports by the students of the control and the experimental groups was individual (in the form of a conversation of a student and a teacher). The

(researched the history of the German language teaching methods in Galicia from the end of the XVI century to 1918); T. I. Kapitonova, L.V. Moskovkin, A. M. Shchukin (reviewed the methods of teaching Russian as a foreign language); N. I. Gez, G. M. Frolova (studied the history of foreign FLTM) and others, proves that the development of German language teaching methodology (GLTM) in Bukovina, has not been the object of special scientific research.

The scientists proved that the emerging of a new concept of GLT is preconditioned by many factors – social order of society, the improvement economic conditions, researches in the field of learning theory, the development of related sciences, the change of status of the school discipline «Foreign Language», increasing level of the professional teacher training, technical equipment of schoolrooms, modern approaches to the learning process. The appeal to these scientific presentations favored the fulfillment of the comparative characteristics of FLTM development under different socio-cultural conditions in the context of the dialogue of eras and cultures.

## II Statement of the Problem

The historiographical search has showed that the tendencies of German teaching methodology in Bukovyna as a separate scientific problem has not been investigated comprehensively and systematically in selected chronological and territorial boundaries.

Taking into consideration all above mentioned, this article aims to analyze the content and structure of the German language textbooks that were used in Ukrainian-speaking schools in Bukovyna (the second half of XIX – early XX century.).

## III Results

The problem of Ukrainian textbooks at that time was quite serious. Y. Bilenkyi noted that in the period from 1772 to 1851 in the Western Ukrainian lands there was not a single textbook for secondary schools written in Ukrainian. They were all printed in Latin or German. Between 1852 and 1862 the first textbooks in Ukrainian were composed. School books were discussed at the seyms, various meetings, educational and scientific societies. Interest and initiative of the authorities in the textbooks for the Ukrainian-speaking population caused them to appropriate treatment [2, p. 140]. Since there were very few Ukrainian textbooks in a foreign language, as it has already been stated, this situation forced to use textbooks composed by German, Polish, Hungarian, Romanian, etc. methodologists, translating them into Ukrainian.

For a deeper understanding of the problem of foreign language (FL) textbooks we appeal to the works of contemporary methodologists.

In the methodological literature, considerable attention is paid to the creation of textbooks – this is evidenced by the works of A. R. Arutyunov, N. P. Basay, V. P. Bezpal'ko, O. B. Bihych, I. L. Bim, N. F. Borysko, N. D. Halskova, O. O. Kolominova, S. Y. Nikolayeva, V. G. Red'ko, V. M. Plakhotnik, S. V. Roman, N. K. Skliarenko and others. In

particular, S. V. Roman and A. A. Kolominova note that a good textbook allows the teacher to focus on the better quality of the planned lesson, without wasting time on searching for or making necessary teaching materials and visual aids. And for a student such textbook is a means of rational activity, led by a teacher, the tool which helps him build his communication with the teacher, perform independent work consciously, efficiently, creatively, purposefully and effectively [7, p. 51]. A textbook is also seen as a means, with the help of which the main features of modern methodical system of TFL are modelled, and in accordance with this system a specific learning process is implemented. It is a model of a system of learning, it directs the activities of teachers and students in accordance with the concept of learning, which the textbook realizes.

The issue of evaluating the content of textbooks is closely related to the criteria of analysis and assessment of methodological complexes in FL, which make it possible to objectively assess, analyze, and summarize the accumulated experience, due to the transformation processes. The objective criterion for evaluating the quality of a textbook is the focus on the requirements of the current curriculum. We share the opinion of N. F. Borysko that educational-methodical complex is a subsystem within a system of TFL, which reflects and modifies all its elements, so the main objects of analysis and evaluation are all elements of TFL [3, p. 22-25]. This very purpose of textbooks stems from their main functions, namely: communicative; informative; organizational and management; developmental and educational.

Thus, a textbook is considered by us as a component of the system of TFL, which meets the requirements of the current curriculum and tasks of a specific type of the educational institution, age and other characteristics of learners. It must have language material, samples of oral and written language, information about the country, the language of which is studied, selected and arranged regarding to its functional load in different forms of communication, as well as the positive experiences of students in speaking their mother tongue and prevention of interference. The material in the textbook should be given by certain doses, which will form the content of separate lessons. Each lesson as a rule must include: a text, lexical and grammatical commentary to the text, grammatical material, exercises, and illustrations. Textbook must implement the concept of a certain method of TFL and be the central link of learning process management, one of the most effective ways to optimize foreign language learning.

Considering all above mentioned, let us try to analyze German language textbooks for the Ukrainian-speaking schools of Bukovyna due to the objects and evaluation of teaching methodological complexes developed by N. F. Borysko: social order of society; specific educational and methodological conditions; psycho-pedagogical and methodological concept of teaching methodological complexes; objectives of TFL; content of TFL; content of the subject, its selection and distribution; content of the teaching-developing process; structure and volume; macrostructure; microstructure; technical feasibility of the individual components [3, p. 25].

Due to the fact that there were no teaching methodological complexes in the period under study, we are going to talk about textbooks in FL considering methods,

1. The practical assignment «The Organization of the Working Place of a Locksmith during the Repair of the Gas Supply. The Safety of the Work during the Performance of the Repair and the Sanitaryware Work on the Gas Facilities and in the Workshop»: The safety of the work during the performance of the repair and the sanitaryware work on the gas facilities and in the workshop;

The equipment of the working place; The nomenclature and the equipment service of the instruments, the devices, and the uniform of a student»; The preparation for the work, switching on and switching off the electric and power-driven equipment.

2. The practical assignment «The Work on the Preparation for the Repair of the Pipelines and the Procuring Work. Pipe Bending. The Production of the Raw Stocks from the Pipes, Insets, and Gags»: The preparation of the pipes for the repair; Cutting off the pipe hand tight, with a hack saw and a pipe cutter; Cutting off the pipe mechanically, the usage of the electrified instrument; The preparation of the workpieces taking into consideration the permissible error; The production of the joints, bends, U-bends using the pipe bending tool; The quality control. The analysis of the quality of the produced details. The work safety during the procuring work, joints, bends, U-bends.

3. The practical assignment «The Repair of the Tapped Flanged Pipelines and Other Junctions»: The repair of the joints of the stale pipes threadedly and on the collet; Marking and producing the collets as well as the blotters using different kinds of material; Joining the non-metallic pipes; The work safety.

4. The practical assignment «The Repair of the Valves and Piping»: The diagnostics, the preparation and the repair of the valves and piping; The quality control. The analysis of the repair quality; The work safety during the repair work.

5. The practical assignment «The Trial Run of the Valves and Piping»: The work safety during the research of hermicity; The clean-out of the shut-off valving, attrition of the cotters, assemblage of the details, the research of hermiticity by means of air pressure or kerosene; The analysis of the trial quality.

6. The practical assignment «Assembling of the Valves and Piping»: The work safety during the assembling work in the shafts and the pipelines; Assembling the valves and piping at the gas regulatory facilities, gas distributing plants, boiler-rooms, in the pipelines and the shafts for the technological operations; The analysis of the quality of the assembling work.

7. The practical assignment «The Repair and the Scheduled Operation during the Exploitation of the Regulatory Installations»: The work safety during the scheduled operation; The repair and the adjustment of the flaps and the gas pressure regulator; The check of the filters; The check of the moment of the scuff of the emergency gear; The quality control of the performed work.

8. The practical assignment «The Repair and the Scheduled Operation during the Exploitation of the Internal Gas Facilities»: The repair and the scheduled operation of an oven; The repair and the scheduled operation of a hot-water generator; The repair and the scheduled operation of a gas boiler; The quality control of the performed work; The work safety during the scheduled operation in the building.

object of the cognitive activity) [19]. It means that the goal of the formation of the professional skills in the process of the practical training is considered to be achieved if the future technicians in the exploitation of the gas facilities understand all terms.

We determined the quality of formation of the professional skills with the terms which we found to be those ones which demonstrate the degree of each student's understanding and knowledge of the working process, its structure, technological regulations and the process of the technological fettling of the gas facilities.

It should be notified that in accordance with M. Berulava, the system of knowledge about the object of technique must be structured in the following way:

1. The equipment service of the technical object.
2. The morphological structure of the object (the detail, the knot, etc.).
3. The constructive peculiarities of the object and the general peculiarities for the objects of the certain class.
4. The qualitative features of the object (constructive and exploitive peculiarities, the quality, the reliability, etc.).
5. The quantitative characteristics of the object.
6. The natural and scientific fundamentals of the functioning and the construction of the object.
7. The work of the technical object (the conditions and the schedule of the work, the work order, the on-stream time etc.).
8. The subtractive and the substantial characteristics of the object.
9. The natural and the scientific features of the materials which are necessary for the production of the technical object.
10. The area of the usage of the technical object in the certain production branch.
11. The prospects of the improvement of the certain technical object [20].

I completely agree with the scientist about his structural construction of the system of terms about the technical objects. However, the abovementioned structure of the system of terms is peculiar for the practical training of the students of the construction departments. It can be considered that the term system about the technical objects must have the following structure for the formation of the professional skills in the process of the practical training of the future technicians in the exploitation of the gas facilities:

1. The equipment service of the technical object.
2. The area of the usage of the technical object in the certain production branch.
3. The morphological structure of the object (the detail, the knot, etc.).
4. The constructive peculiarities of the object and the general peculiarities for the objects of the certain class.
5. The work of the technical object (the conditions and the schedule of the work, the work order, the on-stream time etc.).
6. The mechanic adjustment of the object mode of functioning.
7. The prospects of the improvement of the certain technical object.

We created the following list of terms which were needed to be understood for the students of the control and the experimental groups:

techniques of the period under investigation and analyze them only according to the criteria that would allow an objective description of the content and structure of textbooks, composed in the Western Ukrainian lands in the specified chronological period.

FL textbooks, available in libraries and archives have been split into groups. The textbooks of the period under study represented the peculiarity of this time, which reflected the transition from translational (grammar-translational and textual-translational) methods of TFL to the introduction of direct method, which was officially implemented into the curriculum of FL, that is why this fact rightly caused the embodiment of principles of the newly introduced method in the process of creating textbooks.

By writing the textbooks in the study period one was supposed to meet the following requirements: not to touch the political issues in the textbooks; the texts should contain material which had to reflect everyday life; during the making of the textbooks the decisions, taken at the meetings the Regional School Council (RSC), were strictly adhered; to use textbooks, approved by the board of the Ministry of Religion and Education (MoRE) of Austria-Hungary; to republish textbooks only with the consent of the author regarding the new requirements concerning FLT [1, p. 50].

Bukovynian pedagogue I. Gerasymovych indicated that the decisions, taken at the teachers' conferences (implemented from September 2, 1848 by the MoRE of Austria-Hungary), were eligible to submit suggestions to the school authorities concerning the choice of a textbook and making corrections [4, p. 58]. County school boards really exercised such a right.

We have discovered the facts, when the Ministry of Religion and Education of Austria-Hungary recommended a particular textbook for TFL, and the county school board rejected it because most teachers at the conference opposed the use of this or that textbook. The reason for refusal was the reasoning that the textbook is too difficult for the students and did not meet the intellectual development of students, or in the county, most students spoke different languages (here the fact is referred that the textbook was written in German, and the language of learning in the county was Ukrainian /Romanian /Polish) and so on.

So, all this gives reason to believe that the teachers, having desire and indifference to future students' knowledge, had the right to choose textbooks, which, in their view, were more appropriate for certain conditions of TFL, and being supported by the other members of the commission of the county and regional school councils.

In the article by O. Kokurevych it is said that «by composing textbooks since 1892 it had to be taken into account the cognition of FL by a student through doing exercises, which included answers in FL to questions, the ability to ask questions in FL, master it in speaking and writing». The author also criticized old requirements for writing FL books because of overloading students with vocabulary. It was noted that the current textbooks (since 1892) contained questions and answers that made it possible for the better acquirement of GL in speaking and in writing [6, p. 245].

So, the problem of composing textbooks was discussed not only at regional school board meetings, but also in the pages of contemporary educational periodicals where

the current techniques of TFL were offered. At the regional school boards the decision was taken on the establishment of the commission, whose members represented various parts of the western Ukrainian region to examine the books and select those that corresponded to the principles of a particular method, guidelines/instructions to work with a textbook, approved by MoRE at the practical lessons of FL. Inspectors, who checked the textbooks, monitored their second release and the introduction of new requirements of the method of FLT into the textbooks.

Particularly, O. Ivanchuk (1906) noted that the FL textbooks had to comply with the new didactic requirements and principles of the adopted method and recommended to follow such instructions: consider the individual and age characteristics of children; stick to a definite structure of a textbook and the affinity to the content of the educational material; take into account the division into chapters; adhere to the consistency in the presentation of the material considering the time of the year and calendar; the style of the presentation of the educational material should be understandable for a student; the moralization of the material of most chapters; submission of names and biographies of people whose lives and work could serve as a model and whose good deeds could arise the desire in students to study well, believe in the power of science and encourage the development of industry; familiarize children with the history of their people, as well as with well-known personalities of other peoples [5, p. 81-85].

This author's recommendations repeated some of the decisions taken by school regional boards of different lands. Taking into account the factor that the author was a member of the committee, which examined the textbooks, we believe that his additional regulations, including incorporation of age peculiarities of students, the development of a definitive structure of lectures and taking into consideration the seasons are valid today.

So, the examined materials witness the following changes that have occurred in FLTM in Bukovyna, – the use of translation from the foreign language into the mother tongue; shifting lessons from the analysis of etymological forms and syntactic phrases to the development of speaking; the emphasis was placed on the forming habits and developing skills of pronunciation, reading, writing, and translation.

Having reviewed the works of contemporary authors, dedicated to the problems of composing textbooks, let us consider school books for learning German in Ukrainian-speaking schools of Bukovina, which are divided into two groups:

- *readers*, which were a compilation of abstracts from works of fiction, included riddles, poems and others. Some edition also contained autobiographies of famous writers, provided sociocultural details of a country whose language was studied;

- *textbooks*, which consisted of grammatical material and a complex of texts and exercises for mastering grammar. The training material was placed in the following order: first, the theoretical phonetic material was supplied with examples, after this each lesson contained a text, questions about the text content, also lexical and grammatical exercises and explanations of grammar rules.

Internal Gas Facilities» (the fourth team), «The Repair of the Elements of the Gas Facilities Using Different Kinds of Welding. The Repair of the Polyethylene Gas Pipelines» (the fifth team). Each topic of one block-module, the I academic element is studied during one day of the practical training by one sub-group of the students' team. At the same time, the II academic element of the block-module is studied by the second team sub-group. The next day, the team sub-groups exchanged. They were studying the next topic which was defined in the structural scheme of the academic block-module. In order to fulfill the tasks which were planned in the academic practice for each topic, the team was provided some methodological technical tips. The additional explanation about the cavalcade and the way of fulfilling the practical tasks was given the students by the head of sections and the master of the practical training.

For the purpose of the students' fulfillment of the practical training which included the defined topics, we developed the following sequence of activities:

1. To prepare the working place of the breakdown mechanic, his equipment needed for the performance of the repair and the sanitaryware work on the gas facilities and in the workshop.
2. To prepare the instruments, the devices, and the uniform on the working place.
3. To prepare for the work, to switch on and to switch off the electric and the power-driven equipment.
4. To prepare the surfaces of the details (blank parts) as well as the pipes for the completion of the technological operation.
5. To prepare the valves and piping as well as the gas facilities at the gas regulatory facilities, gas distributing plants, boiler-rooms, in the pipelines and the shafts for the technological operations.
6. To sustain a technological operation.
7. To control the quality of the performed work.

The system of the tasks of the practical training for each topic includes making a complex of exercises by the students which demonstrate the way and the order of their fulfillment.

The majority of tasks which were needed to be fulfilled by the future technicians in the exploitation of the gas facilities in order to do the exercises foresaw the presence of the students' developed system of understanding the order and the way of their fulfillment. The formation of the students' clear understanding system was predetermined by the character and the results of the cognitive activity of the future technicians in the exploitation of the gas facilities which was present in the process of the previous practical trainings: «Locksmiths' Practical Training» and «Welding Practical Training».

We monitored the quality of the formation of the professional skills of the future technicians in the exploitation of the gas facilities at the practical lessons by the quantity of the certain definitions which were understood by the students; they are the basis of the subject and mental abilities. The criterion for the monitoring of the students' understanding of each term was the depth of the term which was determined by the «fullness of the term» (the knowledge about the object of the cognitive activity and the depth of the term determined by the generalization of the whole knowledge about the



[12], N. Borysov [13], O. Hupalo and V. Vaydanych [14, 15], O. Maksymov [16], H. Tsekhmistrov [17], P. Yutsyavichyne [18], and others.

## II. Statement of the problem.

The aim of the article is to determine the influence of the practical training on the level of the formation of the professional skills of the future technicians of the exploitation of the gas facilities.

## III. Results.

The evidence of the expectancy of our research hypothesis was provided on the basis of the material of the practical training «The Repair of the Gas Facilities».

The experiment program was divided into the following stages: state one aimed at the analysis of the traditional education system of the future technicians in the exploitation of the gas facilities; formational one aimed at the determination of the influence of the practical training on the level of the professional skills formation of the future technicians for the exploitation of the gas facilities in the higher educational establishment.

The main tasks of the experimental research were the following:

1. The monitoring of the students' professional skills during the practical training «The Repair of the Gas Facilities».
2. The monitoring of the initial level of the students' professional skills during the practical training «The Repair of the Gas Facilities».
3. Carrying out the formational experiment in the implementation of the methodology of the formation of the students' professional skills using the pedagogic technologies (module technologies of teaching) during the practical training «The Repair of the Gas Facilities».
4. The check of the influence of the pedagogic technologies on the level of the professional skills of the future technicians for the exploitation of the gas facilities.

The experimental methodology of the professional skills formation in the process of the professional education during the practical training «The Repair of the Gas Facilities» was the following: we divided the students of each group into five teams which were subdivided into the subgroups. Each team fulfilled the tasks which covered such topics: «The Organization of the Workplace of the Locksmiths in the Repair of Gas Facilities. The Safety of Work during the Performance of the Repair and Sanitaryware Work on the Gas Facilities and in the Workshop», «The Work on the Preparation for the Repair of the Pipelines and the Procuring Work. Pipe Bending. The Production of the Raw Stocks from the Pipes, Insets, and Gags» (the first team), «The Repair of the Tapped Flanged Pipelines and Other Junctions», «The Repair of the Valves and Piping» (the second team), «The Trial Run of the Valves and Piping», «Assembling of the Valves and Piping» (the third team), «The Repair and the Scheduled Operation during the Exploitation of the Regulatory Installations and during the Supply Services of the

In particular, the textbook by Peter Kristoph «Deutsche Grammatik nach der induktiven Methode bearbeitet, mit vielen neuen klar und bündig gefassten Regeln und einem Wortverzeichnis» was designed for middle school students. In the preface the author notes that the textbook was meant, primarily, for students who studied German at the beginner level, rather than for native speakers.

The textbook contains methodological guidelines to help young teachers to compose lessons correctly and to arouse students' interest in learning grammar. To ensure that students can perceive the material more easily and improve their knowledge of the German language the textbook contains many grammatical rules and schemes. However, the author emphasizes that not all the grammar rules are covered efficiently in the textbook. Also the author points out that for the creation of the textbook he used the study material from textbooks by Tumlirtz, Willomitzer, Heinrich and others, and would like to thank his colleagues for their help in creating the textbook.

*The structure and volume of the textbook.* The first chapter consists of pronunciation rules of vowels and consonants. It provides phonetic rules with examples that could be used as tasks for forming skills and developing abilities of pronunciation and reading.

The following chapters contain grammatical rules with examples and schemes. They include such grammatical topics: declension of adjectives, verbs and numerals, the use of articles, the use of tenses, word order in a sentence, direct and indirect speech and many more.

The textbook by J. Chinkel «Deutsche Sprachlehre für österreichische Mittelschulen» contains instructions for the proper interpretation and use of the German language. In the preface the author points out that an important goal for secondary school students at the classes of German is correct German pronunciation of individual sounds, words and sentences. The author stresses that there is no general and equal pronunciation for everybody in the German literary language, and many sounds in different parts of Germany and German-speaking countries are pronounced differently. According to J. Chinkel one should pay attention to the differences in the pronunciation of German.

*The structure and volume of the textbook.* The textbook contains phonetic, lexical and grammatical material. Its first part deals with the phonetic rules with examples and exercises. The sounds were highlighted in the phonetic tables that were studied in the process of covering the topics and each sound had commentaries concerning the rules of its pronunciation. Much attention was paid to writing capital letters and the development of reading skills and proper translation.

The following parts are composed of grammatical material: familiarization with the verb, noun, weak and strong noun declension, declination of adjectives, sentence word order, formation of tenses, etc. and exercises to build habits and develop skills of using grammatical and lexical material while speaking.

So this textbook corresponded to the requirements that were set to textbooks in the period under study. An important component of the textbook was the preface, which indicated the objective. In the textbook a significant role is given to problems of teaching pronunciation – an important precondition of learning speaking.



The textbook by Anton Shtritoff «Deutsches Lesebuch für die 1. Und 2 Klasse gemischtsprachiger Mittelschulen und verwandten Lehranstalten» included poems, tales, ballads, short stories and abstracts of literary works of different genres and different eras, which were used for classroom and home reading.

Thus, in our view, this textbook fully corresponded to the curriculum of Kitsman Ukrainian-speaking gymnasium, which contained a list of literature of different genres, which a student had to cover during eight years of studies at the gymnasium.

#### IV Conclusions

Considering the analysis of German language textbooks' structure of the period under study, the conclusion can be drawn that the choice of textbooks was not big enough. All books corresponded to the objective of FLT and met the requirements of the current curriculum of MoRE of Austria-Hungary. Textbooks of the German language in Ukrainian-speaking schools of Bukovyna reflected all the originality of education in the period under investigation. The content and structure of textbooks were based on such didactic principles as: presentation of the material from easier to harder, from simple to complex; taking into account the age of students: in junior school fairy tales, ballads were recommended for teaching reading, for secondary schools the content of textbooks included more different genres of fiction. In addition, the books had information about the history, literature, geography of various countries around that laid the foundations of country studies. Comparison of grammatical phenomena of the FL with the Ukrainian language served for a better understanding of the grammatical material.

Study material in textbooks was understandable for students and sufficient for them to acquire the German language at a certain level, defined by the curriculum. Among the functions performed by the then textbooks the most important were considered the following: informative (the textbook supplied with information about the system of the language, some of them provided data about the country, whose language was studied); educative (textbook material was intended for teaching lexical and grammatical material); motivating (in the content and structure of the textbook for different classes and types of schools the material was given that corresponded to the age and interests of students); controlling (contained questions to the content of the read texts and translation).

Thus, the content and structure of the found and analyzed German textbooks in Ukrainian-speaking schools of Bukovyna give reason to assert the fact of implementation of the concept of translation and direct methods of teaching foreign languages, which requires a separate detailed analysis.

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### THE PROGRAM AND THE METHODOLOGY OF THE EXPERIMENTAL WORK ON THE FORMATION OF THE PROFESSIONAL SKILLS OF THE FUTURE ASSEMBLING TECHNICIANS, THE TECHNICIANS IN THE SERVICE SUPPORT AND THE SYSTEMS OF GAS SUPPLY

**Abstract.** *In the article, the following issues were observed and analyzed: the program and the methodology of the experimental work on the formation of the professional skills of the future assembling technicians, the technicians for the service support and the systems of gas supply with the implementation of the methodology of the formation of the students' professional skills with the usage of the module technology in the process of the academic practice.*

**Key words:** *practical training, professional skills, methodology of practical training, experimental methodology.*

#### I. Introduction.

The program and the methodology of the experimental work on the formation of the professional skills is performed for the purpose of the determination of the influence of the practical training on the level of the professional skills formation of the future technicians for the exploitation of the gas facilities during the academic practice.

The analysis of the recent researches and publications demonstrates that one of the prerequisites for the organization of the students' practice in the professional education process is the formation of the professional skills and the transition to those academic technologies which are more effective than traditional ones. It predetermines some changes in the organization of the academic process. The following scientists paid attention to the necessity and the topicality of such changes: V. Bespal'ko [1], O. Yevdokymov [2], I. Zyazyun [3], M. Klarin [4], O. Padalka [5], I. Smolyuk [6], V. Sushanko [7], D. Chernylevs'kyi and O. Filatov [8], M. Choshanov [9], V. Yakovenko [10], and others. In particular, the transition from the lectures-seminars to the module technology of studying which includes the system of the multi-level rate control, is determined as a key branch of the education remodelling. It was described in the researches of the following homeland and foreign scientists: A. Aleksyuk [11], I. Babina

However, in studies with the use of high-quality hardware the interactivity is important, but not crucial. For productive implementation of interactive whiteboards in the learning process it is essential to have well-built methodology, supported by teaching materials, quality software, trained teachers with the appropriate skills and who are able to conduct studies using such things. Most of the problems, that educators often face with while creating an electronic version of the training material, are connected with the lack of sufficient skills in projection of information space and lack of user's interface that ensure the creation of efficient structures meeting the new opportunities of presenting information.

In software of the interactive whiteboard the possibilities of representation formulas and graphs are limited, but in the process of working with computer graphics systems it is possible to compensate it and provide the interactive whiteboards with new abilities. These constraints can be largely eliminated by using both modern and computer technology with interactive whiteboard. All the components that make up the complex of hardware can operate as a single unit and independently. Educational institutions can pick out any complete set according to educational problems that have to be solved.

#### IV. Conclusions.

Modern methods of teaching require appropriate means of its implementation, which is why compulsory part of the learning environment is modern interactive learning tools. The use of them in the learning process allows us to increase considerably the level of interaction between teacher and student. However, pedagogically appropriate and didactically justified is the use of modern learning tools only when educator knows features of it and has some skills to rule it. So, in today's information society, the main character at carrying out of classes is educator who possesses the active modern techniques but all means of information and communication technologies is a helpful part of his activity.

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## MULTIMEDIA: FROM THEORY TO PRACTICE

**Abstract.** *This research examines the priority areas of appliance of the information and communication technologies in education sphere and shows its role considering the regulatory and legal framework; as well as this study analyzes the benefits and disadvantages of multimedia application; also, this article proves the effectiveness of education in the process of multimedia technologies use.*

**Key words:** *informatization of education, informatization of agricultural sector of economy, the regulatory and legal framework, information and communication technologies, multimedia.*

### I. Introduction.

One of the priorities in reforming the higher education is updating its content and introduction of effective pedagogical techniques; establishment of a new system for methodological and information support of higher school; the inclusion of Ukraine into a transcontinental system of information ownership.

The increasing role of information is connected with the creation, processing and representation which is confirmed by the transition from an industrial to an information society. Therefore, the main orientation of state policy in the field of information is to create a unified education and information space, which is a set of databases and data banks, technologies for their maintenance and use of, information and telecommunication systems and networks that operate on the basis of common principles and general rules.

The undeniable fact is that informatization has also involved agricultural complex, that is defined by the following legal documents: Order «On approval of the Action Plan of Information Society Development in Ukraine's agriculture complex for 2007-2015»; Laws and concepts «On computerization» and «informatization AIC (agro-industrial complex)»; Resolution «About approval of the Provision on Register of information and information telecommunication systems of executive bodies, and also the companies of organizations and the organizations relating to the sphere of their control» (from August 3, 2005 of No. 688).

to take care of the content of the material – to write or draw on the interactive whiteboard (on any background). Properly generated classes with using computer, interactive whiteboard and multiprojector can be compared with film and theater. However, in this the teacher will need a lot of directorial skills and efforts to do it.

– Promote the organization skills during group work (or group games) that are essentially important for successful performance in many areas. This requires flexible software and preferably interactive whiteboard based on analog-resistive technology, so that students were able to write and draw with their finger without thinking about how to share the electronic markers.

– Assistance in the organization of feedbacks and provision of nonlinearity in the process of the material learning. Work with different audiences allows us not only to teach online (deviation from linearity of presentation with feedbacks), but also give us so called immersivity (the effect of presence of different audiences) of the training session. The use of multimedia, namely, a multimedia presentation that has management tools allows us to create a problematic situation and maintain interactive mode of work. Study of the new material allows teacher to maintain heuristic conversation and its high tempo;

– Instant control of the students' work and consolidation of educational material, conducting surveys and tests;

– Increased interest of the students in process of studying. It should be noted that teachers, who use interactive whiteboard in the classrooms and are aware of the method of its application, note that students who previously did not show much interest in studies, currently are working with some interest. This incentive is important for both students and educators. Low level of student's success is often explained by inattention, the cause of which is a lack of interest in the traditional way of conducting the lessons, and which mostly appears when using only static projection. Using the interactive whiteboard, you can draw students' attention to the lesson, to conduct it more freely without being distracted by the setting up of computer and to keep up the conversation with students.

Thus, the use of interactive whiteboards promises considerable benefits, but requires significant changes in methodical approaches to teaching.

For large audiences it is better to use an interactive liquid-crystal display that combines function of the monitor and digital tablet. The image is projected by means of a multimedia projector on a large screen. Teacher, facing the audience, with a help of a special pen writes directly on the screen of liquid-crystal display. Students can make their own changes on the screen via wireless tablet.

To control the knowledge it is convenient to use the wireless remote. During the session, the educator gives questions and the students answer to them with a simple click of a button on the remote. Survey results are saved and displayed in real time. When lesson is over, the survey results can be exported to MS Excel or other software and be analyzed.

The use of wireless microphone systems allows students to hear the teacher so that promotes concentration on the lesson and increases the effectiveness of the learning process.

– reflection of visual information. In this case, the board actually turns into the usual screen that reproduces video, slides, presentations, etc.;

– replacing the classic board with chalk. Modern interactive whiteboards have specialized software that allows you to use them as classic board, but using modern technology (electronic markers and colored rubbers, blanks of standard figures, tools for highlighting and selection of image fragments, etc.). As a rule, the software provides the ability to save everything that was written on the board with an option to replay;

– the reflection of interactive materials that provide feedbacks (with some functions of control using sensor boards). The most effective use of the board is its application in combination with two previous ways and specially designed software.

When introducing the interactive whiteboards in the learning process it is necessary to know the technical capabilities of the computer, to be aware of computer programs and software, interactive boards, to be able to use the technique of it in the learning process. This requires the advance preparation of educators. Inexperienced teachers in most cases use an interactive whiteboard or projector, or a traditional chalky board using an electronic marker like chalk, often without saving the work done.

But an interactive session – is not only a presentation in the traditional sense, where you could just use the projector. During the application of the interactive whiteboard you should work with educational material, for instance, to delete something, compose, demonstrate the work of one student for others in the audience, to show Web sites through interactive whiteboard for all of the students, use the group methods of working on something, carry out combined work on documents, spreadsheets or images, to control the computer without using itself, etc.

That is why, an important task of any university is training and retraining of the teaching staff, and even teacher of the new formation, who will own the new technologies effectively, combining the traditional education system with an innovative one. The use of ICT in education allows teachers not only to make the learning material more visual and problem-oriented, but also to facilitate communication between the disciplines and fields. Besides that an important thing is still proper thematic content of educational material, its directions and purpose.

The benefits of the interactive whiteboards application are the following:

- Economy of time by partial rejection of drawing the schemes, diagramming and note taking. Each student has an opportunity after the lesson is finished to get file with his note, which he/she can look over on a computer in any mode. In such a case not only illustrations and notes offered by educator are available, but also the correct sequence of operations is replayed on a board.

– Improving of presentation of teaching material. The combination of interactive whiteboard and multimedia projector allows us to solve a number of problems in the improvement of the quality of the educational process. Multimedia projector displays on the interactive whiteboard's surface the pre-chosen background slide show. Acoustic systems make in the audience the needed background sound, and the teacher has only

As a result, this leads to the need of reforming the agroindustrial complex for further development of agricultural education. The solution to this problem has prompted the Ministry of Agrarian Policy and Food of Ukraine to develop a Program of Informatization of Agroindustrial complex, Concept of the State Program of information support for Agriculture and Rural Development for 2007-2015, that implies the provision of high quality training for specialists in accordance with the requirements of modern agriculture production. The development of higher education in the mainstream of informatization and information technologies use are based on regulations, that are brought into accordance with the Law of Ukraine «On higher education», the concept of the National Program of Informatization, the National Doctrine for Development of Education in Ukraine in the XXI century, the Concept of the reforming and development of Agricultural Education and Science.

## II. Statement of the problem.

To reveal the advantages and disadvantages of multimedia use in the learning process and to show its role in terms of education.

## III. Results.

Today media, as one of the promising areas of informatization in the learning process, has integrated powerful educational resources that are able to provide an environment for the formation and development of personality. The emergence of interactive whiteboards, graphic and overhead projectors, multimedia projectors, computer equipments, modern means of digital reproduction, the development of the global Internet, have contributed to the rapid filling of online educational resources in educational institutions, actualized whole arsenal of means for education. Thus, the multimedia opens up entirely new methodological approaches to the educational process in higher education system. As well as the introduction of multimedia to the educational process has led to the need for technology development, that facilitate the improvement of quality of training for specialists, meeting the requirements of the labor market.

In the context of our research we consider the multimedia as a system of complex interaction of visual and audio effects under interactive software support using advanced hardware and software, that combine text, sound, graphics, photos, videos etc. in a single digital reproduction.

Thus, the development of information and communication technologies, which include multimedia, prompts the scientists and educators to search for more new forms of presenting information in the educational process. The analysis of the experimental data allowed us to define the approaches to organization of student's educational process based on information and communication technologies:

– lessons using multimedia presentations;

- assigning of a personal computer for each student, on which a personal folder is created;
- parallel and concentric studying of the main sections of the curriculum;
- implementation of individual approach, that includes extensive use of educational individual programs, bank of multifarious tasks, etc. during practical sessions;
- conducting a large part of lessons in the form of business games;
- extensive use of project method;
- a system use of problem approach in study.

The introduction of multimedia in the learning process has revealed both positive factors and some hard moments and difficulties. Thus, the organization of sessions using multimedia allows us to demonstrate visually the capabilities of software and to save time, intensifying in that way the process of educational material study. At the same time additional requirements for the preparation of multimedia materials by educator and organization of lessons are emerging.

Introduction of multimedia information technologies in learning process makes it more technological and productive. However, we still face with different difficulties and mistakes, which can not be avoided in the future. But there is a major success – this is the interest of students and their readiness to work, the need of new knowledge and a sense of their independence. The computer allows us to make lessons dissimilar from each other. This feeling of constant innovation contributes to the development of students' interest in learning.

The use of multimedia at the lessons through interactivity approach, that is able to structure and visualize information, enhances motivation of students activating their cognitive activity, both at the level of consciousness and subconsciousness.

Out of all the information channels the visual one is the most powerful, thus its use in educational multimedia is more developed than other channels. However, it does not negate the importance and value of other media. For example, the effectiveness of learning material significantly increases the formation of edominant rhythm for each media product using optimal selection of musical accompaniment. The thought-out interaction of the keyboard and mouse in multimedia textbooks in combination with other media shows us one another advantage to this educational technology. It is based on the fact that manual exercise significantly develop the memory. It is no coincidence that earlier in the former schools children draw contour maps in order to «to make a practised hand at it» and to better remember it at the same time.

Certain products of author's individual consciousness (text, images, audio series, videos, etc.) are being combined into a new system. Interacting with each other, they lose their independence already at the stage of scenario development and miscalculation of all functionalities expected from a product according to its certain purpose. Multimedia product as a result of this interaction gets features that separately taken components do not evolve. Therefore, multimedia in education is effective to the extent which implies the solved specific learning task by using it – to learn something or to develop some skills.

should be included, since instead of the fatigue the feeling of interest appears in students' minds, also they start to look for answers as well as to charge with new positive energy. Multimedia applications outside looks like a simple video, but with opportunities to interfere in a course of acts and to establish a certain dialogue;

– As means for making dispensing didactic materials, patterns, cards etc. Personal computer in teacher's hands, in addition to the scanner and printer – is a teacher's mini-printing house.

In educational sphere the use of computer is possible in three ways: 1) machine as a trainer; 2) machine as a tutor that carries out some of the teacher's functions, moreover the machine can perform some things better than a human; 3) a device that simulates a certain environment and experts' actions in it.

Training system is the most useful for consolidating previously acquired skills. The use of tutoring systems is recommended only if the purpose and aims of the study are clearly defined. Simulation modeling is the most suitable in learning when educational material has no system nature and its boundaries are not clearly defined.

Therefore, the methods of interactive learning using computer programs implement active approach to it. The tools for implementing are complexes of software and hardware (computer, multimedia projector, touch board, Webcam, graphic tablet, etc.) through which the teaching and learning activities of students is carried out at the universities. The complex may also include haptic input device (interactive wireless tablet, a fluid ingress resistance interactive display device (Interactive Graphic Display), that combines the functions both of the monitor and digital tablet; Interactive Voting System – remotes, wireless microphone system and audio system.

Interactive whiteboards, computers and information technology – is a helpful tool that can bring some elements of novelty to the lessons, increase the interest of students in knowledge acquiring, facilitate the teacher's task of preparation for classes, but only by using these technologies in a proper way. Under the condition of systematic use of multimedia educational programs during studying process in conjunction with traditional teaching methods and pedagogical innovation the students' progress greatly increases at different levels of training. The organization of training, which implies ICT and interactive whiteboards, allow us to train qualitatively the specialists at the universities.

Of course, the best way to show a presentation is to use interactive whiteboard. After all, the teachers can ask their questions, and students with interactive wireless tablet can answer the questions of the teacher, to give own questions and participate in discussion. Thus, appears some kind of interactive dialogue between teacher and students, which significantly increases the level of perception and comprehension of the exercises. If student is at the blackboard, the teacher can move freely through the audience and make adjustments using wireless tablet.

Interactive whiteboards involve the computer, multimedia projector, software and board.

Experience of the introduction of interactive whiteboards with multiprojector at leading universities around the world shows that it can be used during the theoretical and practical training for:

– after studying of each structural unit of educational material place the material for generalization which presents the material more concisely;

- openness for development;
- possibility for copying and outputting the text for printing.

When creating presentation it is better to find as many points of collision of academic subject and «external information flows» as possible, that allows you to make it more interesting, relevant and exciting for students.

Multimedia means, that are used in the presentation, help to implement more effective interaction with students.

One of the basics of the successful presentation is flexibility (readiness to make changes to the presentation in response to students' reaction).

The presentation can have two versions – for teachers and students that are constantly updated with new materials and improved. Student's personal presentation is updated with his own works. Modern software and hardware to allows us change the content of the presentation easily and store large amounts of information.

Preparation of multimedia presentation includes the following steps:

- structuring of the learning material;
- drawing up of implementation script;
- development of presentation's design;
- preparation of media fragments (texts, images, video, audio recording of fragments etc.);
- preparation of BGM (background music);
- test-check.

Use of a multimedia presentation (or some of its slides) at the classes depends of course on the content of this lesson and the goal that teacher puts before her/himself. However, the practice allows to select some general, the most effective techniques of use some help or tips for students:

– when studying the new material that allows us to illustrate various visual means. Such application is especially advantageous in cases where it is necessary to show the dynamics of any process;

– to check students' educational achievements. Computer testing is a self-examination and self-realization, a stimulus for learning, a way of educational activity and manner of expression of students expression. For teacher it is a mean of quality assessment, programmable way of accumulation ratings;

– for furthering knowledge – as a supplementary material for classes;

– when checking the frontal independent works that provides with both oral and visual control of the results of studying process;

– in solving problems of educational nature – helps to create a picture, develop a plan of the solution and to control the intermediate and final results of independent work according to this plan;

– means of emotional discharge. When conducting the unit of exercises or lengthy consultations before exams videos screensaver of experiments or videos of it

It is well known that while using interactive multimedia technology in the studying process the fraction of assimilated material can be up to 75% [1]. After all it was known long before the appearance of the computers, that improving of the efficiency of material assimilation has a result when the perception process involves visual and auditory components.

Let us consider the process of preparation the educational multimedia presentations. While creating these presentations it is necessary to consider the motivation, stating educational goals, arrangement of preconditions for the perception of educational material, its presenting and evaluation.

In the process of development, it is necessary to:

- to distribute each material to certain stages and small completed parts;
- to point out at each stage the separate parts of further material and to cite some data avoiding significant interruption in order to encourage student's curiosity without satisfying it fully;
- to locate and to distribute material so as wherever possible to return to the previous when studying new at the next level.

The creation of scenario schema and preparation of text for accompaniment of multimedia presentation should be guided by the following principles:

- Presentation should be short, accessible and compositionally coherent;
- the duration of the presentation should be no more than 20-30 minutes;
- In presenting the material several key points should be noted so that during the presentations from time to time it would be possible to highlight the issue from different angles. This ensures the proper perception of information by the audience.

The effectiveness of presentation depends on the following:

- a full understanding of what it is necessary to tell;
- choice of symbol style and background color;
- an exclusion of unnecessary things. Each slide should be a necessary element of learning a new material and work on the general idea of the presentation. Failed slides must be united with others, moved or removed at all;
- creative approach. Experiment with placement of graphics and creation of special effects;

– exclusion of overload slides with unnecessary details. Sometimes it's better instead of one complex slide to present several simple. Do not try to put too much information in one slide;

– additional effects should not be transformed into an end in itself. They should be minimized and used only to draw the viewer's attention to the key points of presentations. The sound and visual effects in no case should not be in the foreground and obscure the acquisition of useful information.

Multimedia presentation should:

- have a convenient navigation system, that makes it easy to move through the materials in presentation;

- use the multimedia capabilities of modern computers and the Internet (graphic screensavers, animation, sound, if it is necessary, etc.);
- be divided into small logical closed blocks (slides);
- have a title to each slide;
- have a reference to the literature, electronic libraries and information sources on the Web;
- be accessible and easily retrieved without complications of effects.

While creating multimedia presentation it is necessary to:

- separate the lessons into smaller meaningful parts so called modules;
- select for each module the appropriate form of presentation and to give headings to the chapter, text, images, tables, graphics, audio or video sequence, etc. in accordance with the content;
  - simulate cognitive activity of students in the studying of chapter and use the results that arises during its drafting (it is defined by the main sequence of transition between slides);
  - to design the ways of consolidation of acquired knowledge and skills to carry out the feedback, select the task, test questions, tasks for modeling, to develop the ways for analysis of answers, remarks on common wrong answers and to make prompts (help);
    - compose text, design images, tables, charts, drawings, video, according to the requirements of ergonomics;
    - Compose modules of each section classes from an ergonomic point of view.
- Each module should optimally include the following:
  - text concerning mental attitude;
  - purpose of the studying of module;
  - educational issues;
  - educational material;
  - a set of the key issues on the topic of the module;
  - best student's works during the past years;
  - new student's works;
  - questions for self-examination and reflexion (preferably with answers, comments and recommendations);
    - structural and logical scheme of module;
    - reference list to the module and links to the web sites on the subject of the module.

When creating multimedia presentations it is necessary to take into account the peculiarities of perception of information from the computer screen, to think and maintain a single style of presentation of information during the whole lesson and to seek for unification of structure and form of educational material presentation (unification of interface assigned for the user, the use of graphic elements, creating templates of the lessons etc.).

It is recommended to use the color in the presentation that effectively highlights the separate parts of the text and some elements of the table or the entire table (background of the environment or table's background). The entire presentation is done in a single color palette, usually based on one template.

It is important to check presentation for readability from the screen. The text of the presentation should not be large. It is recommended to use a brief, informative style in presentation of educational material.

When creating multimedia presentation it is necessary to solve the following problem – how to provide the maximum simplicity and transparency of the learning the material by students under maximum information saturation of the product? One of the ways to solve this problem is to restrict both ways of presenting educational material and a set of navigational objects. In this case, the student quickly masters the interface features of the presentation and will no longer be distracted on it mainly by focusing all attention on the content of educational training information.

When creating multimedia presentation educator is faced with a number of complex problems: 1) the need to create a simple and clear interface, where educational information is virtually combined with navigation tools; 2) determination of structural organization and forms of presentation of educational material, according to the imposed educational goals.

The main objective of the proposed approach is to notice the process of content organization and presenting it in a form most suitable for an audience to perceive educational information.

It is important to choose the general style of presentation. When a form of presentation is defined, it is easier to choose a style. For proper choice of style it is necessary to know the principles of ergonomics, proven methods of using some components of a multimedia presentation. It is recommended to make a detailed analysis of several options for presentations, identifying their weaknesses and suggesting the ways of its elimination.

The main thing that is considered is a proper skill to accommodate maximum information in minimum words, attraction and maintaining of students' attention. Today copying the information from other sources and adding it to the presentation is not enough.

Once you have found something interesting and special, you can proceed with developing the structure of the presentation, build navigation scheme, select the tools that fits with the theme of designs and classes to a huge extent.

In order to provide the didactic functions of educational methodology complex to multimedia presentation it is necessary to:

- accompany the snippets with audio or video information in order to highlight semantic accents. For representation a heterogeneous or hypertext information multi-window interface is used;
- put additional material and material for advanced study of the topic;
- for the most important elements create the hints or explanations. The additional materials to the presentation contains basic definitions, key facts, events, tables to compare certain characteristics of objects, etc.;