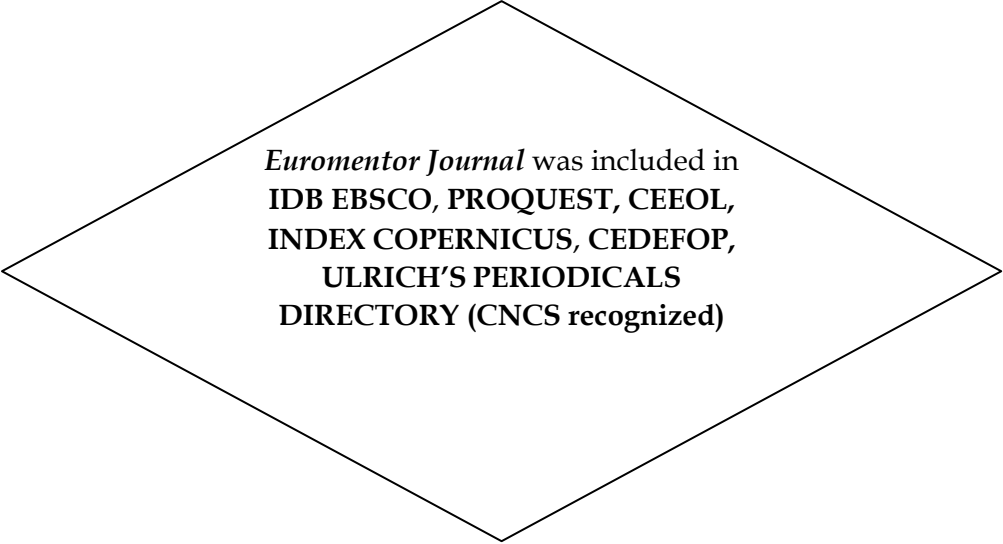


**EUROMENTOR JOURNAL
STUDIES ABOUT EDUCATION**

Volume X, No. 4/December 2019

“Euromentor Journal” is published by “Dimitrie Cantemir”
Christian University.

Address: Splaiul Unirii no. 176, Bucharest
Phone: (021) - 330.79.00, 330.79.11, 330.79.14
Fax: (021) - 330.87.74
E-mail: euromentor.ucdc@yahoo.com



Euromentor Journal was included in
IDB EBSCO, PROQUEST, CEEOL,
INDEX COPERNICUS, CEDEFOP,
ULRICH'S PERIODICALS
DIRECTORY (CNCS recognized)

EUROMENTOR JOURNAL STUDIES ABOUT EDUCATION

Volume X, No. 4/December 2019



ISSN 2068-780X

Every author is responsible for the originality of the article and that the text was not published previously.

CONTENTS

CONCEPTS AND APPROACHES REGARDING NATION AS A POLITICAL AND CULTURAL UNITY.....	7
GRIGORE GEORGIU	
PEDAGOGICAL PHENOMENOLOGY OF THE BINOM EVALUATION-MERITOLOGY	18
TATIANA CALLO	
PRE-SERVICE TEACHERS' VIEWS ABOUT THE IMPORTANCE OF TECHNOLOGY IN SCIENCE TEACHING: A CASE STUDY IN BIOLOGY EDUCATION	32
TUGBA TAFLI	
ECONOMICS OF EDUCATION AS GUIDANCE TO FIGHTING INEQUALITY	45
ANDREI MUNTEANU	
CORPUS BASED APPROACH TO STUDYING VETERINARY MEDICINE LEXICON	63
YURII ROZHKO	
THE HUMANISTIC COMPONENT IN THE CONTENT OF TRAINING FUTURE BIOTECHNOLOGIES OF THE AGRICULTURAL INDUSTRY	71
HELENA MYSHAK	
CULTURAL ARCHETYPES IN THE CONSTRUCTION OF "POSSIBLE WORLDS" OF MODERN AFRICAN-AMERICAN RAP (BASED ON KENDRICK LAMAR'S TEXTS)	80
NATALIIA KRAVCHENKO, VALENTYNA SNITSAR	
TRADO-MODERN COMMUNICATION: CATALYST FOR PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV/AIDS AMONG ANDONI WOMEN	93
REUBEN ATA-AWAJI ANTHONY	

COGNITIVE DECLINE IN THE ELDERLY -FROM UNDERSTANDING TO MAKING A PLAN-	112
ANDREEA ZAMFIRESCU, SORINA-MARIA AURELIAN, RUXANDRA MIHALACHE, ANA CAPISIZU	
JANE AUSTEN’S ROMANTIC WORLD AS REFLECTED IN HER NOVELS.....	122
MEHMET ERTUG YAVUZ	
IN THE SHADOW OF A GREAT CONCEPT	128
COSTEL CHITEȘ	

CONCEPTS AND APPROACHES REGARDING NATION AS A POLITICAL AND CULTURAL UNITY

GRIGORE GEORGIU*

grigore.georgiu@comunicare.ro

ABSTRACT: *In this study I will analyze the conceptions developed by Romanian thinkers regarding the formation of the nation and of the unitary Romanian state. After the union of the Romanian Principalities (The Romanian Country and Moldova) into a unitary state, in 1859, the aspiration that inspired the action taken by the main political and social forces was the completion of this political unity, by uniting and integrating within the Romanian national state the other Romanian provinces as well (Transylvania, Bessarabia, Bucovina) that were still under the control of anachronistic empires. This ideal was achieved in 1918, after relentless efforts, struggles and special sacrifices, which had a happy outcome at the end of the First World War. The Romanians' cultural unity, cemented over the centuries, represented a fundamental support for the construction of the political unity of 1918. The Romanian political thinking has always put in close connection the achievement of national ideal with the imperative of social modernization.*

KEYWORDS: *nation, cultural unity, modernization, European context, nation-state.*

Europe and the national principle

The 19th century was called the century of nationalities, given the scale of national emancipation movements, which spanned over the European area up to South America. The national idea functioned simultaneously in the Romanian space as a political ideal and as a global strategy for the construction of economic and cultural modernity. In the history of Romanians and the peoples in Central and Eastern Europe, the social and political objectives of democratic modernization have been organically interwoven with national imperatives. In step with European approaches, the modern-age Romanian thinkers pursued at the same time the nation's cultural unity and a political unity. Before being a supreme political achievement, the national unity found in the Romanians' history a strong expression in the field of linguistic, spiritual and cultural unity. In a European context propitious to national idea and following the revolutionary movements in the Romanian Countries since 1848

* Profesor, Ph.D., College of Communication and Public Relations, National University of Political Studies and Public Administration, Bucharest.

(movements that had social and economic demands on the agenda, and also the issue of national unity), the two Romanian Principalities (the Romanian Country and Moldova) united in 1859, thus forming the unitary Romanian state. In the second half of the 19th century, the modern Romanian state experienced a strong economic and cultural development, so that, following the participation in the First World War on the side on of Entente powers, in 1918 the other Romanian provinces - Transylvania, Bessarabia and Bucovina -, which until then were under the control of imperial structures in dissolution, united with Romania. Thus the process of formation of the unitary Romanian state was achieved, which continued within its natural borders until the end of Second World War, when Romania lost several territories, including the historical province of Bessarabia (present-day Republic of Moldova).

In 2018, Romania celebrated the Centenary of the Great Union, one hundred years from the achievement of the most beloved ideal that animated the Romanians over the centuries: the union of all Romanian provinces into a unitary national state. It is appropriate to remember some significant moments the process of formation of national consciousness went through, by analyzing the conceptions about the nation of some Romanian thinkers who prepared, in terms of ideas, the movements of national emancipation and who participated, directly or indirectly, in the completion of national unity and the consolidation of the modern Romanian state, that was done by the Great Union of 1918. We should bear in mind that this objective was achieved in the particular historical context of the First World War, which led to the destruction of the three empires - Ottoman, Tzarist and Habsburg -, anachronistic structures which were struggling for centuries over the geopolitical area of Central and Eastern Europe. At the same time, a new principle of organizing modern societies, namely the nation-state, was gaining ground. Thus, immediately after the end of the First World War, seen as a milestone in world history by Romanian sociologist Dimitrie Gusti, who would synthesize in the following terms the underlying conflict that marked modern Europe: "The old, eternally aggressive and conquering state, based, within and without, by mere brutal power, passed away, and the new state, founded on an idea, on the national and democratic idea, took its place."¹

¹ Dimitrie Gusti, *The National Issue*, în *Works*, vol. IV, Bucharest, The Publishing House of the RSR Academy, 1970, pp. 10-11.

Thus, it is the victory of the democratic principle, in terms of state internal political organization, and the final victory of the national principle~, both being constitutive principles of modern Europe. The victory of national principle has as a practical and legal consequence the fact that "the state must submit to the nation", and the political boundaries of the state must coincide with the ethno-national ones. The national state becomes, now, unlike imperial formations, "the political and legal personification of the nation". That is why, following the peace of Versailles, Dimitrie Gusti would rightfully conclude, ~ a new Europe~ was born, a Europe that dissolved ~the antithesis between nation and state (...), creating the synthesis: the national state, a new political idea~.

By extrapolating the significance of this assessment, it comes to mind that the whole modern era, implicitly the history of the Romanians too, is the stage of a gigantic political, economic and spiritual competition, which places face to face the formula of the imperial state, of ancient and medieval origin, and the national idea, as a new principle for Europe's political organization. Thus, we can say that the Europe of nations was born as the Europe of empires crumbled down, under the irresistible pressure of the national idea and also of the democratic idea. There are two ideas that worked simultaneously as power-ideas, mythicized and also demythicized, in different doctrines and theories on modernity.

WithIn the Romanian space, the entwining of the democratic and the national idea took place in the first half of the 19th century, with the advancement of the generation that prepared and sustained the 1848 movement. The texts of the 1848-revolution thinkers, Mihail Kogălniceanu, Nicolae Bălcescu and Simion Bărnuțiu confirm that, according to their new outlook, the struggle to achieve the ideal of national unity had to be combined with that of social and political emancipation, in order to build up a state with modern democratic structures. In a speech before the young political and cultural elite, in 1848, Bălcescu summarized in explicit terms the new strategic orientation: "Our goal, gentlemen, is to my mind no other than the national unity of the Romanians. Unity first in ideas and feelings, which will eventually bring about political unity". As we can see, the phrase "Union in mind and feeling" (belonging to poet Andrei Bârseanu) was not only a metaphor, but a strategic program of cultural and political construction. Successive generations of scholars and intellectuals, cultural forms and modern-day institutions (literature, press, theater, education, etc.), the political and cultural elite as a whole, have contributed to this program.

In the second half of the 19th century, the national idea was taken over by the Junimists, who gave it, through Maiorescu, a "new direction" in the strategy of cultural and political modernization. They considered that genuine modernization should be guided by the critical spirit and high value standards, in order to raise the level of Romanian culture, positioning it in a synchronous and competitive relationship with Europe. The new direction is fighting against formal Europeanization and proposes instead a substantive one. The theory of forms without substance conceptualized the fundamental contradiction of the Romanian society from the period of transition to modernity. Maiorescu's sentences are normative and emblematic. Now, European-type competence, thoroughness, professionalism were required, since "the building of the Romanian nationality cannot be placed on a foundation in the middle of which does not stand the truth"², and "patriotism could not be identical with imperfection"³. Here are the lines of a new cultural reconstruction program, wherein axiological criterion becomes predominant. Without abandoning the pivotal idea of national unity, which functioned as a background, the ~new direction~ understands to serve it by other means, and the spirit and themes imposed by the Juminists, especially by Eminescu, in his political analyzes, would mark the theoretical issues and the orientation of the currents of ideas in the coming decades.

At the beginning of the 20th century, in the Romanian cultural space, different outlooks and ways of thinking intersected and confronted each other, against the backdrop of a poignant social problematique. But, although they were rooted in different paradigms (positivist, evolutionist, historian or neo-Kantian in philosophical terms, or liberal, conservative, social-democratic or populist in political terms), all major intellectual orientations in the Romanian space shared the same aspiration: the national idea. Of course, this idea, which spanned all over the screen of the time, was conceptualized by Romanian thinkers in connection with the need to put in place a series of cultural, political and economic reforms in Romanian society.

Let us also recall that the achievement of Romania's political unity in 1918 took place in a geopolitical context that favored the reorganization of

² T. Maiorescu, *Against the present-day direction in Romanian culture*, in *Works*, vol. I, Bucharest, Minerva Publishing House, 1978, p. 150.

³ T. Maiorescu, *Critical Remarks*, in *Works* vol. I, Bucharest, Minerva Publishing House, 1978, p. 131.

Europe on the basis of the national principle. The factor that overturned the ratio of forces was that the United States of America entered into war, in 1917, on the side of the Entente and against the Central Powers. Woodrow Wilson, President of the United States of America, from 1913-1921, made history through his program to restore peace in Europe after the end of the First World War. He initiated a peace building project based on the right of peoples to decide for themselves, hence on the principle of peoples' self-determination. This 14-point program was presented to the U.S. Congress on the 8th of January 1918. Wilson's speech was widely popular in Europe and had a major impact on both sides. He encouraged the Allies' struggle and suggested that the Central Powers should capitulate, which was the case.

This new U.S. stand led to the dismantling of empires and forced the political reorganization of Europe on the principle of nation states. Thus, Woodrow Wilson's program 10th point provided for the break-up of the Austro-Hungarian empire and the formation of national states in Central and Eastern Europe, based on the principle of national self-determination. In this favorable context, Greater Romania was also achieved, by unifying Transylvania, Bucovina and Bessarabia with the Kingdom of Romania. For his efforts to restore peace in Europe, Woodrow Wilson received the Nobel Peace Prize in 1919. The American president's new vision - by which the ~principle of nationalities~ was enforced as a new power-idea of the world order - inspired later on the movements. of national liberation all over the world.

Nation as a cultural unity and a political unity

The conceptions about nation changed during the modern age and they took different forms, depending on the cultural context (scientific, religious, political and ideological) in which they were shaped. The most important aspect theorists endlessly debated on is the relation between politics and culture in the genesis of a nation, a relation that has been reconceptualized in the last decades through the distinction between the civic sense and the ethnic sense of a nation. At the end of the 19th century, two opposing versions on nation were clashing in Europe: the nation as a political unity and the nation as a cultural unity. The debates of that time put face to face two complementary representations: the first, sustained especially in the French space, emphasized the political, legal dimension and the concept of citizenship; the second, supported by German theorists, focused on the ethnic, cultural and community character of the nation. The

first direction of thinking has been active mainly in liberal doctrines, the second in conservative ones, but we can also see numerous intersections and attempts at synthesizing them.

This bifurcation of vision has a direct connection with certain orientations from modern historical and political philosophy, and also with the political strategies and theoretical arguments used in the Romanian space to justify the act of 1918, either before its achievement or during the interwar period.⁴ At the same time, this distinction can be found, with certain nuances, in the new paradigms interpreting nation, which have prevailed in the last decades in historical thinking and political sociology: those that see nations as a product of industrial modernization, those that consider them only as "imagined communities" or "inventions" of nationalist ideologies, and those which see them as a natural development of "primordial" ethnic structures, with ancient and pre-modern historical roots.⁵

In the modern world, nation, nation-state and nationalism (as an ideology) were the factors that predominantly oriented the political action of elites and societies. The ideal that fueled the national principle aimed to achieve a coincidence between the political borders of states and the ethnic, cultural and linguistic borders of national communities, according to Ernest Gellner, one of the most authorized exponents of the modernist conceptions.⁶ According to these conceptions, the change in the forms of the communities' political organization is determined by the changes in the economic and social structures, and today, in the context of a "liquid modernity", as Bauman says, the idea of a stable, substantive national identity, as an element of permanence, is in total disagreement with the accelerated dynamism of companies.⁷ That is why the conceptions about the nation have multiplied and they also differ according to the answer they give to this question: is nation a perennial unity or an exclusively modern one, determined historically and contextually?

⁴ The studies on the national issue by Romanian thinkers in interwar period are gathered together in *Philosophy and nation*, edition coordinated by Constantin Schifirneț, Bucharest, Albatros Publishing House, 2003.

⁵ Christophe Jaffrelot, *Some theories on nation*, in vol. *Nations and Nationalisms*, coord. Serge Cordellier, Elisabeth Poisson, Bucharest, Corint Publishing House, 2002, pp 59-70.

⁶ Ernest Gellner, *Nations and nationalisms. New perspectives on the past*, Bucharest, Antet Publishing House 1994, pp. 15-22.

⁷ Zygmunt Bauman, *Identity. Conversations with Benedetto Vecchi*, Cambridge, CB2 IUR, UK, Polity Press, 2004, pp. 27-28.

Based on this criterion, the English anthropologist Anthony Smith considers that, after the Second World War, five visions or paradigms about nation prevailed, especially in the European theoretical space.⁸ The first two have common elements and are distinguished only by accents and shades. It is about *primordialist* conceptions, according to which nations are rooted in primary anthropological data (kinship, language, territory, religion), and *perennialist* conceptions, according to which nations are perennial structures of history and have continuity under the cover of different forms of political organization. By contrast, the modernist conceptions, which are the most widespread, consider that nation is a newly emerged political community, being linked to the specific processes of modern era: the formation of national economic markets, industrialization, urbanization, the expansion of the printing press, literacy, the spread of the press and books, the modern public sphere, the unitary system of public education, the political system based on the idea of citizenship and representative democracy.

To sum up, nation is the “community of citizens”, free and equal in their rights, regardless of their ethnic origin or social position. The followers of *modernist* conceptions, who gained considerable influence in the 20th century, relativize the idea of nation and nation state, considering them “the product of particular historical conjunctions, inevitably local and regional”.⁹ Under the fascination of globalization and post-industrial civilization, these theorists, rushing to record the death of nations, see them as either transient historical communities, related to the phenomenon of industrialization, or creations of “nationalism”, seen as an anti-democratic political program, having as mechanism “the invention of traditions”. This current is illustrated, along with Ernest Gellner, by English historian Eric Hobsbawm, who is unable to free himself, not even in his latest writings, from Marxist representations and positions on nation.

In the natural extension of modernist conceptions, we come across *postmodernist and ethnosymbolistic* conceptions, according to which nations are cultural “artifacts”, “imagined” communities built through the cumulative efforts made by modern intellectual and political elites, who resorted to ideological, artistic and purportedly scientific narratives to

⁸ Anthony Smith, *Nationalism and modernism*, Chişinău, Epigraf Publishing House, 2002, pp. 228-234.

⁹ *Ibidem*, pp. 228-234.

remythicize the past and “reinvent” traditions with the role of building the nation’s image and retrospectively legitimize the nation’s existence. It is true that nation is an “imagined community”, built through a huge symbolic and propagandistic apparatus, as Benedict Anderson writes, which defines nations as “cultural artifacts of a particular kind.”¹⁰ It is true that each nation is also an “imagined community”, as it builds an image of itself, a symbolic edifice as a means of protecting its identity. This mechanism is fundamental to the integration of modern societies. It operates with myths, symbols, images and messages that have strong affective resonances in the life of national communities. Nonetheless, these very “great nations” have put in place this political and imaginary strategy, vital, indeed, to strengthen the national unity of modern societies. Finally, an intermediate, synthetic variant would be the *ethnosymbolistic* conceptions (which includes also the author of this classification, Anthony Smith), according to which nations are modern structures, with pre-modern ethnic roots and supports, and the link between modern and pre-modern elements. The pre-modern ones would be ensured by language, beliefs, religions, by appealing to myths, symbols, traditions, common memories, narratives and evocations from ethno-historical perspectives.

Samuel Huntington makes an interesting distinction between “*organic nations*” and “*political nations*.” According to him, all European nations are “organic nations”, built on obvious historical, ethnic, linguistic and cultural supports, whereas the United States of America, having a singular character, would illustrate the case of a “political nation”, in which the function of social solidarization is fulfilled by political factors, by a set of political principles and values, which make up the so-called “American creed”.¹¹ The English philosopher Roger Scruton argues, in *The West and the Rest*, that the modern nation-state, based on “territorial jurisdiction”, the concept of citizenship and the mechanism of representative democracy, implies the existence of a special kind of “prepolitical loyalty”, through which citizens form a community of life, as they “share a common language, customs, territory and interests” in daily life.¹²

¹⁰ Benedict Anderson, *Imagined communities. Reflections on the origin and spread of nationalism*, Bucharest, Integral Publishing House, 2001, p. 10.

¹¹ Samuel P. Huntington, *The American political life*, Bucharest, Humanitas Publishing House, 1994, pp. 40-46.

¹² *Ibidem*, pp. 40-46.

As we can see, the cultural and political elements of national unity cannot be completely separated. They interfere and support one another. In a comparative analysis, Lucian Blaga showed that, whereas the Catholic or Protestant West is inclined to “take the idea of nation for the idea of state or even to derive it from the idea of the state”, in the Eastern, Orthodox space, nation is defined by references to cultural and ethnic factors, to the categories of “the organic”. The Eastern European peoples were for a long time included in “inorganic” structures, of an imperial nature, so that they naturally associate “the idea of nation with that of people”, and they can be proud, says Blaga, with “a much more explicit sense of ethnicity.”¹³

By grouping these conceptions according to their similar elements, we notice that the fundamental opposition is between perennialist and modernist conceptions. The former have an organicist approach to nation, whereas the latter a voluntarist and constructivist one. The former emphasizes the historical, ethnic and cultural dimension, the latter the political-legal dimension, based on the concept of citizenship. Perennialism has a radical variant (primordialism) and a moderate one (ethnosymbolism). Radical, constructivist and postmodernist versions emerged from modernism. In Western approaches, the first three (primordialism, perennialism, and ethnosymbolism) are associated with conservative, right-wing orientations, while the latter (modernist and postmodernist ones) with liberal, left-wing orientations. It follows from modernist and postmodernist approaches that nations are communities that are destined to disappear as modern conditions, which have generated them, will fundamentally change. Nowadays, many theories and interpretations have a discourse taken from this register: nations are fragmented, dissolved, lose their consistency, identity and force of integration under the pressure of globalization and other processes that lead to the emergence of post-national identities. It remains to be seen whether history will confirm or disprove this trend.

Another criterion to differentiate the conceptions of the Romanian thinkers about the nation is their attitude towards the values and currents of ideas that came from the Western space. Some thinkers gave religion an important role in shaping national identity and believed that our spiritual and mental structure was shaped by Orthodoxy and is radically different

¹³ Lucian Blaga, *The Trilogy of culture*, in *Works*, vol. 9, Bucharest, Minerva Publishing House, 1985, pp. 202-226.

from the Western one, which bears the imprint of Catholicism and Protestantism. Other thinkers considered that, being a Latin people, the Romanians naturally belong to the Western space of civilization, wherefrom they received salutary and fruitful influences, which helped them in the construction of their cultural and political modernity. Of course, in-between these opposing attitudes, we find many intermediate positions, which saw in Romanian culture a complex alloy, a combination of local and European elements, a culture of synthesis or a “culture of interference”, which absorbed various influences. Hence the vocation of the Romanian culture to be a bridge of communication between East and West, as well as its ability to combine traditional elements with modern ones.

REFERENCES

Alexandrescu, S., (2000), *Identity in fracture*, Bucharest, Universe Publishing House.

Anderson, Benedict, (2001), *Imagined Communities. Reflections on the origin and spread of nationalism*, Bucharest, Integral Publishing House.

Zygmunt Bauman, (2004), *Identity. Conversations with Benedetto Vecchi*, Cambridge, CB2 IUR, UK, Polity Press.

Bălcescu, Nicolae, (1973), *Selected Writings*, Bucharest, Minerva Publishing House.

Blağa, Lucian, (1985), *The Trilogy of Culture*, in *Works*, vol. 9, Bucharest, Minerva Publishing House.

Gellner, Ernest, (1994), *Nations and nationalism. New perspectives on the past*, Bucharest, Antet Publishing House.

Gusti, Dimitrie, (1970), *The issue of the nation*, in *Works*, vol IV, Bucharest, Publishing House of the RSR Academy.

Hobsbawm, Eric, (1997), *Nations and nationalism, from 1780 to the present*, Chisinau, Arc Publishing House.

Huntington, Samuel P., (1994), *American Political Life*, Bucharest, Humanitas Publishing House.

Jaffrelot, Christophe, (2002), *Some theories about the nation*, in the volume *Nations and nationalisms*, coordinator: Serge Cordellier, Elisabeth Poisson, Bucharest, Corint Publishing House.

Maiorescu, T., (1978), *Works*, vol. I, Bucharest, Minerva Publishing House.

Smith, Anthony, (2002), *Nationalism and modernism*, Chişinău, Epigraf Publishing House.

Schifirneţ, C., (2003), *Philosophy and Nation*, Bucharest, Albatros Publishing House.

Scruton, Roger, (2004), *The West and the Rest. Globalization and the terrorist threat*, Bucharest, Humanitas Publishing House.

PEDAGOGICAL PHENOMENOLOGY OF THE BINOM EVALUATION-MERITOLOGY

TATIANA CALLO*

crinalb55@gmail.com

ABSTRACT: *The article is based on arguments reflected by its title: gaining a pedagogical perspective of the notion of merit as a learning outcome. The concept of meritology is not featured in the pedagogical lexicon; however, its insertion into it could produce a new phenomenon - increased awareness of competence and performance as evidence of solid knowledge. We believe it essential to clarify its pedagogical values, particularly since the interest in it is generated by a new conception of education, namely that of meaningful evaluation. It could be stated that meritology analyzes the potentiality to succeed both academically and in life and its pedagogical relevance stems from the learning-evaluation-outcome relationship.*

KEYWORDS: *meritocracy, meritology, merit, performance, excellence, effort, intelligence, evaluation.*

Considering some current sociological theories, we contend that a society can be labelled as meritocratic only if every individual has the possibility to succeed in life due to education and if academic achievement translates into social success. In an ideal meritocratic society, status is determined by *mertis*, not by social origins.¹ The statement correlates with new educational trends, emphasizing the learner's personality from a social democratization perspective. Evaluation tools aim at bringing into the limelight the best students, at rewarding achievements and motivating them to strive for better results.

Analyzing the evaluation-meritology relationship, we contend that evaluation is undergoing an upgrading stage to connect to the requirements of modern education. There is an ongoing transition from evaluating the amount of internalized knowledge to a systemic evaluation, integrated into all the stages of the educational process, focusing on

* Prof. PhD. Hab., National Agency for Quality Assurance in Research and Education, Chişinău.

¹ M. Manolescu, *Evaluation in Education. Meritocracy and Mediocrity*, Bucharest, The University Publishing House, 2019.

measuring all educational outcomes. The main changes in modern evaluation patterns consist in the shift from assessing results to assessing the process itself within a specific context and reconsidering evaluation criteria, with a focus on competences. Some other features, like the integration of certain values, attitudes and behaviours etc. are also considered.

Varying evaluation forms and means, improving the quality of evaluation tools in order to achieve higher levels of authenticity, stretching it out to encompass the learner's personality and different aspects related to educational activity as well as other school-related dimensions (relational, communicative competences and social integration skills etc.) involving learners in self- and mutual evaluation, their transformation into teacher's partners become reference components of evaluation.²

In this context, in keeping with J. Vogler's opinion, it is worth mentioning that, at least in its primary state, evaluation has the following functions:

- rewarding students according to their performance as a result of learning;
- classifying and comparing results in keeping with common tasks that aim at generating emulation, informing school administration and parents about each student's merits or deficiencies.³

As a process that involves particular subjects with effects upon their thinking and conscience, evaluation almost always involves value judgements referring to moral and personality features. An evaluation does not merely reflect sheer performances and abilities like intelligence type, imagination, knowledge, capacities, competences etc.; it also includes willingness, moral and personality features.⁴

Consequently, the reference framework of evaluation deontology includes a set of values, deemed essential in the evaluation process:

✓ Important values for the evaluating teacher: differentiating various types of learning outcomes; associating them with quantitative and

² M. Tănase, *Evaluation- an essential component of the instructional-educational process*. tanasexpert.files.wordpress.com/2011/11/evaluare-componenta-esentiala-Braşov, 2011.

³ A. Costin, *Evaluation Theory and Methodology*. 2nd Part, Academia. Edu/6548392 /teoria-și-metodologia-evaluării.

⁴ *Developers and Competent Evaluation Tools*. The European Social Fund, Bucharest, 2012, p. 118.

qualitative indicators; possibilities and difficulties of interpreting evaluation results etc.;

✓ Important values for the learner: *acknowledging the* effort the learner puts in learning, determining the position he occupies in a certain hierarchy, the ways in which evaluation results reflect the learner's aspirations;

Important values as reflected against the evaluation process in itself: the idea, the capacity of discriminating between different types of results, accuracy of performance measurements, etc.⁵.

The perception provided by evaluation researchers who refer to aspects directly or indirectly related to meritology, in keeping with the evaluative processes, could enhance our understanding of it in terms of educational outcomes.

In this reference framework, in order to understand meritology dialectically, it should be analyzed as a reaction to whirling social and educational changes. We could contend that evaluation in general develops quality assurance mechanisms which will place landmarks in evaluation policies, also entailing upgrading the system of recording and communicating students' results, preventing and fighting academic fraud (cheating, plagiarism, paper importation, data fabrication etc.) by applying strict straightforward rules⁶

Thus, evaluation means:

➤ Checking what has been learned; checking acquisitions as part of progress;

➤ Judging on learners' activity or their efforts in keeping with certain recommendations; assessing their academic level against certain standards established in advance;

➤ Estimating learners' competence level;

➤ Ranking learners according to their potential or in comparison with others; grading learners' results against general levels;

➤ Using a number or qualification to refer to a learner's achievement level in accordance with specific criteria;

➤ Passing judgements on a learner's knowledge and skills.

➤ Assessing/Determining the quality of a learner's performance.⁷

⁵ *Ibidem*, p. 119.

⁶ D. Potolea, I. Neacșu, M. Manolescu, *Methodology for Evaluating Students' School Achievements, General Methodological Guide*, Bucharest, Erc Press, 2011, p. 20.

⁷ *Ibidem*, p. 23.

Strictly speaking, the notion of evaluation itself includes meritology since it is defined as producing value judgements or merit-based ones, being an appreciation of results in accordance with the objectives to be achieved.^{8,9,10} Considering these statements and adopting a critical perspective of the notion of meritology, we could attempt at getting an overview of the binomial evaluation-meritology, as a result of modernization. Evaluation entails only issuing appreciation as based on partial assessment of results, of knowledge gained through the observation of the dimensions to be assessed. This aspect highlights one of the paradoxes of evaluation in education: the phenomena that are mostly difficult to. Considering these statements and adopting a critical perspective of the notion of meritology, we could attempt at getting an overview of the binomial evaluation-meritology, as a result of modernization. Evaluation entails only issuing appreciation as based on partial assessment of results, of knowledge gained through the observation of the dimensions to be assessed.

This aspect highlights one of the paradoxes of evaluation in education: the phenomena that are mostly difficult to evaluate represent the main objectives in the development of human beings.¹¹

The orientation to hierarchies and evaluations based on various criteria, merit being the most relevant one, emphasizes the problem of meritology as a reaction to rampant changes in education. In the area under consideration, it is important to state that both meritocracy and meritology as concepts taken from sociology, deserve a special place in pedagogy, denoting achieving higher results due to personal superiority.

Meritocracy represents a sociological notion referring to a government or organization form where nominalizations and responsibilities are based on abilities (merit), talent, not on wealth, origins, family relationships, social class privilege, popularity or other impact factors on social or administrative positions. As a word, meritocracy is frequently used to

⁸ M. Manolescu, *Evaluation in Education. Meritocracy and Mediocrity*, Bucharest, The University Publishing House, 2019.

⁹ D. Potolea, I. Neacșu, M. Manolescu, *Methodology for Evaluating Students' School Achievements, General Methodological Guide*, Bucharest, Erc Press, 2011.

¹⁰ I.T. Radu, *Evaluation in the Teaching Process*, Bucharest, The Didactic and Pedagogical Publishing House, 2007.

¹¹ *Apud* I.T., Radu, *Evaluation in the Teaching Process*, Bucharest, The Didactic and Pedagogical Publishing House, 2007, p. 27.

describe a society type where assets and social status are obtained mainly through competition, talent and competences that are proven.

According to this logic, meritocracy refers to the power of the best, of the brilliant ones (*kratos* from Greek means *power*); it means the sovereignty of merit. Since the notion of meritocracy contains the etymon *power*, in pedagogy it is more appropriate to use the notion of meritology, which encompasses the etymon *principle, basis*. This is due to the fundamental characteristics of merit, which is a quality, a special feature making someone or something worthy of appreciation, praise or reward; a special trait that calls for respect; the justification of a reward for their values or deeds.

Considering the dialectics of the phenomenon under investigation, it justifies its feature as a strong indicator of superiority.

In terms of meritology discourse, it does not concentrate on success criteria just to provide a representation, or to convince, to get appreciation for some particular achievements. Meritology refers to achieving results due to merits or personal superiority. The meritology creed is that the world is fair and everyone gets what they deserve.

These ideas are based on the fact that meritology implies offering equal opportunities for learners to achieve success and an ultra-respectful selection of these innate or personally created achievements, striving towards socially recognized merits.¹²

An additional argument in favor of this position consists in the fact that meritology can be conceived as a fundamental notion and in this quality it can be included in all evaluation activities.

It is worth mentioning that meritocracy was first used with a derogatory connotation by M. Young in his book *The Rise of the Meritocracy*, 1958, describing a future where social status is determined by IQ levels and effort.¹³

The main idea is that schools should train elites that would be committed to govern. It is believed that more time is required to identify the merits of intelligence and of the upsurge in effort in order to provide an educational system that trains, encourages and guides a well-prepared elite towards governing¹⁴

¹² C. Leu, *On Meritocracy. Pale reflections on meritocracy, in the deconcentrated shadow of non-meritocracy*. Boocs. corect. com/ ro/ boocs/ preview/ 51/ pdf, p.

¹³ C. Leu, *On Meritocracy. Pale reflections on meritocracy, in the deconcentrated shadow of non-meritocracy*. Boocs. corect. com/ ro/ boocs/ preview/ 51/ pdf

¹⁴ *Ibidem*, p. 7.

Thus, the ideas presented express meritology as:

$$M (\text{merit}) = IQ \text{ level} + \text{effort}$$

The constants the coherence of the binomial evaluation-meritology relies on include: *non-contradiction, exhaustivity, adequacy*. The true reason behind this delimitation is the possibility of identifying authentic outcomes and their intelligence to ensure a balance between learners' effort and their intelligence.

Speaking about intelligence, it is worth pointing out that a learner is considered intelligent if s/he knows how to distinguish between the important and the unimportant, what is valuable and what is not, what is needed to perform a certain activity and what is inappropriate for it. Being intelligent means being able to choose the best option from various ones, knowing how to get into the heart of the matter. Intelligence can be defined as the ability to learn and to understand things. It is the capacity and ability harmonize with the requirements of the modern world in the best possible way, allowing you to reflect upon, research, control and interpret reality. By intelligence we could also refer to the capacity of adjusting and adapting our possibilities in order to deal with situations we did not anticipate.¹⁵

The opponents of the concept of meritocracy bring forward the argument that effort and intelligence are hard to measure dimensions. Consequently, according to this position, any approach to meritology is highly uncertain and inherently problematic. Meritology has also been criticized and treated as a myth, used primarily to perpetuate *the status quo* based on the argument that merit can be defined in terms of success; success itself being a definition of merit, not from the perspective of success being pre-determined by scientific criteria of merit [10]. Adopting P. Corutz's opinion, we could state that the rules of meritology are slow to produce an effect, however, the latter is certain.¹⁶

Effort represents a decisive factor in meritology, it is an objective reflection of merit. Stretching over to the unperceived aspects of the phenomenon, breaking the false cognitive symmetries, crossing over and identifying a real phenomenon, it makes the learners' effort fit an authentic euristic framework.

¹⁵ F. Torralba, *Spiritual Intelligence*, Bucharest, Curtea Veche Publishing House, 2012.

¹⁶ E. Vlădescu, *Dictatorship of Meritocracy*, 2017, [Semneletimpului.ro/ international /economie/dictatura-meritocratiei.html](http://Semneletimpului.ro/international/economie/dictatura-meritocratiei.html)

Effort, as a meritology tool, has an impact on its outcomes, even if seemingly it serves to ensure the connection with learning, paving the way to it.

Due to this dialectics, meritology justifies its status as a scientific criterion, perceived as a *techne* with a clear-cut mission. The main epistemic rationale of meritology consists of *intelligence*, as its steady support, confirming the upsurge of merit, as it has already been emphasized.

All the above arguments dealing with the relation between evaluation and meritology generate the idea that this relationship could be described in much simpler words than it seems at a first glance. There have been many writings and discussions about the significance and the structure of merit. In keeping with various definitions and interpretations produced over time, it appears that the most widely accepted one is that merit, including learners' merit, encompasses the following:

- Inherited potential /genetic dowry/capacities;
- Effort, diligence;
- Results achieved fairly, honestly (efforts ending up successfully).

As it has been stated, learners' effort should be legitimized, which is obtained through evaluation. Evaluation represents the process through which learners' effort is validated and its recognition is ensured. These results are reflected in grades, prizes (within a class, a school, at contests), diplomas, certificates (of different types for various levels). The conversion of merit into diplomas occurs due to evaluation. Hence, evaluation must be fair from a moral perspective and precise from a scientific one. This is a fundamental condition in meritology.¹⁷

C. Cucuș promotes pluri-dimensional, differentiated evaluations and meritology, in keeping with what every learner is or can become. The author states that no human being is classifiable from an absolute, definite perspective reflected in a fixed framework of reference which does not allow for progress in a certain direction¹⁸. Meritology allows for the creation of a context that maximizes some potentialities, pre-dispositions, genetic or cultural dowry of the learners.

¹⁷ M. Manolescu, *Evaluation in Education. Meritocracy and Mediocrity*, Bucharest, The University Publishing House, 2019.

¹⁸ C. Cucuș, *Education. Re-establishment, dynamics, prefigurations*, Iași, Polirom Publishing House, 2017.

Țoc States that through a functionalist perspective and theory, it could be established that inequalities are legitimate as the status distribution mechanism is a meritologic one. Otherwordly, if one becomes a marginal person it is because they did not take full advantage of the fair educational system, which offered the opportunity to make progress, but they rejected. Thus, the role of school in this paradigm is to connect individual talents and learners' potential with adult occupations, suitable for each one separately.

The meritology paradigm could be deemed an original one for a number of reasons:

- *Every individual has the impression that they are meritorious, they did everything it takes and that they are somehow better than their neighbour/ colleague/partner;*

- *Every individual tends to entirely arrogate their merits for success. Whenever we are successful we forget all the other circumstances that contributed to it: a stable homestead, free education, devoted teachers, colleagues we cooperated with. All those who helped us in some way move to the background and so we become the main characters of an event.*

- *Everyone is enticed by the idea that they can achieve success by themselves, that they are absolutely independent, free and capable of self-determination.*

Conflictualist theories oppose functionalist ones and in keeping with the first ones, it is not just the equity of opportunities that matters, but also the equity of opportunities as access, which could be perceived as equity of results. Equity of opportunities is a concept many reforms in education revolve around. Nevertheless, this equity of opportunities has been translated as „equity of access” more often than „equity of results”. When learners go to school they do it on unequal grounds, sometimes the material differences (means of transport to school, private room, personal computer, internet connection, library etc.) are considerable¹⁹. Examining theories that give birth to some answers, aside from historical diversity, we could establish that what is worth valuing in meritology is the urge of giving everything we can, but we should give up the idea that if we achieve success, all the merit is ours and we have full rights over it. We should also get rid of the superiority feeling, generated by a certain social position or wealth,

¹⁹ S. Țoc, *Class and Education. Inequality and Social Reproduction in Romanian Educational System*. Bucharest, Pro Universitaria Publishing House, 2018.

towards the others we worked with but who have been left behind. Whereas our self-perception has improved, the human and moral value of the other has decreased, becoming almost null.²⁰

If this represents the logic of meritology, then everything that has been stated above can generate even more discussions and the problems approached cannot be understood superficially, as a mere statement, but only by and through the relationship it has with the process of developing the learner' personality.

The importance of the binomial evaluation-meritology in pedagogical phenomenology is due to the appearance of one of the most debated intellectual achievements of our time - *the merit of knowledge*. *Bringing forward the relationship between social and pedagogical dimensions of the phenomenon and its assimilation by modern pedagogical thinking through preoccupations to investigate it minutely reshapes the educational process, having an occasional impact on educational policies.*

The relation between school and society has become a complex one, more difficult to manage and assess, channel or strengthen. Present-day school reality highlights selection- based elitism, on the one hand, and the promotion of generalized education which has led to everyone's progressive access to education, on the other. Education is currently facing a variety of issues it has to deal with from both a pedagogical and social perspective. Therefore, an overview of current pedagogical directions reveal that the situation is changing radically, positing the need for new relevant areas, circumscribed to pragmatic educational aspects. Considering the role of meritology, it should be inferred that in education, taken broadly, evaluation does not identify with a mere psycho-pedagogical action to determine the relevance of learners' performance.²¹ The learner's performance, as a complex, significant result can assessed and determined on socio-contextual grounds. Its most precise indicator lies in the learner's observable behavior. Performance reflects a homogeneous system of integrated behaviour within some activity, capitalized through specific behavioral patterns.²²

²⁰ E. Vlădescu, *Dictatorship of Meritocracy*, 2017. [Semneletimpului.ro/ international /economie/dictatura-meritocratiei.html](http://semneletimpului.ro/international/economie/dictatura-meritocratiei.html)

²¹ M. Bocoş, *Didactics of Pedagogical Disciplines. A constructivist framework*. Piteşti, Paralela 45 Publishing House, 2008.

²² *Ibidem*, p. 276.

It is worth emphasizing that the main concerns of meritology entail:

- *Trust in education:*
 - ✓ The partnership talent-capacity for a specific effort, sometimes known as strength of character, depends considerably on genetic dowry and education;
 - ✓ Occurrence intervenes both to ensure somebody's merit and to provide data due to which merit can be transformed into success;
- *Trust in fairness:*
 - ✓ Diligence is perceived as a doctrine, as opposed to laziness and inheritance;
 - ✓ The belief that merit, not social status, determines success or failure;
 - ✓ Equity is present in education;
 - ✓ Rewards for academic achievement are given in keeping with aptitudes and effort;
 - ✓ If successful, merit is entirely ours and we have full rights over it;
 - ✓ It is based on loyal competition;
- *Trust in outcomes:*
 - ✓ Equity of opportunities at the beginning; one starts at the same level with others and gets as far as talent allows for;
 - ✓ Educational outcomes should represent the main recommendation in life;
 - ✓ The concept is tightly connected to efficiency and productivity;
 - ✓ Those achieving the highest levels of efficacy, efficiency, growth can get to the top;
- *Trust in non-discrimination:*
 - ✓ Many have merits in competitive environments, but not all of them get successful;
 - ✓ One's self-appreciation of their own abilities should not lead to selfish behaviour;
 - ✓ Meritology should not lead to flattery;
 - ✓ Meritology represents a rewarding tool for the struggling ones;
 - ✓ The learners are not marginalized and are not subjected to negative attitudes.

In the context of a meritologic approach, it is worth mentioning the Dunning-Kruger effect, which refers to an appreciation error where incompetent individuals over-appreciate erroneously their own

competences. This behaviour reveals their incapacity of a fair appreciation of their competence level, mainly because they lack solid field-related knowledge.²³ A high level of knowledge could cause self-confidence undermining and people may consider fallaciously that others know as much as they do.

D. Dunning and J. Kruger describe the effect as the fallacious appreciation of one's own competence, as well as the wrong evaluation of others' high level of competence. Dunning and Kruger state that the incompetent ones tend to over-appreciate their competence level; will not recognize others' high level of competence; will not be aware of their own incompetence; will become aware of their previous incompetence when they have developed a higher level of competence in a given field.

The Dunning-Kruger Effect, also known as the over-confidence/over-appreciation effect defines a thinking mechanism that generates a self-evaluation error on the basis of which the ignorant, the incompetent ones overestimate their level of intelligence, of knowledge, of competence.

Research led to the following hypotheses:

1. Incompetent people tend to overestimate their competence level.
2. Incompetent people cannot assess fairly the competence level of the truly competent ones.
3. The incompetent ones are not aware of their incompetence.
4. If some experience (studies, trainings, exercises etc.) produce a significant improvement of a person's competence level, they could become aware of their previous deficiencies.

The Dunning-Kruger Effect should not be confused with Peter's principle which states that „in any hierarchy, any employee is promoted up to the highest level of their incompetence.“ The assertion that goes with it states that „long-term, many positions will be taken by employees incapable of taking responsibilities.“

The division of employees in a hierarchy goes as follows: 10% of them are highly incompetent; 20%- incompetent; 40% - relatively competent; 20% -competent; 10%- highly competent. The aspects are significant and easily noticed in the organization and functioning of any institution. As a rule, a competent person can be promoted to a higher hierarchy level, and

²³ *The Effect Dunning-Kruger – Why do ignorant and incompetent people overestimate themselves and are promoted?* Destepti.ro/efectul -dunning-krugind-de-ce-ignorantii

after several such promotions they will get a position where they are incompetent, blocking the ascension of the truly competent ones.²⁴

Since it is easier to be judgmental of other people, we get to believe that we are so much better. The problem of unacknowledged ignorance refers to us all. It should not be viewed as an uninformed brain, it is more that of a misinformed one. Knowledge, which is way-opening, leading to a better future, represents the solution to the situation. Our task is to make sure that the Dunning-Kruger effect does not wreak havoc and does not block progress in a society that is failing and is indulging in educational instability. Hence, a culture of performance through effort should be promoted to overcome this drawback.

Doubtlessly, all these aspects describe, first of all, the new directions in education. Otherwise, it is impossible to refer to something as meritological unless we have some understanding of evaluation, quality, intelligence and so forth. Besides, we cannot explain something as being meritological unless we have some basic understanding of performance. In fact, we advocate the idea that meritology should be concerned with what should be regarded as a person's right to get what they deserve.

Meritology is a strategic field in education. Hence, promoting the idea of meritology is a priority of the national educational system, relying on the joy and satisfaction of learning, on fair opportunities for everyone to achieve success.

The teachers, due to the logic of their activity, ought to ask themselves how they can contribute to emphasizing learners' achievements and never take them for granted.

The teacher decides what to emphasize in this process. Naturally, the teacher should be always absorbed by the problem of how merits can contribute to improving the learner's personality. Teachers' interest in meritology should not represent a transient episode in their career. The purpose is to develop a position that transcends the relativity of some viewpoints limited to teaching itself.

To identify teachers' perception of meritology and its position in their community, a survey was conducted, including 47 teachers pursuing continual professional development courses. The results reveal that for 87% of the teachers' community, the notion of meritology is a new one. In fact, according to them, meritology is just an alternative to competence development. We deem it important to emphasize that in this context,

²⁴ *Ibidem.*

meritology is postulated as a reference for the case when the learner has made some performance. It should be mentioned that out of a series of lexical units denoting merit, such as personal superiority, achievements, the privilege of talent, proven competence, superiority indicator, sovereignty of the best, the teachers opted for personal superiority (about 59%). The majority (about 76%) did not agree with the statement „everyone gets what they deserve” bringing forth social arguments, instead of pedagogical ones (social inequity based on different types of relationships). The most difficult task for the teachers participating in the survey deals with having „to find a balance between learners’ efforts and their results”, because effort is the unseen part of the iceberg; it can only be perceived when related to results.

When asked about their opinion about meritology being a myth, teachers gave a negative answer, explaining that evaluation in its current form is a valid tool of assessing learners’ results both against previous ones and against those of the others. Only 21% of the respondents contend that failure in life is a consequence of not taking full advantage of education. The teachers’ overview of the most prestigious intellectual achievement of our times- the merit of knowledge- is a contradictory one, the discussion being primarily centered on the opposition knowledge-competence: which one is more important in life, and which one is easier to form or develop.

On a concluding note, we would highlight teachers’ formative needs in terms of the relationship intelligence-effort, determining the level of effort, the role of knowledge and intelligence level, establishing merit as an educational indicator.

REFERENCES

Bocoș, M., (2008), *Didactic of Pedagogical Disciplines. A constructivist framework*. Pitești, Paralela 45 Publishing House.

Corutz, P., (2013), *Arrival of Gods*, Bucharest, ALTpublica. books.google.md

Costin, A., *Evaluation Theory and Methodology*, 2nd Part, Academia. Edu /6548392/Teoria-si-metodologia-evaluarii

Cucoș, C., (2017), *Education. Re-establishment, dynamics, prefigurations*, Iași, Polirom Publishing House.

Developers and Competent Evaluation Tools, (2012), Bucharest, The European Social Fund.

The Effect Dunning-Kruger – Why do ignorant and incompetent people overestimate themselves and are promoted? Destepti.ro/efectul -dunning-krugind-de-ce-ignorantii

Kirn, W., *Lost in Meritocracy*, https://www.huffpost.com/entry/does-the-ivy-turn_b_278936

Leu, C., *On Meritocracy. Pale reflections on meritocracy, in the deconcentrated shadow of non-meritocracy.* Boocs.corect.com/ro/boocs/preview/51/pdf

Manolescu, M., (2019), *Evaluation in Education. Meritocracy and Mediocrity.* Bucharest, The University Publishing House.

Meritocrație.ro.wikipedia.org/wiki/Meritocrație

Potolea, D., Neacșu, I., Manolescu, M., (2011), *Methodology for Evaluating Students' School Achievements, General Methodological Guide*, Bucharest, Erc Press.

Radu, I.T., (2007), *Evaluation in the Teaching Process*, Bucharest, The Didactic and Pedagogical Publishing House.

Tănase, M., (2011), *Evaluation- an essential component of the instructional-educational process.* tanasexpert.files.wordpress.com /2011/ 11/evaluare-componenta-esentiala-Brașov.

Torralba, F., (2012), *Spiritual Intelligence*, Bucharest, Curtea Veche.

Țoc, S., (2018), *Class and Education. Inequality and Social Reproduction in Romanian Educational System*, Bucharest: Pro Universitaria Publishing House.

Vlădescu, E., (2017), *Dictatorship of Meritocracy.* Semneletimpului.ro/international /economie/dictatura-meritocrației.html

Тюленев, П.В., (2014), *Наша система образования отстает на 3 тысячи лет.* Proza.ru/2014/05/18/2051

PRE-SERVICE TEACHERS' VIEWS ABOUT THE IMPORTANCE OF TECHNOLOGY IN SCIENCE TEACHING: A CASE STUDY IN BIOLOGY EDUCATION

TUGBA TAFLI*

tugbatafli@gmail.com

ABSTRACT: *The changing needs of the society depending on the information and communication technologies have touched almost every piece of our life. Teachers have to be well trained to meet contemporary teacher standards. Not only the qualified teachers should be equipped with the subject matter of the field and with pedagogical information, but also they should have expertise in technological information. Pre-service teachers who have expertise in biology teaching regarding the interaction between educational technologies, are going to be one of the most important and essential investments for the humanity. In this respect, the major concern of this research is to observe the views of pre-service teachers' about the importance of technology in biology teaching. The research is conducted with the microteaching method with integrated technology applications in biology lessons. The research method is based on case study method with content analysis technique. The data was collected from semi-structured interview form. Before the application, the importance of technology was asked to the participants. The views were coded and categorized into five groups: effective learning, laboratory applications, integrated to the era, information and time. After the application, the advantages, disadvantages and difficulties of the technology were asked in detail and all sections were all categorized like as the beginning groups and more. In the findings part all coded answers with frequency of pre-service teachers were given with tables and some examples of the views are also presented. As a result of the research, benefits of technology integration in the teaching process were identified and the pre-service teachers were all aware of the advantages, importance and necessity of these technologies for biology lessons¹.*

KEYWORDS: *Educational technology, biology teaching, importance, pre-service teachers.*

1. Introduction

The changing needs of the society depending on the information and communication technologies have touched almost every piece of our life.

* Dr. Research Assistant, Faculty of Sciences, Department of Biology, Selcuk University, Konya.

¹ This study was presented orally in the 15th RSEP International Social Sciences Conference.

Teachers have to be well trained to meet contemporary teacher standards. Not only the qualified teachers should be equipped with the subject matter of the field and with pedagogical information, but also they should have expertise in technological information. Information and communication technologies can lead to significant educational and pedagogical outcomes in the schools, and bring major benefits to both learners and teachers^{2,3}.

Pre-service teachers who have expertise in biology teaching regarding the interaction between educational technologies, are going to be one of the most important and essential investments for the humanity. The introduction of educational technologies into classroom settings, teacher education has faced the challenge of preparing pre-service teachers for successful integration of educational technologies into their teaching and learning practices⁴.

It is to ensure that as a necessity of the era technology use is very important in accordance efficient educational environments. Studies have indicated that when teachers believe technology uses are valuable, they are more likely to incorporate those uses into their practices⁵ and it plays a critical role in general instructional practices⁶ as well as specific technology integration practices⁷. Effective teacher preparation is a requirement and it is an important factor for pre-service and in-service teachers in education^{8,9}. When the common technologies in education are

² David H. Jonassen, *Modeling with technology. Mindtools for conceptual change*. (NJ: Prentice Hall), 2006.

³ Mary, E. Webb. Affordances of ICT in science learning implications for an integrated pedagogy. *International Journal of Science Education*. 2005, 27(6), p. 705–735.

⁴ Guoyuan Sang, Martin Valcke, Johan van Braak, Jo Tondeur. Student teachers' thinking processes and ICT integration: Predictorsof prospective teaching behaviors with educational technology. *Computers & Education*, 2010, 54, p. 103–112.

⁵ Anne T. Ottenbreit-Leftwicha, Krista D. Glazewskib, Timothy J. Newbyc, Peggy A. Ertmerc, Teacher value beliefs associated with using technology: Addressing professionaland student needs. *Computers & Education*, 2010, 55, p. 1321-1335.

⁶ M. Frank Pajares, M. F., Teachers'beliefs and educational research: Cleaning up a messy construct. 1992, *Review of Educational Research*, 62, p. 307–332.

⁷ Ken Ryba, Mark E. Brown, How proficient IT teachers integrate computers into the curriculum. *Journal of Computing in Teacher Education*, 2000, 16(4), p.6–11.

⁸ BECTA, *A review of the research literature on barriers to the uptake of ICT by teachers*. British Educational Communications and Technology Agency, 2004, Retrieved 30 April 2016.

examined after the millennium, educational materials, smart (interactive) board, digital experimental instruments, Web 2.0 tools, interactive educational tools, animation and simulations could be some examples. As a result of these tools uses showed that teachers conducted the lesson more effectively and created an active learning environment for students. Thus the students' motivation was increased and they were affected positively in learning process^{10,11,12,13}. In this respect, the major concern of this research is to observe the views of pre-service teachers' about the importance of technology in biology teaching.

2. Method of the research

The research is conducted with the microteaching method with integrated technology applications in biology lessons. Allan (1966) defined microteaching is a teacher training programme which reduces the teaching situations to a simpler and more controlled encounter achieved by limiting the practice teaching to a specific skill and reducing time and class size¹⁴. Case study is an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in a "real life" context¹⁵.

⁹ Athanassios Jimoyiannis, Vassilis Komis, Examining teachers' beliefs about ICT in education: implications of a teacher preparation programme. *Teacher Development*, 2007, 11(2), p. 149-173.

¹⁰ Victoria Armstrong, Sally Barnes, Rosamund Sutherland, Sarah Curran, Simon Mills, Ian Thompson, Collaborative research methodology for investigating teaching and learning: The use of interactive whiteboard technology. *Educational Review*, 2005, 57(4), p. 457-469.

¹¹ Mary Ann Bell, Teacher feature: Why use an interactive whiteboard? A baker's dozen reasons! *Teachers.net Gazette*, 2002, 3(1). <http://teachers.net/gazette/JAN02/mabell.html>

¹² Derek Glover, Miller, David, Averis, Douglas, Victoria Door, The evolution of an effective pedagogy for teachers using the interactive whiteboard and modern languages: An empirical analysis from the secondary sectors. *Learning, Media and Technology*, 2007, 32(1), p. 5-20.

¹³ Steve Higgins, Gary Beauchamp, Dave Miller, Reviewing the literature on interactive whiteboards. *Learning, Media and Technology*, 2007, 32(3), pp. 213-225.

¹⁴ Suganthi S. Kumar, Microteaching-an efficient technique for learning effective teaching. *International Journal of Research in IT and Management*, 2016, 6(8), p. 2231-4334.

¹⁵ Simons, H., *Case study research in practice*. London: SAGE, 2009, p. 21.

3. Participants of the research

The participants of this research are thirty-nine pre-service biology teachers who are affiliated to pedagogical formation certificate program for biology in one of the university in Turkey.

4. Data Collection and Analysis

The data have been collected via semi-structured interview forms before and after the applications. All data have been submitted to ATLAS.ti package program. ATLAS.ti is one of the qualitative data program. As a result of this the data were coded and categorized in tables.

5. Findings and Results

The findings were observed into two sections: Before the microteaching applications and after the microteaching applications.

Before the application, the importance of technology was asked to the participants. According to the views of them, they were coded and categorized into five groups: effective learning, laboratory applications, integrated to the era, information and time. The frequency of the codes (f=89) was shown in Table 1.

Table 1: The distribution of codes and categories related to the importance of technology in biology teaching

CATEGORIES	CODES	FREQUENCY	TOTAL
EFFECTIVE LEARNING	Ensuring permanent learning	16	62
	Presentation of visual materials	15	
	Concretization	14	
	Easy learning	3	
	Attracting students' attention	3	
	Learning by doing	3	
	Preparation of presentation	2	
	Making the learning process fun	2	
	Material design	2	
	Enriching content	2	
LABORATORY APPLICATIONS	Conducting experiments	4	11
	Discovering new creatures	3	
	Using it in experiments	2	
	Conducting research	2	

ADAPTATION TO THE ERA	Tracking the developments	7	8
	Adaptation to the era	1	
INFORMATION	The emergence of new information	3	6
	Accessing to information	2	
	Sharing the information	1	
TIME	Good evaluation of time	2	2

According to this category, some examples given by pre-service teachers are as follows:

B1: *“In order to better explain biology, we need to connect biology with everyday life. This can be quite difficult in direct narration. Experiments or slide presentations with using technology provide a better understanding of the subject matter and make it permanent.”*

B4: *“For example, when students are told about the structure of cells, retention cannot be achieved if information is transmitted only through verbal expression. To prevent this, teaching biology becomes more fun if it is supported by computers, visual presentations, animations, or technology.”*

B10: *“... Since most topics in biology are easily forgettable, the persistence of this can be achieved by transferring them to the student by using technology...”*

B25: *“Biology is very suitable for the use of technology in abstract information to made the subject into concrete. For example, showing an animation is very effective while describing intracellular life and the cell transforms. This makes learning easier and more permanent. It also attracts student interest into the course”.*

The participants also stated the importance of technology in biology classes in laboratory applications (f = 10). Accordingly, they emphasized the necessity of technology in conducting experiments (f = 4), discovering new creatures (f = 3), conducting research (f= 2) and using them in the laboratory (f = 2).

Some examples about this category as below:

B23: *“Since biology is a more experimental and observational course, it is important to use technological methods in the laboratory”*

B37: *“Biology is one of the science lessons that constantly evolving and changing. It is an area where visual and auditory materials should be used. At this point, technology should be utilized. Much more effective applications can be made by using technological test materials in the laboratory.”*

Third category, the integration of the era, addressed the codes of tracking the developments (f=7) and adaptation to the era (f=1). The related answers of the participants as below:

B13: *“Technology is a requirement for the advancement of biology. Because the use of technology is very important for the development of our field...”*

B15: *“I think technology is essential in biology teaching. Because our field is developing and progressing day by day. In this case, we will be able to adapt to our age with technology more permanently.”*

Pre-service biology teachers emphasized the technology’s importance in biology courses; they have a role in the emergence of new information (f= 3), accessing to information (f= 2) and sharing information (f= 1). Some of the statements given by the pre-service biology teachers regarding the combination of coded expressions under the information category (f= 6) are as follows:

B11: *“...Easy access to information through technology accelerates the process of turning to new research.”*

Pre-service biology teachers also mentioned the importance of using technology in biology teaching to evaluate the time well (f=2). The statements given by them are as follows:

B6: *“...Teaching some abstract subjects using technology reduces time loss and enables effective learning as soon as possible”*

After the microteaching application, the advantages, benefits, disadvantages and difficulties of the technology were asked to the participants in order to define the importance of technology in biology teaching.

In accordance with the answers about the advantages of technologies given by participants were coded and categorized in Table 2 (f=88). In this table the categories names were created as the same as Table 1. The most mentioned category was again found as the effective learning and respectively the other categories were time, information and adaptation to the era.

According to Table 2, pre-service teachers stated the advantages of using technology in biology lessons especially under the category of effective learning and teaching (f=57). Accordingly, it was emphasized that the students achieved a permanent learning with the use of technology (f=14), provided their attention the lesson (f=13) and that the subjects were learned more easily (f=10). In addition, it was emphasized that the use of technological tools creates visual richness in the teaching process (f=6), the learning process becomes more fun (f=6) and the

students are more active (f=4). It has also been stated that technology is used in relation to the concretization of some abstract subjects (f=2), and that the use of technologies by teachers provides teachers with ease in teaching (f=2).

Table 2: The distribution of codes and categories related to the advantages of technology in biology teaching

CATEGORIES	CODES	FREQUENCY	TOTAL
EFFECTIVE LEARNING	Ensuring permanent learning	14	557
	Attracting students' attention	13	
	Easy learning	10	
	Presentation of visual materials	6	
	Making the learning process fun	6	
	Activating students	4	
	Concretization	2	
	Easy teaching	2	
TIME	Saving on time	11	111
INFORMATION	Fast access to information	6	110
	Updating the information	4	
ADAPTATION TO THE ERA	Adaptation to the era	3	33

Some example statements are as below:

B9: *"... We can make the students learn permanently by showing, using or practicing with technological tools. For example, teacher can use presentations, or can show videos or draw a graph via a smart board. Thus, the teacher can teach and the students can learn easily."*

The participants also emphasized about the advantages of using technology about saving on time in lessons (f=11), fast access to information (f=6), updating the information (f=4), and adaptation to the era (f=3). Some examples of these expressions are given as below:

B15: *"I find it advantageous in terms of keeping information in mind and providing permanent learning by students. Also time loss is reduced by using educational tools..."*

B31: *"I think it's always useful as long as we make good use of technology in the biology lessons. It takes less time to teach for the topic. It enables the student to concentrate more easily in the classroom. Students can also keep their attention at the highest level. It enables the teachers to continuously improve his / her own technological knowledge and to adapt the era."*

B32: "...Using technology increases students' interest to the lesson and updating information by using technologies can provide students to learn easily and make much permanent learning."

The benefits of educational technologies were also categorized into two sections as for the teachers and the students. As a result of the statements, the codes were shown in Table 3. According to this, they stated the benefits for students (f=72) more than the benefits for teachers (f=60).

According to Table 3, pre-service teachers emphasized the most benefits of technologies for students ensuring permanent learning (f=18), enriching the teaching process (f=15) and facilitates learning (f=14). The other benefits for teachers were emphasized mostly that saving time (f=20), attracting students' interest more easily (f=14) and making an effective teaching (f=12).

Table 3: The distribution of codes and categories related to the benefits of integrating technology in biology teaching

CATEGORIES	CODES	FREQUENCY	TOTAL
Benefits for students	Ensuring permanent learning	18	72
	Enriching the teaching process	15	
	Facilitates learning	14	
	Ensuring the realization of the subject	9	
	Students become more active in the classroom	9	
	Making the course more fun	7	
Benefits for teachers	Saving time	20	60
	Attracting students' interest more easily	14	
	Effective and efficient teaching	12	
	Easy use of technological instruments	7	
	Facilitating teacher's work	5	
	Understanding the necessity of technology	2	

Some examples were given as below:

B25: "We have the opportunity to present the course more vividly and visually richer by the technological products. So we have the chance to embody abstract concepts and events in the course. The student listens to

the class on a material that he sees, hears or even looks at. Thus, learning takes place fully and permanently.”

B40: “It was advantageous in terms of the implementation of the lesson plan, better evaluation of time and the interest of the student during the lesson.”

B11: “In my opinion one of the most important benefit is that time has been saved and time has been used more effectively. For the students, learning became easier, reinforcing the knowledge better, and also helped with persistence learning. They aroused more interest than the classical methods, brought vitality to the class, they had a lot of fun.

B29: “It prevented the loss of time by drawing figures. The pictures with smart board make permanent understanding for students while they were imagining.”

The disadvantages of the technology use in biology lessons were also asked to the pre-service teachers. In accordance with the answers, the codes were categorized in Table 4 and it defined as information, education, inequality, costs, technological problems and time.

Table 4: The distribution of codes and categories related to the disadvantages of technology in biology teaching

CATEGORIES	CODES	FREQUENCY	TOTAL
Information	Access to ready-made information	8	10
	Access the wrong information	2	
Education	Distracting students	5	8
	Passivation of teachers	3	
Inequality	Lack of equal opportunities in schools	5	5
Cost	High cost	4	4
Technological problems	Malfunction	1	2
	Radiation	1	
Time	Time loss for teachers while preparing the lesson	1	1

The participants stated the disadvantages of using technology in the teaching process, especially in terms of information (f = 10) category, in addition the others are about education (f = 8), inequality (f = 5), cost (f = 4), technological problems (f = 2) and time (f = 1) categories. Under the information category; some of the disadvantages of the technology are coded as students' access to ready-made information (f = 8), and Access

the wrong information (f = 8). It was emphasized that the use of technology in the education process distracted the students (f = 8) and made teachers more passive (f = 3). In the cases where the technologies provide inequality in education because all schools in our country do not have equal opportunities (f = 5). Other statements were less about the malfunction (f=1), radiation exposure (f=1) and causes time loss for teachers while preparing the lesson (f=1).

Some of the answers of participants according to the disadvantages of technology in the teaching process are as follows:

B10: “ ... Students can access a lot wrong information from the internet.”

B13: “...Technology can sometimes distract students very quickly.”

B15:“...The fact that schools in our country do not have equal opportunities can be seen as a disadvantage since it will have different effects on the learning process of the students in these schools.”

B22: “ ... installation of technological systems cost too much. If there is no opportunity in every school, there will be no equality in education...”

Finally after the applications the difficulties of the technology were asked to the participants while they were presenting their lessons. Half of the participants stated that they had some troubles while they were using technology but half of them did not. According to the given troubles the statements were shown in Table 5. Problems categorizes into four sections: related to the use of Technologies (f= 9), personal problems in the use of Technologies (f=7), time problems (f=5) and physical environmental problems (f=2).

Table 5: The distribution of codes and categories related to the difficulties of technology in biology teaching

CATEGORIES	CODES	FREQUENCY	TOTAL
Problems related to the use of technologies	Transferring the microscope image to the screen	3	9
	Using LabQuest	2	
	Animations are usually in foreign languages	2	
	Difficult to find educational software	1	
Personal problems in the use of technologies	Lack of animations on the subject	1	7
	Problems in using new technologies	4	
	Inadequate feeling about the use of technology	1	
	Inadequate feeling about preparing animations	1	

	Inadequate feeling about preparing simulations	1	
Time Problems	Insufficient time	5	
Physical environmental problems	Power cut-off	2	7

Some example expressions about the difficulties of the participants had on the lessons are given as follows:

B18: *“I had some difficulties in transmitting the microscope image to the screen first but after I solved the problem, the result was really good. I was able to show the microscope image to the whole class at the same time.”*

B38: *“I had some problems about finding the related animations and simulations on my subject. I have come across many animations in a foreign language which I think was a big shortcoming.”*

B33: *“Since I have never used (or never seen) the LabQuest, I was hesitant to use it. But when I learned how to use it, I hesitated.”*

B25: *“During the presentation, the electricity was cut off 3 times in a row. Computer and projection shut down. We reopened it every time. This resulted in a waste of time.”*

According to the findings of the research, similar studies support the results of this study. The use of technology in the education and training process helps students to realize permanent learning, enrich the teaching process and active learning. In addition, it is emphasized that the use of technology causes enjoyable courses and time saving^{16,17}. Within the scope of the study, it was determined that pre-service teachers' have experienced some problems related to using and integrating technology in the teaching process. In another study, it was stated that these problems may arise from the lack of undergraduate education^{18,19}. For this reason more

¹⁶ Didem İnel, Ertuğ Evrekli, Ali Günay Balım, Öğretmen adaylarının fen ve teknoloji dersinde eğitim teknolojilerinin kullanılmasına ilişkin görüşleri. Kuramsal Eğitimbilim,2011, 4(2), p.128-150.

¹⁷ İdris Yılmaz, Hakkı Ulucan, Sezer Pehlivan, Beden eğitimi öğretmenliği programında öğrenim gören öğrencilerin eğitimde teknoloji kullanımına ilişkin tutum ve düşünceleri. Ahi Evran Üniversitesi Eğitim Fakültesi Dergisi, 2010, 11(1), p.105-118.

¹⁸ Hasan Karal, Muhammet Berigel, Eğitim fakültelerinin öğretmenlerin teknolojiyi eğitimde etkin olarak kullanabilme yeterlilikleri üzerine etkileri ve çözüm önerileri. Çukurova Üniversitesi Eğitim Fakültesi Dergisi,2006, 32(2), p.60-66.

technological courses and trainings for pre-service teachers are recommended in undergraduate education.

REFERENCES

Armstrong, V., Barnes, S., Sutherland, R., Curran, S., Mills, S. & Thompson, I., (2005), Collaborative research methodology for investigating teaching and learning: The use of interactive whiteboard technology. *Educational Review*, 57(4), 457-469.

Becta, (2004), *A review of the research literature on barriers to the uptake of ICT by teachers*. British Educational Communications and Technology Agency.

Bell, M.A., (2002), Teacher feature: Why use an interactive whiteboard? A baker's dozen reasons! *Teachers.net Gazette*, 3(1). <http://teachers.net/gazette/JAN02/mabell.html>

Glover, D., Miller, D., Averis, D., & Door, V., (2007), The evolution of an effective pedagogy for teachers using the interactive whiteboard and modern languages: An empirical analysis from the secondary sectors. *Learning, Media and Technology*, 32(1), 5-20.

Higgins, S., Beauchamp, G. & Miller, D., (2007), Reviewing the literature on interactive whiteboards. *Learning, Media and Technology*, 32(3), 213-225.

Jimoyiannis, A., & Komis, V., (2007), Examining teachers'beliefs about ICT in education: implications of a teacher preparation programme. *Teacher Development*, 11(2), 149-173.

Jonassen, D.H., (2006), *Modeling with technology. Mindtools for conceptual change*. NJ: Prentice Hall.

İnel, D., Evrekli, E., & Balım, A.G., (2011), Öğretmen adaylarının fen ve teknoloji dersinde eğitim teknolojilerinin kullanılmasına ilişkin görüşleri. *Kuramsal Eğitimbilim*, 4(2), 128-150.

Karal, H. & Berigel, M., (2006), Eğitim fakültelerinin öğretmenlerin teknolojiyi eğitimde etkin olarak kullanabilme yeterlilikleri üzerine etkileri ve çözüm önerileri. *Çukurova Üniversitesi Eğitim Fakültesi Dergisi*, 32(2), 60-66.

¹⁹ Gül Özüdoğru, Hasan Çakır, Öğretim elemanlarının bilişim teknolojileri kullanımında öğretmen adaylarına model olma farkındalıklarının incelenmesi. *Kırşehir Eğitim Fakültesi Dergisi*, 2014, 15(2), p. 207-226.

Kumar, S.S., (2016), Microteaching-an efficient technique for learning effective teaching. *International Journal of Research in IT and Management*, 6 (8), 2231-4334.

Ottenbreit Leftwich, A.T., Glazewski, K.D., Newby, T.J. & Ertmer, P.A., (2010), Teacher value beliefs associated with using technology: Addressing professional and student needs. *Computers & Education*, 55, 1321-1335.

Özüdoğru, G. & Çakır, H., (2014), Öğretim elemanlarının bilişim teknolojileri kullanımında öğretmen adaylarına model olma farkındalıklarının incelenmesi. *Kırşehir Eğitim Fakültesi Dergisi*, 15(2), 207-226.

Pajares, M.F., (1992), Teachers' beliefs and educational research: cleaning up a messy construct. *Review of Educational Research*, 62, 307-332.

Ryba, K., & Brown, M.E., (2000), How proficient IT teachers integrate computers into the curriculum. *Journal of Computing in Teacher Education*, 16(4), 6-11

Sang, G., Valcke, M., Braak J. & Tondeur, J., (2010), Student teachers' thinking processes and ICT integration: Predictors of prospective teaching behaviors with educational technology. *Computers & Education*, 54, 103-112

Simons, H., (2009), Case study research in practice. London: SAGE

Webb, M.E., (2005), Affordances of ICT in science learning implications for an integrated pedagogy. *International Journal of Science Education*, 27(6), 705-735.

Yılmaz, İ., Ulucan, H. & Pehlivan, S., (2010), Beden eğitimi öğretmenliği programında öğrenim gören öğrencilerin eğitimde teknoloji kullanımına ilişkin tutum ve düşünceleri. *Ahi Evran Üniversitesi Eğitim Fakültesi Dergisi*, 11(1), 105-118.

ECONOMICS OF EDUCATION AS GUIDANCE TO FIGHTING INEQUALITY

ANDREI MUNTEANU*

luimunteanu@yahoo.com

ABSTRACT: *Inequality is a perennial phenomenon and it is very hard to believe it will ever be totally uprooted. The problem of inequality, due to some reasons, is inherent to human nature and nevertheless, it can be qualifiedly controlled. It requires on-going skills improvement, because it is a serious source of conflict. Usually it is used for speculative and manipulating purposes by various governments, but most important, it is an immense field of actions for R&D sector and education, particularly in economic sciences education. The aim of the latter is to find answers and prove scientific grounds, in as much as to make possible avoid conflicts and foster higher living standards. Most outstanding economists and scholars of the world have researched inequality. For many peoples it is a serious challenge, for many others it is cause for worry, frequently entailed by economic depressions. The success of the humankind in avoiding eventual armed conflicts heavily depends on the ability to diminish the inequality gap.*

There is a complex bunch of factors and/or variables to be considered for eventually raising wellbeing, which cause inequality in different countries, including at international level. An answer to this question could be easier to understand in the context of the strong correlation between the idea systems of Economics of Education (EE) theory, International Economic Integration (IEI), and chances of getting International Comparative Advantages by less developed countries. This correlation is discussed through the angle of a comparison between potentially promising practices, in terms of economic studies and performance, and educational practices in many poor countries, which still seem to keep being "false expectation builders".

KEYWORDS: *economic sciences education, idea systems, R&D, idea production.*

1. The lessons of the economic history

Sources of economic history provide data that "during the past half century, the pace of economic globalization (including the reversal of the interwar decline) has been particularly rapid. And, with the exception of human migration, global economic integration today is greater than it ever

* University lecturer for the School of Economics and Management, Jiujiang University, China; PhD candidate, State University of Moldova.

has been and is likely to deepen going forward”¹. On the other hand, it is also quite known that in the early 1950’s was the commencement of calculation of Returns to Education (*RE*), owing to intense expansion of *EE* theory. The latter comprises two compounding and opponent theories of *human capital* and “*screening*”/“*filtering*” hypotheses. The strong correlation between globalization², *EE* and *RE* calculation seems to be convincing, because it entailed a sound shift from: (i) planning education based on demographic data, to (ii) planning education based on financial analysis and aim to raise the wellbeing of the countries by focus on *utility*; from a culture of *knowledge accumulation* to *education as a system of ideas and skills production*.

The shift stated above produced many changes, first-and-foremost the need for improvements in teaching and evaluation, different criteria for teachers’ motivation, training and evaluation. Some other, both direct and spill-over effects, were as follows: “renewed” definition of education quality, more creative approaches to student evaluation, new perceptions on quality of skill and idea production, as cornerstone component of *idea systems* and *relevance*; i.e. ideas tailored to specific needs of specific countries to overcome economic crises and adjust easier to *international economic disequilibria* (IED), as well as *identify plausible causes of phenomena in explaining diversity*³.

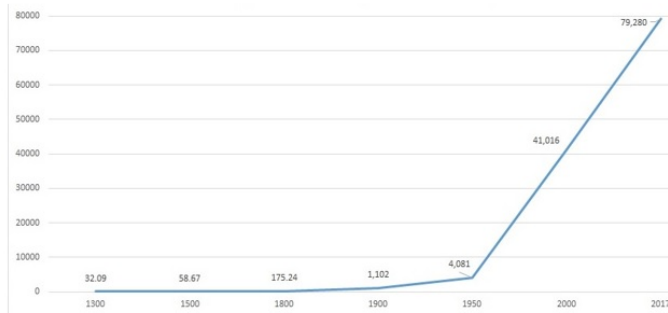
The strong correlation between globalization and *EE*, particularly calculation of *RE*, is essential for further discussion given their coincidence with a particularly intense growth of the Global GDP, analyzed since the 13th century (Fig. 1.1.).

¹ Mussa, M., Factors Driving Global Economic Integration. At: <https://tinyurl.com/yc6jbhg2>, 2000, (visited: 2018.07.04).

² Globalization in this paper is defined as joint responsibility of the countries worldwide, to assume responsibility for our planet, how to take care of and how to preserve it, combined with raising economic interdependence in the world, implied by quick increase of innovational rate.

³ Bugudui, E. & Ciobanu, Gh. (2012). Theory Forms in Unemployment. In: Revista Română de Statistică – Supliment Trim II/2012, p. 1, at: <https://bit.ly/2Ps65VH>, (visited: 2019.09.15).

Fig. 1.1. Global GDP, (\$ billions, 1990 intl\$)



Source: developed by the author, based on:
<https://tinyurl.com/hhanwao> and <https://tinyurl.com/ya9jk63k>,
visited on: 2018.03.9.

Beyond discussions about recent and any other economic crises, either faced at country, regional or global levels, the ongoing growth of Global GDP is quite convincing that growth has never ceased after 1950s, whereas inequality keeps being a hard pressure. Raising Global GDP and widening inequality gap is a serious challenge that needs to be thoroughly researched and debated. Erroneous conclusions and/or interpretations imply a lot of potential conflict, at both national and international levels. In order to alleviate conflict, the *cause and effect relationship* analysis has no better alternative.

Further analysis of the topic uncovers that in nowadays reality, educational content selection and analysis becomes more and more time-consuming, which also justifies the need of particular importance of criteria for choosing teachers and/or professors, in economic sciences particularly.

One of the major problems, little or no discussed at all, is the quality of economic sciences and contents taught in less developed countries. Let us take for example a claim, as follows: "As it is commonly known, the contemporary economic science still keeps being mostly, anchored on the theoretical principles of Isaac Newton's mechanics, which makes abstraction of the role played in economic life by spiritual traits of the individual, of his or her wishes, imagination, prayers and expectations"⁴.

⁴ Moldovan, D., *Rethinking some postulates of the economic science through the angle of "Creative Imagination Theory"*. In: Classical and Innovative Approaches of Contemporary Economic Thinking, 1st Edition of the International Scientific Conference, Academy of Economic Sciences of Moldova, ASEM, 2015, p. 9. Translated by the author.

Then series of thoughts continues, that: "...the material world appears from a world of eternal and inexhaustible energies, entailed by a "mysterious contact" between the consciousness of the individual and elementary particles [*i.e.* quanta]" (*ibid.*, p. 10), and that "...the whole economic activity is subjected to the action of the determinism principle, according to which [...] the economic activity, as well as national economy, can be forecasted in terms of timing, their results being "known" long before unleashing the production process as such." (*ibid.*, p. 11). Also according to him, in the period after the WW-II, it just "...rained with economic miracles. We shall remind here the German one, Italian, Japanese, Chinese, and that of the Asian tigers" (*ibid.*, p.p. 12,13). The statements above contradict the Menger's *law on cause and effect relationship*. This kind of "value of thinking" category⁵, is shared by many more professorate and teaching staff. The claims of the professor Moldovan seem to "defeat the very purpose of [economic] thinking itself"⁶, it contradicts the idea that: "not least because sources uncover, that China has been calculating the *RE* since 1990's⁷, and the other countries used to do so several decades earlier. It is again, very timely to bring up that "Albert Einstein has been widely quoted as saying, "The most incomprehensible thing about the universe is that it is comprehensible""⁸.

Proceeding from the point of idea production, one could agree that: "The big surprises do not come from substances and materials, they come from another forms of their organization and presentation. The abstract is a richer source of the new than the concrete"⁹. The viewpoint of the professor Moldovan is *biased towards hypotheses of screening and/or filtering*, and when ideas of this quality prevail in the economic education of a poor country, it cannot build up sound chances to overcome crises and get

⁵ Paul, R., (2015.a.). *Write: How to Teach Students to Write Well*. At: <https://tinyurl.com/yaewr6o2>, min. 2:40, (visited: 2018.07.05).

⁶ Paul, R., *Critical Thinking - Standards of Thought - Part 1*. At: <https://tinyurl.com/luqt28u>, min.1:15, (visited: 2018.07.07).

⁷ Awaworyi, S. and Mishra, V., *Returns to Education in China: A Meta-analysis*. Department of Economics ISSN 1441-5429, Discussion paper 41/14, Monash University, 2014, p. 4.

⁸ Ross, H., *Why the Universe is the Way it is*. Baker Books Publishing Group, USA, 2008, p. 14.

⁹ Micloveanu, Sh., *Encyclopedia for Intelligence*, Vol. VI: 1981-2336. TCM Print, Bucharest, 2005, p. 21.

adjusted to *IED*. This kind of view could raise at least several rhetorical questions:

- If economic activity and national economy can be forecasted in terms of timing, and their results being “known” long before unleashing the production process as such, does this kind of economics teaching provide for best possible output of economic sciences in a country?
- If the material world appears in a world of eternal and inexhaustible energies, entailed by a “mysterious contact” between the consciousness of the individual and quanta, what is the use of economics study at all?
- Why in countries with poor quality of economic education is so difficult to apply practices commonly acknowledged as good, in the highly industrialized economies?
- Why in countries with poor quality of economic education is so difficult to apply better education policies for raising tempo of economic growth?
- Should investments in education, particularly economic education, have been in due amounts to make possible produce higher return(s), would this kind of ideas appear in economic sciences at all?; and the like.

Although obliquely, Professor Richard Dawkins¹⁰ makes some challenging suggestions about this kind of education, when trying to pay attention to the huge risks entailed by the “enemies of reason”, which sabotage the potentially higher-capacity performance of science. The undermining effect could be, however, tenfold more destructive for development, when *economic sciences* are mingled with mystics.

Fray Bruno¹¹ also uncovers more crucial details of the risks faced by economic sciences:

“Economics is inundated with boring and irrelevant papers. They lack originality and produce only small variations on themes commonly accepted within the discipline. Economics loses its importance for advising governments and becomes increasingly less attractive as a field for students”.

¹⁰ Dawkins, R., (2015), *Enemies of Reason - Slaves to Superstition*. At: <https://tinyurl.com/y7ds6oar>, (visited: 2018.07.04).

¹¹ Bruno, F., (2003). *Publishing as prostitution? – Choosing between one’s own ideas and academic success*. Institute for Empirical Economic Research, University of Zürich, p. 218, at: <https://tinyurl.com/y6wukkjk>, (visited: 2018.07.03).

When some professorate keep training economists to spend time on “seeking” links between economics and *mystics* or *determinism*, this is an additional way of “contribution” to economics’ lose its importance. One of the biggest problem that should be fixed, before expecting to get some higher life quality standards of a country, is to develop due *stimulant systems* for *teaching better quality economics* and renewed criteria for *quality assessment* of teaching and R&D for those countries.

Given an avalanche of economic sciences literature, another major task of the field is to struggle avoid any risk of being a mere “conveyor” of information from one source to another; it should avoid any risk of “simply taking [economists] to the level of a tape recorder”¹². Max Weber’s observation in his “*Protestant ethic* theory, [...] that predominantly Protestant countries were the most economically developed; [...]and having] attributed this “ethic” to an outgrowth of the Protestant Reformation in sixteen-century Europe, which reflects the belief that work is a pathway to salvation and that material success does not impede salvation”¹³, allows us to admit that economics have been researched long ago, in terms of various types of correlations, that seeking correlations matter. Economics have struggled hard to explain economic dynamics in the past, as lessons for the future. Recent and nowadays economics goes even further into dimensions like *economics of religion*¹⁴, *economics of justice*¹⁵, and the like. It could be worth considering, still, that Weber speaks about a period starting since the 16th century, whereas *RE* started to be calculated since 1950s, and it coincides much closer with the starting point of *globalization* and “*skyrocketing*” Global GDP. Despite of that, if understood, interpreted and taught qualifiedly, economics of religion is plausible as field of studies, given that it cultivates: “provision of service and needs, that are shared to other society [...]; getting friendships, [...] getting social interactions, help and support; their children are socialized and given values [...], they are getting economic help”¹⁶. So, it does not even give a hint to “find excuses” of poverty by *determinism*. Even more so, economics of religion could be

¹² [6], min. 16:45, (visited: 2018.07.05).

¹³ Daniels, J.D., Radebaugh, L.H. & Sullivan, D.P., (2013), *International Business*. Pearson, p. 105.

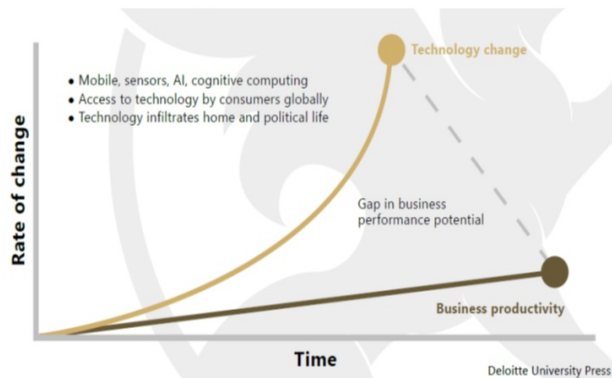
¹⁴ Iannaccone, L., (2015), *Larry Iannaccone talks to Oliver Marc Hartwich on the Economics of Religion*. CISAus. At: <https://tinyurl.com/yajswsjb>, (visited: 2018.07.06).

¹⁵ Maloney, D., (2007). *The Economics of Justice*. At: <https://tinyurl.com/y7oa8glt>, (visited: 2018.07.06).

¹⁶ [14], min. 12:45-14:35).

considered as providing higher qualified insights into the life quality subtleties, by statements such as: "...Jesus Christ has come to teach us how to manifest in the quantum field."¹⁷ The latter keeps challenging the importance of understanding and developing *critical thinking*, even proceeding from interpretations of formerly rigid and solidified dogmas, and does not attribute the role of education and training, economics including, to neither determinism nor mystics. Or, economists' training and economic culture in general, are a paramount "ring" in the *value chain* of poor countries' need to get adjusted to *IED*.

Fig. 1.2. Technology vs. Business productivity gap



Source: DUP, (2017).

Both Bruno's and Dawkins' views commonly admit that economics as a science is in critical difficulty. Deloitte Company publication of the Code of Talent White Paper (Fig. 1.2.)¹⁸ endorse the claims above, that economic sciences lag behind in terms of creativity performance, on its *major aim* to produce skills of building up *added value* for larger groups of people in a country. In line with many other definitions of economics given before, it should be always intertwined with the purpose to *create social environments to make possible transform innovations of the other fields of sciences* (such as IT, AI, sensors and the like), *into real life higher standards of living, to largest possible strata of population*. The lagging behind in terms of Technology vs. Business Productivity Gap (TBPG) is significant worldwide, and it is so much more pressing in less developed countries.

¹⁷ Ledwith, M., (2014), TVR Cluj_Stiinta si Cunoastere_Interviu cu Miceal Ledwith Ep1 2014/TVR Cluj Science and Knowledge with Miceal Ledwith Part.1 2014. At: <https://tinyurl.com/ybq5gmjg>, (visited: 2018.07.06).

¹⁸ DUP, Code of Talent White Paper. Deloitte University Press (DUP), 2017, p. 12. At: <https://tinyurl.com/y87k73nf>, (visited: 2018.07.04).

2. Economics of education as a way out

After 1950's the concept of educational investments became more convincing to policy makers than before, proceeding from many previous conclusions of researches. One example could be the survey carried out by Psacharopoulos in 44 countries (1958 to 1978). The conclusions of the research were that education investments generated *social and private rates of return*, as follows:

“(i) The returns to primary education (whether social or private) are the highest among all educational levels;

(ii) Private returns are in excess of social returns, especially at the university level;

(iii) All rates of return to investment in education *are well above the 10 per cent common yardstick of the opportunity cost of capital* [emphasis added];

(iv) The *returns to education in less developed countries are higher* [emphasis added] relative to the corresponding returns in more advanced countries”¹⁹.

The 3rd and 4th conclusions at least, provide plausible grounds to infer, that:

(i) adjustments to international economic disequilibria are possible, should investments in education be made in amounts plausible and *suffice* to reach this aim, combined with feasible and qualified management;

(ii) calculation of the *RE* can be a better guiding indicator in macroeconomic analysis, than GDP per capita, though the latter should not be excluded; calculation of *RE* takes into account the incomes already shared and having reached the household budgets;

(iii) the governments can stimulate and foster the process of adjustment to *IED* by raising societal capacities to understand and guide educational practices, to make possible increase the economic performance by better and more equitable educational policies and qualified management;

(iv) should the government display political will to develop and use *stimulant systems* for genuine economic growth, *RE* seem to be the most plausible indicator for analysis and decision making;

¹⁹ Psacharopoulos, G. cited in Woodhall, M., (1995, p. 24). *Human Capital Concepts*, in: M. Carnoy (Ed.), International Encyclopaedia of EE. Pergamon Press, Oxford.

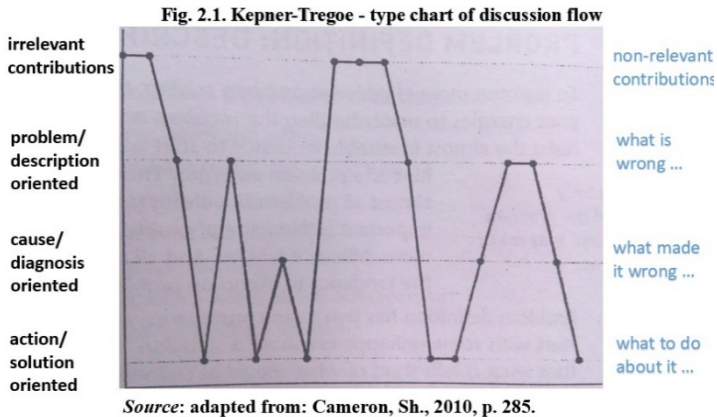
(v) the major role in the process should be assigned to economic sciences faculties/departments of respective countries; just to mention a few.

Ways to potentially diminish the gap between the technology change trend and business productivity, can be many, both worldwide and in less developed countries in particular. Yet much time can be lost if timing and sequence of actions are not relevantly prioritized. The pressures on the fate of economic sciences for the future depends, seemingly, first and foremost by the quality of leaders of opinion and/or policy makers in the R&D and faculties.

Albert Einstein has been quoted in various sources to have stated that: "To discover a potential problem is much more important than to solve it." Other outstanding points on the problem could be mentioned as follows: "We got to get people to think right, before they do right"²⁰, and in this committed challenge of the economic sciences: "Nothing is so practical as a good theory"²¹. If authors quoted above unveil defining a problem so uneasy in highly performing economies, the situation in less developed economies is so much harder and, it can worsen, if the attitude towards the economic sciences continues to be perfunctory. Opinion leaders and policy makers should raise the question, whether mankind could have a potentially better way out without economic sciences. The challenge of inequality does not seem possibly addressed alternatively than by raising *economic culture*, based on renewed *stimulant systems*, by means of *higher investment shares* into the aim of making economic sciences more lucrative. Higher investments produce higher competition in the field, and higher competition produces higher quality, which starts to produce more ideas of better quality and trigger growth that is more dynamic.

²⁰ Thornton, M., "350 Years of Economic Theory-Mark Thornton", (min. 46: 12), at: <https://tinyurl.com/ybxz35om>, (visited: 2008.07.04).

²¹ Nyilasy, G. and Reid, L., "The academician-practitioner gap in advertising", cited in *Marketing Research an Applied Approach*, by: Malhotra, N.K., Birks, D.F and Wills P., 4th edition, 2012, p. 61.



With regard to specific economic sciences' role in raising life quality, one more very important component is the problem of R&D evaluation, and economic sciences' teaching quality. Given Richard Pauls' claim about the "systems of ideas" and "the world of many logics"²², seeking correlations between the two produce more skills and a better way out, in terms of educating better economists, *instead of* spending time on trying to make inferences on links between economic sciences and *mystics*. If the second prevails, this kind of approach will spend more time on the problem than on *finding solutions* (Fig. 2.1.). *Correlative thinking* applied to Kepner-Tregoe Type Chart suggests, that time can be used less efficiently not only in discussions, but in any other process, education and studies of economics including. Combining thus sciences with *mystics*, keeps the process mostly focused on the problem (e.g., lack of performance, poverty), by using lots of professional clichés, but with low or very little efficiency and effectiveness. The logic of forthcoming professional economists could be considerably "give-in" compared to their peers from other countries, trained based on "less *mystics*" theories, as part of the training process, and trained with a view to better: manage the change, better use of timing for reaching comparative advantages, etc. Improper use of timing in education and R&D can be eventually used to keep the people "demoralized", instead of using the process to help and build-up human capacities.

Following the idea of "intellectual discipline"²³, indeed, no one can require the scientists highlight correlation *between "mainstream"/economic*

²² [6], min. 10:02.

²³ Paul, R., (2015.b.). *How to Teach Students To Seek The Logic of Things, Part 2*, min. 1:22. At: <https://tinyurl.com/y8elpcap>, (visited: 2018.07.05).

sciences and EE, instead of relationships *between economic sciences and mystics*; or, say, between the *EE* and *IEI*. If this does not take place, however, with the time passing inequality deepens, of economic culture first-and-foremost, which produces undesirable effects, such as: (i) difficulties to adjust to supply and demand disequilibria of skills on the labor market, (ii) discourage higher qualified individuals to stay in social milieus with obvious shortage of skills, etc. This usually triggers disequilibria of incomes at the country level, accumulates stress, which entail quickly lack of ethics in business life, corruption, and eventually inequalities in bigger dimensions, at international level.

We have seen professor Moldovan having mentioned about “imagination”. It is commonly known that Karl Marx in his works also mentioned about its importance: “A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality”²⁴. Mention about imagination is important, and Marx claims it is a unique trait of human beings.

Yet, talking about imagination in terms of economic thinking is worth being touched upon, proceeding from invoked relationship between economic sciences and *mystics*. They do not seem to regard imagination as being possibly cultivated, as suggested by the principle of *intellectual discipline, systems of ideas* and building relationships between them and historical events, through the angle of the *cause and effect law*, which matters.

Just for example, it is widely known that: “In 1923, a German housewife burned mark notes in her kitchen stove, since it was cheaper to burn marks than to use them to buy firewood; [and that] in Germany in 1923, you needed 726,000,000 marks to buy what you'd been able to get for 1 mark in 1918,”²⁵. As a rhetorical question one might raise a question - could we exclude that such a hyperinflation in Germany was a major trigger of panic, which later worsened into a major cause of the WW-II? Any attempts thus to research for development and teach economic

²⁴ Marx, K., (n.d.). Capital. Cited in Watt, R., Property, Labour and Theft, p. 5. At: <https://tinyurl.com/y7myuwym>, (visited: 2018.07.05).

²⁵ The Wall Street Journal, Guide to Understanding Money & Investing, 1993. Lightbulb press, Inc., 1993, p. 7.

sciences beyond the *law of cause and effect* may be improper use of time, for the purpose of economic sciences.

Getting back to the quality of imagination, it is an important intellectual asset in producing a significant impact on the quality of *interpretation* and *idea production*, which can be developed by means of *hermeneutics*. Stemming from *hermeneutics* as science, and depending on interpretation of different life/economic situations, it influences on how well it can be addressed, or whether it is possible to address at all; whether it helps to organize educational and/or R&D activities either better and more motivationally, or confusing, *i.e.* inducing to ... "determinism".

The concept of Value Chain applied with a view to analyze the macroeconomic system of a country, would not be entirely meeting the need to face the challenge of TBPG diminishing, should it not be taken into account that "Over 80% of market value in today's global markets is allocated to intangible assets"²⁶. Given the above, teaching economics and/or economists' training worldwide seems in need of soundly changed approaches, policies and investment policy in this field.

The debate about how much mathematics in training economics is also more than welcome. A deep approach of this is provided though the angle of: "Too much Maths, too little History..."²⁷, but it does need to be granted a more thorough attention and research, in order to foster possible economic sciences produce added value enough, so as to make possible diminish the TBPG, and inequality. Concerning how much maths is essential, given that its improper "dosage" could be more discouraging for forthcoming students and adults, to take recurrent courses in economics. Following again the concept of multiple logics of Richard Paul, mathematics seems to be more related to the "logic of precision", correlating closer with fields like engineering, programing and statistics. Nowadays economics, however, needs to: identify problems, justify the importance of teachers' economic motivation, cultivate and develop skills of analyses and decision-making, production of added-value by means of *ideas* and *thinking skills* production, which correlates mostly with *idea system* of the *economics of education*, teaching skills and contents used in the education process, and the like. This purpose needs statistics as a tool, for

²⁶ Human Capital Institute, (n.d.). Building Talent Capacity. At: <http://tinyurl.com/z2ujk84>, (visited: 2018.07.04).

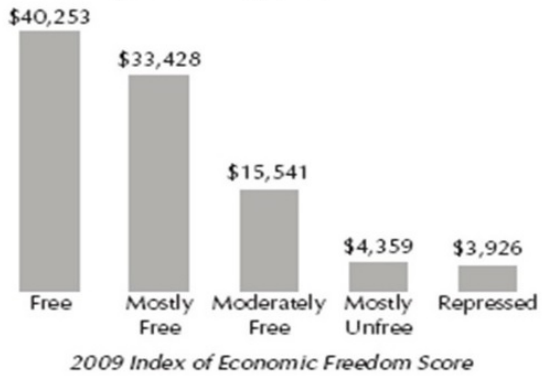
²⁷ LSESU Economics Society, (2015). "Too much Maths, too little History: The problem of Economics". At: <https://tinyurl.com/yd733n2x>, (visited: 2018.07.04).

decision-making; statistics yet may not contribute much enough to creativity and qualified imagination cultivation with the economists.

Literature of economic sciences rightfully display how important is freedom for economic development (Fig. 2.2.). GDP per capita is the highest in the countries with highest level of economic freedom/free market relationships. Most post-soviet countries, *but not only*, struggled a lot and made huge sacrifice to get freedom from previous regimes, aimed at raising equity, though, having proved so obvious that freedom without a due combination with investments in education and R&D, economic growth does not come *sine qua non*. Should statistics of the former governments be taken into account, many countries have declined so much in terms of performance that they may need many years ahead, to get the level of living standards of the early 1990s. At the same time, this situation may not be a reason to give-up freedom. Chances should be sought and capacities developed to work on improving and raising the importance of R&D and teaching in the field of economic sciences. Yet, this trend may be even more worsening shouldn't it be considered that is "extremely difficult to initiate educational reform or to improve the quality in a country that possesses demoralized teachers"²⁸. Unmotivated teachers of an education system of a poor country, usually is headed by "politically assigned" minister, and he or she can unnoticeably "convert" the piecemeal funding allocated to education into a loss, in many ways, even unwillingly, including by means of under- or sub-qualified kind of economic thinking and "myth-building", instead of producing genuine, lucrative economic culture.

The situation requires the need to wide-spread teaching *EE* not only to teacher' training faculties, but also to forthcoming economists at all levels - undergraduate, masters and PhD levels, at both international, and

Fig. 2.2. GDP Per Capita, measured by Purchasing Power Parity (PPP)



Source: Daniels, J. et al., (2013, p. 191).

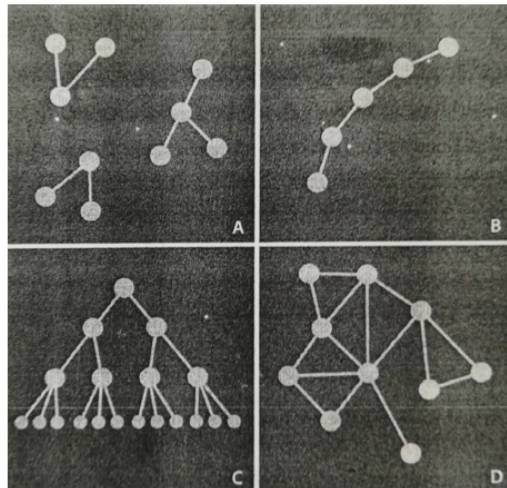
²⁸ Power, C., "Learning: a Means or an End?". In: Prospects, Quarterly Review of Comparative Education. Vol. XXVII, No. 2, June 1997.

even more so, in the less developed countries. The *EE* does not need only good and raising need of *RE* calculation for policy making, or cognition and awareness, but it needs to be combined with duly understanding, skills of data analysis, and decision making based on *RE*, which constitute a quite different dimension for making better decisions for more *added value* and eventual diminishing of the TBPG and inequality. Interpretation skills development for economic idea production are also essential.

EE also seems to be fully supported by Ambrose *et al.*²⁹, (Fig. 2.3.), where the concept of knowledge organization is displayed. Combined with Pauls' concepts, mentioned in the paper by now, it provides a more insightful understanding of the importance of training the economists. And, by means of their training, to make possible eventually "synergize" and "weave" the actions and efforts of all the sciences in a country (Quadrant A), into some lucrative, functional, paying-off idea systems, for the good of the authors of ideas and nations at large (Quadrant C, or D at least).

One could admit that in training economists one might not use the same logic as training, say, surgeons. In training surgeons, one could apply mostly the logic of *developing memory/ knowledge accumulation*, in line with other specific skills. The mistake of a surgeon - certainly undesirable - could be dramatic for one or several patients, but not for too many. In training economists, one should consider that *economic thinking* and *culture* ought to be permanently enhanced to as many as possible in a society, in order to raise the level of competition, and, eventually, build up capacities of raising International Comparative Advantages. If economists err whole industries fail, if to put it mild, or whole countries with implications of tense conflict at regional level, at least. Usually it engenders more and more erroneous

Fig. 2.3. Example of knowledge organization



Source: Ambrose, S. *et al.* (2010, p. 50).

²⁹ Ambrose, S. *et al.*, *How Learning Works. Seven Research-Based Principles for Smart Teaching*. Jossey-bass, 2010, p. 50.

interpretations, eventual wrong and/or speculative deductions and conclusions by some neighboring country leaders, hatred and a many other sources of instability.

The problem of economic sciences have been described in many more details by Joe Salerno (2016) "Economics is Broken"³⁰, Jeff Deist (2016) "The Broken State of Modern Economics"³¹, and probably many others, and this kind of critique can be understood as "positive pressure" and willingness to improve the state of economic sciences, for the good of the nations and peace-building in the whole world. One cannot say so, however, about meddling economics sciences with mystics and determinism, or, the latter will not make possible improve economics contribution to the overall improvement of the public order and to raising welfare; it will keep making economic sciences more meaningless, demotivational and useless.

Conclusions and proposals

1. Economic sciences are in bad need of remediation, and a way out is to complement economists' training curricula with a course and more contents from the *EE*, as material contribution to building more creativity, idea and skill production by means of economics education;

2. International assistance granted by International Assistance Agencies to less developed countries, should pay more attention to on-going quality and economic motivation of teaching economics in the countries targeted for assistance; this will be a sound sign that the assistance is genuinely well-intended;

3. Raising economic culture in the countries lagging behind, regardless of the reasons, might be much more mutually helpful for the advanced economies too, because it will foster IEI and unleash many more energies and capacities for use of *scale economy*, for higher tempo growth and more sustainable peace in the world;

4. Raising economic culture in the countries lagging behind, will foster chances of faster pay-off of investments in R&D worldwide, due to higher and more expanded purchasing power capacities;

³⁰ Salerno, J., (2016). *Economics is Broken*. At: <https://tinyurl.com/ya9ycxns>, (visited: 2018.07.06).

³¹ Deist, J., (2016). "The Broken State of Modern Economics". At: <https://tinyurl.com/yac5xey9>, (visited: 2018.07.06).

5. Should it be admitted that economic sciences, and quality of teaching and R&D in the field, matter for economic performance and diminishing inequalities, the major factor of raising economic culture in the less developed countries could be by means of raising economics teaching capacities, by *renewed stimulant systems* in the sector.

6. Further promotion of the correlation between *EE* and *IEI*, for sooner getting International Comparative Advantages, should be taken as key indicator of poor countries' governments political will to represent and take defensible decisions for the good of their nations.

REFERENCES

Ambrose, S. et al., (2010), *How Learning Works. Seven Research-Based Principles for Smart Teaching*. Jossey-bass, p. 50.

Awaworyi, S. and Mishra, V., (2014), *Returns to Education in China: A Meta-analysis*. Department of Economics ISSN 1441-5429, Discussion paper 41/14, Monash University.

Bruno, F., (2003), *Publishing as prostitution? – Choosing between one's own ideas and academic success*. Institute for Empirical Economic Research, University of Zürich, at: <https://tinyurl.com/y6wukkjk>, visited: 2018.07.03.

Bugudui, E. & Ciobanu, Gh., (2012), *Theory Forms in Unemployment*. In: Revista Română de Statistică – Supliment Trim II/2012, at: <https://bit.ly/2Ps65VH>, (visited: 2019.09.15).

Cameron, Sh., (2010), *The Business Student's Handbook*, Pearson, p. 285, Pearson.

Daniels, J.D., Radebaugh, L.H. & Sullivan, D.P., (2013), *International Business*. Pearson.

Dawkins, R., (2015), *Enemies of Reason - Slaves to Superstition*. At: <https://tinyurl.com/y7ds6oar>, visited: 2018.07.04.

Deist, J., (2016), *"The Broken State of Modern Economics"*. At: <https://tinyurl.com/yac5xey9>, visited: 2018.07.06.

DUP, (2017). *Code of Talent White Paper*. Deloitte University Press (DUP), 2017, p. 12. At: <https://tinyurl.com/y87k73nf>, visited: 2018.07.04.

HCI/Human Capital Institute, (n.d.). *Building Talent Capacity*. At: <http://tinyurl.com/z2ujk84>, visited: 2018.07.04.

Iannaccone, L., (2015), *Larry Iannaccone talks to Oliver Marc Hartwich on the Economics of Religion*. CISAus. At: <https://tinyurl.com/yajswsjb>, visited: 2018.07.06.

Ledwith, M., (2014), *TVR Cluj_Stiinta si Cunoastere_Interviu cu Miceal Ledwith Ep1 2014/TVR Cluj Science and Knowledge with Miceal Ledwith Part. 1* 2014. At: <https://tinyurl.com/ybq5gmjg>, visited: 2018.07.06.

LSEU Economics Society, (2015), "Too much Maths, too little History: The problem of Economics". At: <https://tinyurl.com/yd733n2x>, visited: 2018.07.04.

Maloney, D., (2007), *The Economics of Justice*. At: <https://tinyurl.com/y7oa8glt>, visited: 2018.07.06.

Marx, K. (n.d.). Capital. Cited in Watt, R., Property, Labour and Theft, p. 5. At: <https://tinyurl.com/y7myuwym>, visited: 2018.07.05.

Micloveanu, Sh., (2005), *Encyclopedia for Intelligence, Vol. VI: 1981-2336*. TCM Print, Bucharest.

Moldovan, D., (2015), *Rethinking some postulates of the economic science through the angle of "Creative Imagination Theory"*. In: Classical and Innovative Approaches of Contemporary Economic Thinking, 1st Edition of the International Scientific Conference, Academy of Economic Sciences of Moldova, ASEM, 2015.

Munteanu, A., (2017), *Strategies of Economists' Training and Statehood Sovereignty*. In: Romanian Journal of Labor and Social Studies, Volume 1, No. 1, 2017, at: <https://tinyurl.com/yc6txk5r>, visited: 2018.07.03.

Mussa, M., (2000), Factors Driving Global Economic Integration. At: <https://tinyurl.com/yc6jbhg2>, visited: 2018.07.04.

Nyilasy, G. and Reid, L., (2012), "The academician-practitioner gap in advertising", cited in Marketing Research an Applied Approach, by: Malhotra, N.K., Birks, D.F and Wills P., 4th edition, p. 61.

Paul, R., (2008), *Critical Thinking - Standards of Thought - Part 1*. At: <https://tinyurl.com/luqt28u>, visited: 2018.07.07.

Paul, R., (2015.a.). Write: How to Teach Students to Write Well. At: <https://tinyurl.com/yaewr6o2>, visited: 2018.07.05.

Paul, R., (2015.b.). How to Teach Students To Seek The Logic of Things, Part 2. At: <https://tinyurl.com/y8elpcap>, visited: 2018.07.05.

Power, C., (1997), "Learning: a Means or an End?". In: Prospects, Quarterly Review of Comparative Education. Vol. XXVII, No. 2, June 1997.

Psacharopoulos, G. cited in Woodhall, M., (1995), Human Capital Concepts, in: M. Carnoy (Ed.), International Encyclopaedia of EE. Pergamon Press, Oxford. (Woodhall, 1995:24).

Ross, H., (2008), *Why the Universe is the Way it is*. Baker Books Publishing Group, USA.

Salerno, J., (2016), *Economics is Broken*. At: <https://tinyurl.com/ya9ycxns>, visited: 2018.07.06.

Thornton, M., (2008), "350 Years of Economic Theory-Mark Thornton", (min. 46: 12), at:

<https://tinyurl.com/ybxz35om>, visited: 2008.07.04.

Watt, R. (n.d.). *Property, Labour and Theft, Lecture 5, Marx*. At: <https://tinyurl.com/y7myuwym>, visited: 2018.07.10.

WSJ, (1993), *The Wall Street Journal. Guide to Understanding Money & Investing*. Lightbulb press, Inc., p. 7.

CORPUS BASED APPROACH TO STUDYING VETERINARY MEDICINE LEXICON

YURII ROZHKOV *

yuriev694@gmail.com

ABSTRACT: *The article is devoted to the corpus analysis of the terminology of veterinary medicine. The terms were selected through an analysis of current dictionaries and directories specializing in veterinary terminology. Corpus of Contemporary American English (COCA) has been selected to analyze the terms mentioned above due to it being the most comprehensive and up-to-date free mega corpus of texts in English. The results of the analysis can be used when working with veterinary specialized texts and in teaching a foreign language.*

KEYWORDS: *corpus, corpus analysis, veterinary terminology, cognitive science.*

Introduction

The relevance of cognitive research increases when we approach to under-researched or generally unexplored terminology. The latter includes the terminology of veterinary medicine, which serves the emerging field of science. The main section of veterinary medicine is anatomy, the concept of which, like the terminology that represents it, is heterogeneous, that is, formed on the basis of the interaction of different scientific fields on the one hand, and on the other such sciences as biology, chemistry, medicine.

Nowadays, more and more studies are linking various linguistic issues to the study of human cognitive activity. According to some researchers, in the evolution of linguistic knowledge, cognitivism is "the third scientific paradigm in the history of linguistics after a comparative and historical and structural paradigm, and as any new system for the study of linguistic phenomena, it does not deny anything which linguistics studied before but integrates an acquired knowledge, taking it to a new, higher, explanatory level"¹.

* Lecturer at National University of Life and Environmental Sciences of Ukraine.

¹ Kniازهva, Yu. O., *Korpusnyi analiz v yssledovannyi synonymy. Vestnyk Kostromskoho hosudarstvennoho unyversyteta*. 14.(4). 2008, p. 166.

The cognitive approach to language, also called anthropocentric, opens up "the broad perspectives of seeing language in all its various connections with a person, with its intellect and mind, with all the thinking and cognitive processes that he performs, and with those mechanisms and structures, underlying it². The cognitive aspects of research that are characteristic of modern linguistics are particularly interesting for terminology, where there is a clear, precise structure of knowledge for each term.

The analysis of scientific literature

In Ukraine cognitive direction in terminology is studied by M. Poliuzhyn, S. Zhabotynska, O. Vorobiova and others. Thus, O. Vorobiova focuses on the possibilities of cognitive and communicative approach which allows developing new directions and methods in terminology. Being the initiator of the medical terms research she investigates the meaning of nominative units as the analogues of conceptual structures which perform the functions of translation of particular conceptual compositions in real language form³.

Corpus based approach to studying veterinary medicine lexicon

The peculiarity of today's veterinary scientific paradigm is that it combines both traditional, long-standing ways of knowing, and the most modern, instrumental and accurate research methods. Historically, veterinary medicine has been a long-established field of knowledge that throughout its existence has been focused on the same object – the sick animal and its owner.

This feature determines the cumulative nature of veterinary knowledge, since veterinary science does not reject, but preserve, deepen and transform the stages of cognition accumulated in the course of its development, which are reflected in veterinary terminology as well. All this determines the constant renewal, development and replenishment of the veterinary term system and is a prerequisite for research attention to the development of the linguistic sign in veterinary discourse.

² Mouton, D., *Cognitive Linguistics. Basic Readings*. De Gruyter Mouton. Berlin. Mouton Reader, 2006, p. 187.

³ Vorobyova, O.P., *Kognitivnaia poetica. Perspektivi i dostizheniia. Journal of Kharkiv national University named after V.N. Karazin*. Kharkiv. University Publishing House, 2004, p. 79.

The language of veterinary medicine is one of the most ancient and socially important spheres of human activity, but nowadays there are no works devoted to the analysis of the current state of veterinary terminology, at the same time its arsenal is constantly being updated. The ordering of the English-language veterinary term system from the position of frame semantics determines the relevance of our study.

Corpus linguistics has evolved into an independent scientific direction, the achievements of which mark a new stage in the development of scientific thought. In modern linguistics, there is a tendency to create voluminous corpora of texts, which are confirmed by major research projects.

Using a vast array of written and oral language material with computer involvement, along with other research methods, provides a comprehensive approach to linguistics. According to Yu. O. Knyazeva, "such an analysis provides new data on the frequency and joint occurrence of linguistic units, since such data could not be obtained by introspection or interviewing informants"⁴.

All of the above testifies to the relevance of the use of corpus linguistics in the study of the proximity of the meaning of words.

S.V. Lebedev notes that the nature of lexical units can be understood only on the basis of the study of man and his picture of the world. We believe that the national corpus of language is a "reflection" or "mirror" of this picture, allowing the researcher to look into the various linguistic situations ("pictures of the world") of many thousands of people.

Many researchers note the particular value of using real-world language material analysis. M. Murphy shares this view and emphasizes that the corpus is an incomparably useful source of information on the closeness of meaning to words which makes it possible to analyze the quantitative and qualitative aspects of words used in different situations and genres. This makes it possible to argue that certain words close to each other by meaning are more frequent in contexts of different origins. For example, the words SOUL, HEART will be included in various sections in newspaper texts and novels, non-fiction, etc.⁵

⁴ Knyazeva, Yu. O., *Korpusnyi analiz v yssledovannyi synonymyyi*. Vestnyk Kostromskoho hosudarstvennogo unyversyteta. 14.(4), 2008, p. 245.

⁵ Murphy, M.L., *Semantic Relations and the Lexicon*. Cambridge. Cambridge University Press, 2003, p. 92.

Corpus analysis often yields unpredictable results. For example, the word PIRATE in corpus is more commonly used in the sense of "intellectual property theft" than in its original meaning, "Marine robber". However, the considerable amount of data makes a good assumption about the current state of the language. When working with a large corpus, lexicographers come to the conclusion that it is impossible to clearly define the boundaries of a word, since it is not the individual words, namely lexical blocks, that are taken into account.

L. Murphy notes that this is probably true of synonyms, since the similarity is found not between individual words but between synonymous blocks into which lexical units are combined. The complexity and obscurity of the phenomenon of synonymy, which still has no consistent definition, endless reflections on methods of classification and descriptions of similar in terms of content indicate that it is probably the modern corpus of data on language use that brings the researcher closer to what knowledge determines the similarity of word meanings in humans⁶.

A similar point of view agrees with D. Biber, who notes that the words big, large, great, are quasi-synonyms (near synonymous in isolation), tend to be combined with different words in different genres. He goes on to say that "in a language many are similar in meaning, the dictionaries characterize them as identical or close in meaning, but they are used differently in different genres"⁷.

Studying their use and distribution in the corpus allows us to determine stable word combinations that include synonyms, their dependence on context, frequency in different genres. In our work, as a material for analysis, we use a number of names that indicate methods of conservative treatment in veterinary medicine: Vitamin Therapy, Drug Therapy, Radiotherapy, Chemotherapy, Laser Therapy. The results of the study are shown in the figures below.

⁶ Studdert, V. P., *Comprehensive Veterinary Dictionary*. London. Elsevier Ltd. 2012, p. 508

⁷ Biber D., Conrad S., Reppen R., *Corpus Linguistics. Investigating Language Structure and Use*. Cambridge. Cambridge University Press, 1998, p. 111.

Vitamin therapy

Corpus of Contemporary American English

SEARCH CHART

[CHANGE TO HORIZONTAL CHART](#)

SECTION (CLICK FOR SUB-SECTIONS) (SEE ALL SECTIONS AT ONCE)	FREQ	SIZE (M)	PER MIL
SPOKEN	2	116.7	0.02
FICTION	0	111.8	0.00
MAGAZINE	7	117.4	0.06
NEWSPAPER	0	113.0	0.00
ACADEMIC	2	111.4	0.02

Drug therapy

Corpus of Contemporary American English

SEARCH CHART

[CHANGE TO HORIZONTAL CHART](#)

SECTION (CLICK FOR SUB-SECTIONS) (SEE ALL SECTIONS AT ONCE)	FREQ	SIZE (M)	PER MIL
SPOKEN	46	116.7	0.39
FICTION	9	111.8	0.08
MAGAZINE	125	117.4	1.07
NEWSPAPER	26	113.0	0.23
ACADEMIC	132	111.4	1.18

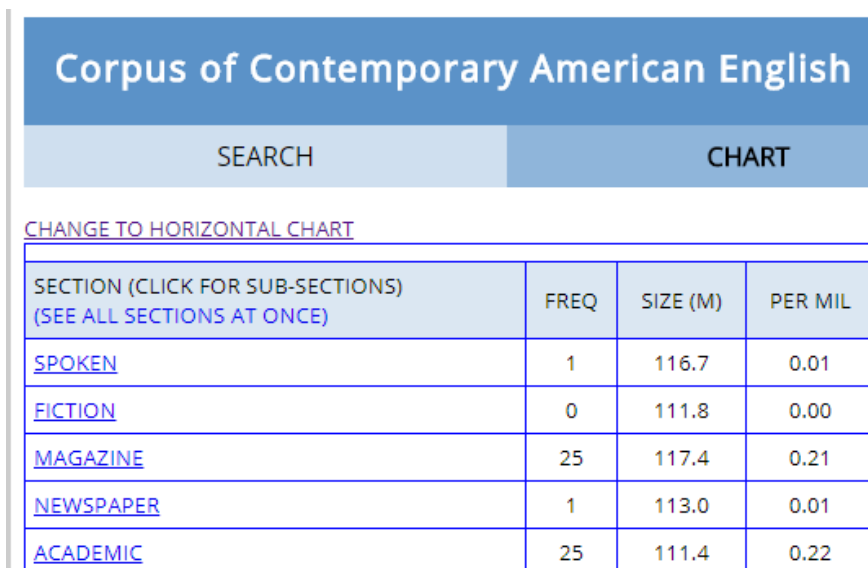
Radiotherapy

Corpus of Contemporary American English			
SEARCH		CHART	
CHANGE TO HORIZONTAL CHART			
SECTION (CLICK FOR SUB-SECTIONS) (SEE ALL SECTIONS AT ONCE)	FREQ	SIZE (M)	PER MIL
SPOKEN	4	116.7	0.03
FICTION	1	111.8	0.01
MAGAZINE	42	117.4	0.36
NEWSPAPER	4	113.0	0.04
ACADEMIC	579	111.4	5.20

Chemotherapy

Corpus of Contemporary American English			
SEARCH		CHART	
CHANGE TO HORIZONTAL CHART			
SECTION (CLICK FOR SUB-SECTIONS) (SEE ALL SECTIONS AT ONCE)	FREQ	SIZE (M)	PER MIL
SPOKEN	649	116.7	5.56
FICTION	178	111.8	1.59
MAGAZINE	1,016	117.4	8.66
NEWSPAPER	694	113.0	6.14
ACADEMIC	722	111.4	6.48

Laser therapy



The screenshot shows the COCA interface with a search bar at the top. Below the search bar, there are two tabs: 'SEARCH' and 'CHART'. A link 'CHANGE TO HORIZONTAL CHART' is visible. The main table displays the following data:

SECTION (CLICK FOR SUB-SECTIONS) (SEE ALL SECTIONS AT ONCE)	FREQ	SIZE (M)	PER MIL
SPOKEN	1	116.7	0.01
FICTION	0	111.8	0.00
MAGAZINE	25	117.4	0.21
NEWSPAPER	1	113.0	0.01
ACADEMIC	25	111.4	0.22

The basis of our experience was the D. Weber method. The material for the work was Corpus of Contemporary American English (COCA), a vast array of words that was created in 2000-2003 being based on the texts of the Times since 1923. The body includes 160,000 texts, equal to 60 million words revealed during the year from 1990 to 2011.

Comparative analysis of the above tables makes it possible to conclude that the terms *laser therapy* and *vitamin therapy* are the most specific and occur only in academic sections and magazines. Less specific are the veterinary terms *radiotherapy*, which are 4 times found in spoken English and once in newspaper. Most commonly used were *chemotherapy* and *drug therapy*. The veterinary term *chemotherapy* is found in all divisions of the corpus of American English.

Most often it is used in academic and journal sections, but unlike other terms it is often used in other sections, thus in colloquial - 649; fiction - 178; 694. The term *drug therapy* had, compared to the term *chemotherapy*, a lower level of specificity.

Working with the body of data gives the researcher the opportunity not only to view the frequency of word use, but also to see on the monitor screen all cases of the use of the word included in the body, choosing at its own discretion all possible search criteria.

REFERENCES

Biber, D., Conrad, S., Reppen, R., (1998), *Corpus Linguistics. Investigating Language Structure and Use*. Cambridge. Cambridge University Press, p. 111.

Edward, B., (2015), *Black's Veterinary Dictionary*. London. Bloomsbury. p. 397.

Kniazeva, Yu. O., (2008), *Korpusnyi analiz v yssledovannyi synonymyy*. Vestnyk Kostromskoho hosudarstvennoho unyversyteta. 14.(4), pp. 165-169.

Mouton, D., (2006), *Cognitive Linguistics. Basic Readings*. De Gruyter Mouton. Berlin. Mouton Reader, p. 187.

Murphy, M.L., (2003), *Semantic Relations and the Lexicon*. Cambridge. Cambridge University Press, p. 92.

Studdert, V.P., (2012), *Comprehensive Veterinary Dictionary*. London. Elsevier Ltd. p. 508.

Vorobyova, O.P., (2004), *Kognitivnaia poetica. Perspektivi i dostizheniia*. *Journal of Kharkiv national University named after V.N. Karazin*. Kharkiv. University Publishing House, pp. 75-82.

THE HUMANISTIC COMPONENT IN THE CONTENT OF TRAINING FUTURE BIOTECHNOLOGIES OF THE AGRICULTURAL INDUSTRY

HELENA MYSHAK*

o.mishak@nubip.edu.ua

ABSTRACT: *The article deals with the urgent issue of providing a humanistic component in the content of future specialists training. For this purpose, the industry standard of higher education in the specialty "Biotechnology and bioengineering" for the first (bachelor) level was used. The content of educational programs in the disciplines of social and humanitarian and professional cycles of training future biotechnologists of the agro-industrial branch is analyzed. The humanistic component in the content of training future biotechnologists of the agricultural industry at agrarian universities is analyzed and the need for its actualization is substantiated.*

KEYWORDS: *humanitarian training, humanistic component, future biotechnologists, agricultural industry, vocational training, personality of a specialist.*

Introduction

In the context of scientific and technological progress and the implementation of economic and educational reforms in Ukraine, the role of the subjective factor in the development of society is growing. The transition to the information society creates new requirements for the nature and quality of professional activities of agricultural specialists. A modern employee should not only have profound professional knowledge, but also have high moral qualities of a person, be responsible for the consequences of his actions.

The main thing for every higher educational institution is not only the formation of professional knowledge, practical skills, but also what the specialist's specifically oriented thinking, social and professional potential of his practical activity are focused on.

To accomplish this task, an important role is assigned to the social and humanities sciences, which form the student's personality in accordance with modern and real requirements of society.

* PhD. in Pedagogical Sciences, lecturer at National University of Life and Environmental Sciences of Ukraine.

The analysis of the scientific literature

Understanding the phenomenon that promotes the education of the student's personality in modern conditions and the needs of society cannot leave aside scientists who study pedagogical and educational issues from a scientific point of view. Among the scientists who analyzed the processes of humanization of higher education, V. Andrushchenko, R. Belanova, S. Goncharenko, I. Zyazyun, I. Kuznetsov, N. Krylov, Yu. Malevany, S. Nikitin, M. Romanenko should be named.

Various aspects of the humanization of the future specialists training in higher education institutions are studied by domestic and foreign scientists: A. Yaroshenko (formation of spiritual values in higher education by means of the humanities); A. Wozniuk (formation of a system of integrated humanitarian knowledge of technical university students) S. Romanova (humanization of vocational education at technical university) G. Voronka, I. Onishchenko, L. Yatsenko (problems of humanitarian education) I. Kuznetsova S. Romanov (aspects of humanization of technical knowledge); G. Ball, V. Butenko, P. Kislichenko, A. Chernaya (formation of the moral and professional culture of a specialist).

Today, the problem of combining humanitarian training with the professional qualifications of future specialists is one of the most urgent problems of the activities of agricultural universities, requiring a modern solution, since today's education suffers from the isolation of the humanitarian cycle of disciplines from professionally directed ones. Such isolation adversely affects the formation of the personality of a future specialist, who does not have a spiritual heritage and does not have the skills to extrapolate achievements in the field of other sciences to the sphere of his activity.

The purpose of the article

The purpose of the article is to analyze the role of the humanistic component in the content of training future biotechnologists in the agro-industrial sector and justify the need for its provision.

The analysis of the curriculum in specialty "Biotechnology and Bioengineering"

To determine the state of ensuring the humanistic orientation in the content of the disciplines of the humanitarian and professional cycles of the biotechnologist training curriculum, the industry standard for higher

education in specialty 162 “Biotechnology and Bioengineering” was used for the first (bachelor's) degree, approved in 2018 (Order of the Ministry of Education and Science of Ukraine, 2018)¹.

It should be noted that in the content of this standard there was a certain positive dynamics in the content of training specialists and requirements for professional qualities, knowledge, abilities and skills of future biotechnologists.

According to the 2012 industry standard in direction 0929 “Biotechnology” (Order of the Ministry of Education and Science of Ukraine, 2012), the bachelor's curriculum had four groups of disciplines: 1) humanitarian and social and economic training; 2) natural- and scientific (fundamental training) 3) professional and practical (professionally oriented) training; 4) selective disciplines. The content of the curriculum for the disciplines of the social and humanitarian cycle, which were included in the curriculum of higher agricultural educational institutions, included philosophy, study of culture, psychology, sociology, Ukrainian and foreign languages.

Today, the curricula for training biotechnologists of various agricultural universities contain normative academic disciplines that are unchanged for any university preparing future biotechnologists, as well as selective disciplines (at the choice of the university and at the student's choice).

Regulatory disciplines are divided as follows: 1) disciplines of the cycle of humanitarian and social and economic training (history of Ukraine, study of culture, Ukrainian for specific purposes, political science, foreign language for specific purposes, philosophy, sociology, psychology, science of law, economic theory); 2) disciplines of the cycle of mathematical and natural science training (higher mathematics, physics, general and inorganic chemistry, computer engineering and programming, ecology and others); 3) disciplines of the cycle of professional and practical training (analytical chemistry, physical and colloid chemistry, engineering and computer graphics, cell biology, biochemistry, general microbiology and virology, general biotechnology, general and molecular genetics, labor protection and life safety, biotechnological processes and devices production, electrical engineering

¹ *Haluzevyy standart vyshchoyi osvity za spetsial'nistyu 162 «Biotekhnolohiyi ta bioinzheneriya» dlya pershoho (bakalavrs'koho) rivnyia. (2018). Vydannya ofitsiyne. K., Ministerstvo osvity i nauky, molodi ta sportu Ukrayiny.*

and the basics of electronics, automation and management of biotechnological production and others).

The educational programs and curricula of agricultural universities (Dnipro State Agrarian and Economic University, Zhytomyr National Agroecological University, Nikolaev Agrarian University, Podolsk State Agrarian and Technical University) include the same standard educational disciplines.

The normative part of the educational material includes such disciplines of the cycle of humanitarian and social and economic training: history of Ukraine, study of culture, Ukrainian for specific purposes, foreign language for specific purposes, political science, philosophy, sociology, psychology, science of law, economic theory.

The analysis of the content of the disciplines of social and humanitarian cycle, which are included in the curriculum of higher agricultural educational institutions, namely: philosophy, study of culture, psychology, sociology, Ukrainian and foreign languages, shows that the content of these subjects represents information about a person, ways of his interaction with society, nature, forms of cognitive and transformative activity, culture, opportunities for self-realization. However, the implementation of the task of educating a humanistically oriented personality, which is characterized by high moral qualities, depends on the interpretation of the content of the educational material by the teacher. A targeted educational impact strategy aimed at forming a humanist specialist is practically absent in the content of programs, it only has potential educational opportunities.

The main aspects of updating the humanistic orientation of the training content

An analysis of the curricula made it possible to establish the absence of a clear professional direction in the teaching of the disciplines of the humanitarian and social and economic cycle, which leads to a weakening of motivation in training and the professional formation of future specialists. Therefore, when selecting and structuring the content of vocational training, including humanitarian and social and economic, it is necessary to take into account the professional orientation to the future activities of biotechnologists. This will help strengthen motivation for future professional activities, interest in mastering knowledge, skills.

Disciplines require the reproduction in the subjects of sciences of the dialectical relationship of man and the world. Therefore, the training of

future biotechnology engineers (professional, moral, cultural) should orient them towards value orientations that form skills and abilities to control the transition from an anthropogenic form of production development to an environmentally friendly one. The teaching of any discipline must be humanitarian in nature. It is necessary to appeal to the history of science, the personality of its creators. It is necessary to introduce elements of a methodological, worldview culture into the training courses. Finally, teaching itself is inherently a humanitarian process that must be organized accordingly².

The humanization of professional training of specialists in the field of biotechnology provides for the strengthening of the humanistic orientations laid down in it. It should cover all academic disciplines without exception and express the worldview and methodological aspects of their teaching (the methodological basis of humanization is the personal orientation of the educational process)³.

The second aspect of updating the humanistic orientation of the education content (along with the increasing role of humanitarian disciplines) is the enrichment of non-humanitarian disciplines with human and social content and meaning. It is necessary to display worldview, special and humanitarian training in each academic discipline. The formula of education is the unity of the scientific content, the dialectical method and the humanistic goal.

It is important to note that natural science training as a component of the professional training of future biotechnological specialists in the curriculum is defined by such disciplines as biochemistry, higher mathematics, physics with the basics of plant biophysics, chemistry, ecology (professional area), computer science.

Of course, the disciplines of the vocational training cycle are of great importance in the training of future specialists: cell biology, general microbiology and virology, general biotechnology, genetics, life safety and labor protection, processes and apparatuses of biotechnological production, control and management of biotechnological processes, design of biotechnological productions, economics and organization of biotechnological industries, etc.

² Mukhametzyanova, G.V., *Professional'noye obrazovaniye: sistemnyy vzglyad na problemu*. Kazan', 2008, p. 600.

³ Byelanova, R.A., *Humanizatsiya ta humanitaryzatsiya osvity v klasychnykh universytetakh (Ukrayina – SSHA): Monohrafiya*. Kyiv.: Tsentr praktychnoyi filosofiyi, 2001, p. 185.

So, in the curriculum, most disciplines are natural sciences, the names of which contain part of complex words (scientific terms) - the token "bio", which means life. This is due to the fact that biotechnology itself is associated with the use of living organisms and biological processes in production for human needs, to improve his life, health and environmental conditions (βιοτεχνολογία, from the Greek. Bios - life, techne - art, craftsmanship and logos - word, teaching). This actualizes the humanistic orientation of scientific knowledge, the content of which is focused on a person as a goal and value.

The humanistic nature of science is also manifested in the fact that it enriches the spiritual world of a person, significantly affects its development, and produces a social mechanism for transferring knowledge to new generations in the process of obtaining education.

Thus, to ensure the humanistic component in the content of educational disciplines of professional training of students, it is necessary to perform the following tasks:

- disclosure of the peculiarity of each humanitarian discipline in order to increase the intellect, horizons, erudition of students, the formation of professional qualities;
- the use of the humanistic potential of humanitarian disciplines in the formation of students' spiritual and moral qualities;
- the use of humanitarian knowledge in teaching special disciplines;
- appeal to the natural and technical sciences in the teaching of the humanities⁴.

Summing up, we note that the education of a humanistically oriented personality at university should be implemented through the optimal combination of fundamental, humanitarian and professional cycles of disciplines, their interpenetration on the basis of interdisciplinary connections, integrated courses, interdisciplinary forms of control, ensuring the formation of a holistic consciousness based on systemic knowledge.

In this regard, in a higher agricultural educational institution, an interdisciplinary complex that provides the interaction of technical and

⁴ Myshak, E., *The Formation of Future Biotechnologists' Humanistic Orientation in Professional Training at Higher Agricultural Educational Establishments*. The thesis is to obtain the scientific degree of the Candidate of Pedagogical Sciences in speciality 13.00.04 Theory and Methods of Vocational Education. Khmelnytskyi National University, Ministry of Education and Science of Ukraine. Khmelnytskyi, 2019, p.115.

humanitarian subjects and helps stimulate the spiritual needs and interests of students (intellectual, moral and aesthetic) that are satisfied in the process of self-education and self-development is of great importance⁵.

Substantiation of the need for the introduction of a special course “Humanistic orientation of the personality of the future biotechnologist”

In this context, it becomes necessary to introduce a special course for students of the faculty of biotechnology “Humanistic orientation of the future biotechnologist’s personality”, aimed at updating the humanistic foundations in the future professional activities of the biotechnologist of the agricultural industry⁶.

When developing the special course, we took into account the fact that the integration of professional, scientific, natural and humanitarian knowledge is the basis for the formation of a personality capable of conscious synthesis of knowledge from different areas of human activity, knowledge about oneself, about a person, his attitude towards society, towards environment. Based on this knowledge, it is possible to form the personality of a future specialist, enrich his emotional world with humane qualities; provide an experience of humane behavior in various areas of social activity; to induce self-analysis of their actions and actions. A distinctive feature of the special course is the unification of knowledge on pedagogy, psychology, philosophy, ethics, sociology, ecology around the common problems of the biotechnological sphere.

The introduction of the special course “Humanistic orientation of the future biotechnologist’s personality” is due to the need to expand knowledge and compensate for certain shortcomings in the study of the Philosophy, Study of culture, Psychology training courses and include topics directly related to the humanistic qualities of the future biotechnologist’s training. Studying the special course will help students better understand the specifics of their profession and the essence of the humanistic orientation of the future biotechnologist professional activities,

⁵ Svyrenko, ZH. S., *Vykhovannya humanizmu v studentiv vyshchyykh tekhnichnykh navchal'nykh zakladiv u protsesi vyvchennya predmetiv humanitarnoho tsyклу: dys. ... kand. ped. nauk: 13.00.07. Berdyans'ky derzhavnyy pedahohichnyy universytet. Berdyans'k, 2009, p. 145.*

⁶ Myshak, E.A., *Humanistic orientation of the future biotechnologist’s personality: special course for students of the faculty of biotechnology*. Kiev: Publishing Center of NULES of Ukraine, 2014, p. 65.

and obtain the necessary professional knowledge, skills and professional qualities.

The purpose of the special course is to form a humanistic orientation for future biotechnologists in close combination with the chosen professional activity.

The task of the special course:

- to form the knowledge and ideas of students about the essence of humanism, humanistic principles,
- to acquaint future biotechnologists with the humanistic qualities of professional activity;
- to help to form their own point of view on the problems of biotechnological activity and the ability to uphold it;
- to develop students' stable orientation and willingness in future professional activities to be guided by humanistic principles - to develop students' willingness to make humane choices in the conditions of life.

The special course contains lectures (with elements of conversation, feedback, presentations) - 8 hours and practical lessons - 8 hours.

The lecture material of the special course provides students' disposal with information about the concept and essence of humanism, humanization, humanistic orientation as an integral component of future professional activity. The priority area of practical training is the use of tasks that guide students to develop their humane qualities, understanding the humanistic principles of biotechnological activity, affect the emotional sphere of future specialists, encourage them to have a positive attitude towards themselves, others, nature and future professional activities.

Conclusions

Summing up all of the above, we can conclude that providing a humanistic component in the content of training future biotechnologists of the agro-industrial branch provides ample opportunities for educating the future specialist's personality.

Unfortunately, the specificity of higher agricultural education lies in the fact that most university teachers have professional agricultural education and treat pedagogical activity as an industrial sphere. In connection with this understanding of educational activity in the organization of the educational process, certain difficulties arise. In the

practice of training, the axiological potential of the disciplines of general cultural and vocational training is not sufficiently realized.

The main educational disciplines, which include the humanitarian cycle, in their conceptual basis and content are not relevant to the requirements of the present. This is manifested in the fact that the construction of educational material has a predominantly informational character, does not open up real opportunities for the transfer of personality oriented knowledge, the necessary experience.

REFERENCES

Byelanova, R.A., (2001), *Humanizatsiya ta humanitaryzatsiya osvity v klasychnykh universytetakh (Ukrayina – SSHA): Monohrafiya*. Kyyiv.: Tsentr praktychnoyi filosofiyi, p. 216.

Haluzevyy standart vyshchoyi osvity za spetsial'nisty 162 «Biotekhnolohiyi ta bioinzheneriya» dlya pershoho (bakalavrs'koho) rivnya. (2018). Vydannya ofitsiyne. K., Ministerstvo osvity i nauky, molodi ta sportu Ukrayiny.

Myshak, E., (2019), *The Formation of Future Biotechnologists' Humanistic Orientation in Professional Training at Higher Agricultural Educational Establishments*. The thesis is to obtain the scientific degree of the Candidate of Pedagogical Sciences in speciality 13.00.04 Theory and Methods of Vocational Education. Khmelnytskyi National University, Ministry of Education and Science of Ukraine. Khmelnytskyi, p. 283.

Myshak, E.A., (2014), *Humanistic orientation of the future biotechnologist's personality: special course for students of the faculty of biotechnology*. Kiev: Publishing Center of NULES of Ukraine, p. 65.

Mukhametzyanova, G.V., (2008), *Professional'noye obrazovaniye: sistemnyy vzglyad na problemu*. Kazan', p. 608.

Svyrenko, ZH. S., (2009), *Vykhovannya humanizmu v studentiv vyshchykh tekhnichnykh navchal'nykh zakladih u protsesi vyvchennya predmetiv humanitarnoho tsyклу: dys. ... kand. ped. nauk: 13.00.07*. Berdyans'kyy derzhavnyy pedahohichnyy universytet. Berdyans'k, p. 176.

CULTURAL ARCHETYPES IN THE CONSTRUCTION OF "POSSIBLE WORLDS" OF MODERN AFRICAN- AMERICAN RAP (BASED ON KENDRICK LAMAR'S TEXTS)

NATALIIA KRAVCHENKO,*

NKravchenko@outlook.com

VALENTYNA SNITSAR**

vl.snitsar@gmail.com

ABSTRACT: *The research aims at defining the archetypal-symbolic basis of contemporary African-American rap while specifying its imagery in terms of "possible worlds" as the semiotic framework of the existential problem articulation. The transition process, associated with archetypally based "possible worlds", correlates with mythological and fairy tale initiation, enabling the hero to answer existential questions at both the "consumer" and transcendental levels. Narrative universals in the conceptualization of the life path, resulted in the hero's transfiguration, rely both on the themes recurring for rap texts (childhood, prison, drugs), and on archetypal models associated with a mythological and fairytale narrative, where hardship, violation of prohibitions, and requital are necessary conditions for the protagonist transformation. The archetypal symbolism of Kendrick Lamar's lyrics led to the unexpected conclusion that the rapper-performer's alternative world is the world of Christian values. The process of the lyrical hero's transition into alternative world coincides with the splitting of the image of "rebel" into counter roles based on the archetypal models of "'trickster", "shadow" and "prophet".*

KEYWORDS: *archetypal-symbolic basis, African-American rap, "modeled" world, structural narrative analysis, archetype of rebel, fairytale narrative, semiotic framework*

* Professor, Head of the Chair of Romance and Germanic languages and Translation, National University of Life and Environmental Sciences of Ukraine.

** Associate Professor, National University of Life and Environmental Sciences of Ukraine.

Introduction

The interest in rap as a specific multimodal genre of art, a certain ideology, and even a new form of somatic aesthetics¹ is explained by the influence of rap culture on linguistic and cultural practices of various communities as well as its unifying force in constructing a kind of supranational, supra-ethnic identity of those who "listen" to rap.

Being a manifestation of extreme individualism, rap ideology however unites. On the one hand, its integrating potential relies on the archetypal opposition "Own (protest ideology) - Alien (traditional values)". On the other hand, rap texts reveal, in our opinion, a postmodern "openness of being", manifested by their allusiveness and comprehensive intertextuality both at the musical (samples) and the actual textual levels.

As a hypothesis we assert that rap intertextuality involves a complex symbolic imagery that traces its origin to the structures of collective knowledge (i.e. basic archetypes, prototypes, cultural symbols), which have a powerful integrating potential. According to the researchers, archetypes are "objectified" not only in myths and fairytale narratives, but also in poetry^{2, 3}- as a "voice" from the collective unconscious⁴, which manifests itself spontaneously, "suggesting" the models and images⁵, transformed then into themes, plots and symbols. The problem of the archetypal symbolism of rap texts remains unexplored both in Ukrainian and in foreign studies, which determines the scientific relevance of this article.

The analysis of the latest studies and publications

Various scholars address rap from the discursive framework with a focus on a certain ideology and identity constructed by rap as a discourse^{6,7,8,9}. Such an approach seems promising for identifying

¹ Shusterman, R., Somaesthetics: A Disciplinary Proposal. *The Journal of Aesthetics and Art Criticism*. Vol. 57, №. 3, 1999, pp. 299-313.

² Campbell, J., *The Inner Reaches of Outer Space: Metaphor as Myth and as Religion*. N. Y., Toronto, Harper and Row Publishers, 1988, p. 286.

³ Belekhova, L., Archetype, archetypal sense, archetypal image from the linguocognitive perspective (a study of American poetry)). *Ivan Franko DSPU. Series "Philological Sciences (Linguistics)"*, 3, 2015, pp.6-16.

⁴ Jung, C.G., On the relation of analytical psychology to poetry. *Archetype and symbol*. Moscow, Renaissance Publ., 1991, pp. 265-285.

⁵ Belekhova, L., (2015), *op. cit.*, p. 9.

⁶ Alim, H. S., Awad, I., Pennycook, A., *Global linguistic flows: Hip hop cultures, youth identities, and the politics of language*. New York, NY, Routledge, 2005, p. 264.

concepts and symbols that generalize the values of rap culture as a particular ideology. No less popular is the study of rap from the sociological and sociolinguistic perspectives – in terms of the cultural, linguistic, class, racial, "urban" authenticity of young African Americans¹⁰.

However, neither the methodology of critical discourse analysis, nor the sociolinguistic approach brings us closer to the identification of the symbolic-archetypal architectonics of the rap text. Important for the concept of this article has been the idea advanced in the essay "Hip Hop's symbolists" by music and art critic A. Alzuphar, who compares rappers' lyrics with the Symbolists poetry, suggesting that "like the poet Symbolists", rappers "throw us symbols in a grand, in the end illogical, sequence, symbols that become very significant because of this sequence"¹¹. Realizing that not all symbols have an archetypal basis, we nevertheless consider it important to focus on the archetypal symbolism of rap as a transcultural phenomenon that unites people regardless of ethnicity, race, language, culture, and other variables.

To identify the universal archetypal part of the rap texts' symbols, and the certain correlations between the symbolic model of the author's world and the archetypal model of the world as part of the universal human cultural context, we partially use the theory of archetypes by C. Jung¹². Since the symbolism of Kendrick Lamar's rap significantly relies on biblical images, we distinguish between psychological and cultural archetypes, the latter defined as a code of universal human culture¹³ that embodies the general basic structures of human existence, the "collective" consciousness of mankind through motives, plots, images and symbols (including religious ones). Methodology of our research also necessitates the use of some universal narrative models of the "transition" between

⁷ Emdin, C., Affiliation and alienation: Hip-hop, rap, and urban science education. *Journal of Curriculum Studies*, 42(1), 2010, pp. 1-25.

⁸ Haaken, J., Wallin-Rushman, J., Patange, S., Global hip-hop identities: Black youth, psychoanalytic action research, and the moving to the beat project. *Journal of Community & Applied Social Psychology*, 22, 2012, pp. 63-74.

⁹ Dimitriadis, G., *Performing Identity/Performing Culture: Hip-Hop as Text, Pedagogy, and Lived Practice*. New York, Peter Lang, 2001, p. 187.

¹⁰ Richardson, E., *Hiphop Literacies*. New York, Routledge, 2006, p. 164.

¹¹ Alzuphar, A., *Hip Hop's Symbolists*, <https://entropymag.org/hip-hops-symbolists/> 2017.

¹² Jung, C.G., *Archetype and symbol*. Moscow, Renaissance Publ., 1999, p. 300.

¹³ Belekova, L., *op. cit.*, p. 9.

worlds¹⁴, studied on the basis of a fairy tale and myth as the verbalized forms of the collective unconscious.

The purpose of the article

The purpose of our study is to identify the archetypal basis of Kendrick Lamar's rap symbolism while specifying it in terms of role models of the author-performer and his "possible worlds" as the semiotic framework of the existential problem articulation.

Presentation of basic material of the research

The "commonplace" in the research of the hip-hop subculture is the idea that rappers do not feel harmony. However, this viewpoint is highly questionable. Destroying canons, the rap author-performer creates his/her own harmonic world: in an aesthetic sense he / she creates a harmony by integrating music, words, plastics and visual images in a cohesive creolized text; in the value-semiotic aspect, the integrity of the rap text relies on the transmission of values that unite representatives of the subculture constructing their collective identity. On the other hand, such an identity construction and its substantiating values are based on a number of universal archetypes that determine the totality of role-playing models of the author-performer. The most explicit is the archetype of "rebel", which in its turn is motivated by the by the *shadow archetype*¹⁵, embodying characteristics unacceptable from the viewpoint of public morality.

The rebel archetype: articulation of the worldview problem

The archetype of the "rebel" embodies the protest ideology with the conceptual motives of resistance, challenge to society, violation of cultural norms and prohibitions, indexed by the vocabulary denoting the concepts of "destruction", non-conformism, protest, resistance, challenge, revolution, outrage, freedom, outlaw: "*Realness, I just kill shit 'cause it's in my DNA*", "*I got dark, I got evil, that rot inside my DNA*", "*Sentence on the way, killings on the way*", "*Tell me when destruction gonna be my fate, Gonna be your fate, gonna be our fate*"¹⁶, "*This is it, the apocalypse*"¹⁷.

¹⁴ Meletinskii, Ye. M., Analytical psychology and origins of archetypal narratives. *The unconscious. The diversity of vision*. Novocherkassk, Saguna Agency, Vol. 1, 1994, pp. 159-167.

¹⁵ Jung, C.G., *op. cit.*, 1991, p. 98

¹⁶ Lamar, K., *DNA.*, <https://www.youtube.com/watch?v=NLZRYQMLDW4>

The role models associated with the archetypal image of a rebel are characterized by an iconic rendering of the psychological state and emotions of the author through syntactic structures: ellipsis ("*Enough to make my system blow*"¹⁸), nominative sentences ("*Cocaine quarter piece, got war and peace inside my DNA*"¹⁹), unfinished sentences ("*See, you's a, you's a, you's a...*"²⁰), numerous detachments ("*The sun hasn't died. Deep in my bones. Straight from inside...*"²¹).

On the one hand, the indicated tools iconically reproduce randomness, abruptness, and spontaneity of the author's thoughts as well as the logical inconsistency of the denoted world. On the other hand, they emphasize the understatement, incompleteness of thought, reflexivity and a certain impressionistic feelings of the author-performer.

At the "plot-thematic" level, the archetype of the "rebel" is revealed by an apparently disordered conglomeration of heterogeneous topics: "*Scholars, fathers dead with kids, And I wish I was fed forgiveness. Yeah, yeah, yeah, yeah, soldier's DNA, Born inside the beast. My expertise checked out in second grade*"²², as well as by the collision of lofty matters with the intentionally down-to-earth topics, the combination of bookish and obscene vocabulary, high and low registers: "*I don't contemplate, I meditate, then off your fuckin' head*"²³; "*Antisocial, extrovert, And excellent mean the extra work, And absentness, what the fuck you heard?!*"²⁴

On the one hand, the combination of "unconnectable" in a rap text iconically (structurally) reproduces the absurdity and meaninglessness of human existence in the modern world. It is appropriate here to recall the idea of A. Camus that the source of rebellion and aggressiveness of modern man is connected with the absurdity and senselessness of his existence (this idea is explicated, in particular, in the essay "The Rebellious Man"²⁵).

¹⁷ Lamar, K., *Radioactive*, https://drivemusic.me/listen_music/34642.html

¹⁸ *Ibid.*

¹⁹ Lamar, K., *DNA.*, <https://www.youtube.com/watch?v=NLZRYQMLDW4>

²⁰ *Ibid.*

²¹ Lamar, K., *Radioactive*, https://drivemusic.me/listen_music/34642.html

²² Lamar, K., *DNA.*, <https://www.youtube.com/watch?v=NLZRYQMLDW4>

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ Camus, A., *The Rebel. Philosophy. Politics. Art.* [transl. from French]. Moscow, Politizdat, 1990, 145 p.

On the other hand, oppositions foreground the semantic ambiguity of the text²⁶ associated with the denial of a certain tradition (aesthetic, literary, ideological, etc.) and articulation of the certain worldview problem, which solution is offered to the audience as one of the possible interpretations of the rap composition. In this sense, the semantic and semiotic ambivalence brings the rap composition closer to conceptual art and other manifestations of postmodernism, since the aesthetic aspect of the text matters only in terms of provocation by the author-performer of certain ideas / concepts. The aesthetics of individualism, characteristic of rap culture, emphasizes the problem of existential loneliness, raising "eternal" questions about the meaning of life and death, which are solved by the rap author within the consumer and existential-eschatological frameworks.

Possible worlds of rap texts: consumerism vs. existential eschatological search

To analyze the symbolic projection of the rap text, it is important to determine the semiotic framework of the study, which is based on the hypothesis about the function of the associative-symbolic space of the rap text in the construction of the "possible world", characterized by: a) a change in the hero's status; b) the articulation / solving a worldview (existential) problem.

It is easy to see that the rebel archetype is consistent with the dichotomy distinguished by Z. Freud²⁷ between Thanatos as a death drive and Eros as the craving for life with a prevailing value of the first member ("This is it, the apocalypse") of the dichotomy for a certain age group. On the other hand, the rap texts' disconnection, aggression, destructive actions and other explications of Thanatos in the actual fact symbolizes the need for transformation and rebirth ("*I'm breaking in, shaping up*"²⁸). This desire can be compared with the modern form of initiation, which, according to C. Jung, remains an important event in the life of modern people²⁹. The purpose of the initiation rituals is a person's separation from

²⁶ Kravchenko, N., *Discourse and discourse analysis: concise encyclopaedia*. Kiev, Interservice R&D Company Ltd., 2017, 288 p.

²⁷ Freud, S., Beyond the pleasure principle. *Psychology of the unconscious: collected works* [Yaroshevskii M.G. (ed.)]. Moscow, Prosveshcheniye, 1989, pp. 382-424.

²⁸ Lamar, K., *Radioactive*, https://drivemusic.me/listen_music/34642.html

²⁹ Jung, C.G., *Analytical psychology: its theory and practice (the Tavistock lectures)*. *The symbolic life*. Moscow, Kogito-Centre, 2010, pp. 9-195.

a previous stage of existence to help him transfer his psychic energy to the next stage of the life order³⁰. Similar to archaic culture, initiation is associated today with imaginary death (such as a radical transformation of identity that can be interpreted in terms of "death-rebirth").

Transformation occurs in one of the alternative "possible" worlds in which the person is regenerated into a new identity. In other words, in addition to the explicit relationship with Thanatos ("*Look in my eyes, tell me I died*"; "*Bury me alive*"³¹), an actual death is substituted by the identity transition into a qualitatively new state.

In the process of transition, the author-performer solves (or at least defines) a problem of finding the meaning of life, which, as a rule, is interpreted in two semantic spaces: at the mundane and sacred levels.

A world of well-being and a fairy tale narrative

The transition to a new status implies an opposition between the world of poverty, on the one hand, and the world of luxury and popularity, on the other hand: "*I got millions, I got riches buildin' in my DNA*"; "*I just win again, then win again like Wimbledon, I serve*"; "*You see fireworks and Corvette tire skrrt the boulevard*"; "*Sippin' from a Grammy and walkin' in the building, Diamond in the ceilin', marble on the floors, Beach inside the window, peekin' out the window, Baby in the pool – godfather goals*"³²; "*Sky's the limit, I gotta finish as the first rapper on Mars*"³³. At the same time, the "old" and "new" worlds are often comprehended in a particular time perspective in order to enhance the contrast between the rapper's childhood marked by persistent poverty and his today's fortune and success: "*When I was 9, on cell, motel, we didn't have nowhere to stay*"; "*At 29, I've done so well, hit cartwheel in my estate*"³⁴

Therefore, the constitutive component of the rap text is often a narrative that develops themes of troubled childhood and trying times the hero had to go through before ascending to the climax of glory: "*Born inside the beast*"; "*Shit I've been through prolly offend you. This is Paula's oldest son, I know murder, conviction, Burners, boosters, burglars, ballers, dead, redemption*"³⁵.

³⁰ *Ibid.* p. 168

³¹ Lamar, K., *Radioactive*, https://drivemusic.me/listen_music/34642.html

³² Lamar, K., *DNA.*, <https://www.youtube.com/watch?v=NLZRYQMLDW4>

³³ Lamar, K., *Radioactive*, https://drivemusic.me/listen_music/34642.html

³⁴ Lamar, K., *DNA.*, <https://www.youtube.com/watch?v=NLZRYQMLDW4>

³⁵ *Ibid.*

An interesting point, in this regard, are some universals in the conceptualization of the life path resulted in transfiguration of the hero. Universals relate not only to topics (childhood, prison, drugs, etc.) that are recurrent for many rap texts, but also have an archetypal basis associated with a mythological and fairytale narrative, where trials and barriers, violation of prohibitions, recompense are necessary conditions for the protagonist's transformation. In our opinion, the principal difference between the fairy tale and rap narratives is as follows: the former suggests the patterns of behavior that lead to the hero's inner, spiritual transformation, which is often the basis of the physical changes. In the rap text, with rare exceptions, the meaning of life (at least, at the level of explicit content) is declared as a beautiful lifestyle, wealth, fame and girls: "*Money and power*"; "*Sippin' from a Grammy and walkin' in the building*"³⁶.

Transcendental search: archetypal symbols

In contrast to the explicit "consumer-bound" declarations of the author-performer, the additional associative-symbolic meaning of his texts bears evidence of some transcendental search, aimed at answering the eternal sacred questions ("*Bury me alive, bury me with pride, Bury me with berries, that forbidden fruit and cherry wine*"³⁷). In particular, in the rap composition "Radioactive" an additional semantic dimension is created by combination of the cultural symbolic archetypes. The key color of the text is red ("*We're painted red to fit right in*"³⁸), which is considered to be the most symbolically ambivalent color associated not only with rebellion (revolution), but also with the mystical, otherworldly, with the blood of Christ shed for the salvation of all mankind. The semantic parameterization is provided by a number of concepts, i.e. berry, cherry wine, forbidden fruit, which combine together to make the whole symbolic image due to their subordination to the verb "bury" and become then the attributes of the transition to another world. The "mediative" function of the above concepts is supported by the stable symbolic connotations related to each of them. "Stone" inside the cherry carries the idea of a new life and rebirth. The meaning of the transition as a revival is enhanced by the image of "cherry wine" (in the Holy Eucharist *under* the appearance of red *wine*. the blood of the Lord is offered in the sacrament

³⁶ *Ibid.*

³⁷ Lamar, K., *Radioactive*, https://drivemusic.me/listen_music/34642.html

³⁸ *Ibid.*

for the remission of sins: "for this is My blood of the new testament, which is shed for many for the remission of sins"³⁹.

An additional symbolic association of the image of cherries with the subsequent allusion to the forbidden fruit ("*Bury me with berries, that forbidden fruit and cherry wine*") is maintained by the fact that in the Anglo-Saxon tradition not only an apple, but also a cherry symbolizes the fruit of the knowledge of good and evil⁴⁰.

The forbidden fruit – a symbol of the fall – is also a sign of the transition from eternal life to death, but in the whole contextual environment ("*Bury me with pride, Bury me with berries, that forbidden fruit and cherry wine*"). This idiom foregrounds another connoted meaning of "pride" since the forbidden fruit is an attribute of pride: Adam ate it to be equal to God. The second idiom used by the rap author ("*bury me alive*") explicitly indicates the border between two worlds, but in an intercultural context it can also be interpreted as an allusion to the real "funeral alive" procedure, designed to change a person's life giving him / her a so-called second birth (such technique exists, in particular in modern Japan).

In such an associative context, the final verse of the text acquires a special meaning: "*I wish good luck to my enemies, I give all my energy to the almighty Lord*". The first part of this phrase is an allusion to the New Testament commandment "*Love your enemies, bless those who curse you, do good to those who hate you*"⁴¹. The second part of the phrase is quite explicit (*I give all my energy to the almighty Lord*).

Thus, the "world" in which the hero may be reborn becomes the world of Christian values, life in the Lord. This interpretation is completely inconsistent with the protest and utilitarian-consumer ideology of rap, but it is quite congruent with the whole hypertext of Kendrick Lamar's work, which is confirmed by numerous citations and allusions referring to the Old and New Testaments: "*Reapin' what you sow*"⁴², "*Was Yeshua's new weapon*", "*Every stone thrown at you restin' at my feet*"⁴³, "*Cause mu DNA won't let me involve in the light of God*" (allusion to the divine light, a prototype of which ascends to the Old Testament, appearing in the Book

³⁹Matthew 26:28. King James Bible. *The Preserved and Living Word of God*. <https://www.kingjamesbible.me/Matthew-26-28/>

⁴⁰Tresidder, J., *Dictionary of symbols*. Moscow, FAIR-PRESS, 1999, 488 p.

⁴¹ Matthew 5:44. King James Bible. *The Preserved and Living Word of God*. <https://www.kingjamesbible.me/Matthew-5-44/>

⁴² Lamar, K., *DNA.*, <https://www.youtube.com/watch?v=NLZRYQMLDW4>

⁴³ Lamar, K., *FEEL*, <https://www.youtube.com/watch?v=cQtFTqh1mwM>

of Job⁴⁴, in the Psalms of the Holy Prophet and King David⁴⁵ and repeatedly mentioned in the New Testament: in the Gospel of John⁴⁶; in 1 John 1: 5-10⁴⁷; in Apocalypse 22: 5⁴⁸; in the Gospel of Luke⁴⁹, etc.).

Religious motives, in particular, in the Old Testament framework permeate the rapper's fourth album DAMN: "Ain't nobody *praying* for me"⁵⁰; "I know murder, conviction, burners, boosters / burglars, ballers dead, *redemption* / scholars, fathers dead with kids / and I wish I was *fed forgiveness*"⁵¹.

To sum up, **the scientific novelty** of the paper consists in specifying the cultural archetypal symbolism of the Kendrick Lamar's compositions interpreted within the semiotic framework of the existential problem articulation in one of the "possible worlds" modeled by the author-performer. The process of transition to this world correlates with the mythological and fairy tale initiation necessary for answering the existential questions posed at consumer and transcendental levels. Narrative universals in the conceptualization of the life path stages resulted in the hero's transfiguration, encompass, on the one hand, themes recursive for various rap texts (childhood, prison, drugs). On the other hand, universals involve archetypal models associated with a mythological or fairytale narrative, where hard luck tests, barriers, and payoff are indispensable for the protagonist's transformation (revival). The transcendental search of oneself in one of the possible worlds corresponds to the associative-symbolic subtext of the rap text, which often acts as a means of restoring the logical and semantic connection of the apparently incoherent text.

⁴⁴ Job 22: 26-28, 25: 3-6. *King James Bible. The Preserved and Living Word of God.* <https://www.kingjamesbible.me/Job-Chapter-1/>

⁴⁵ Psalm 35:10. *King James Bible. The Preserved and Living Word of God.* <https://www.kingjamesbible.me/Psalms-35-10/>

⁴⁶ Gospel of John 8:12; 1: 1-14. *King James Bible. The Preserved and Living Word of God.* <https://www.kingjamesbible.me/search.php?hs=1&q=Gospel+of+John+>

⁴⁷ 1 John 1: 5-10. *King James Bible. The Preserved and Living Word of God.* https://www.kingjamesbible.me/1-John-1-5_1-10/

⁴⁸ Apocalypse 22: 5. *King James Bible. The Preserved and Living Word of God.* <https://www.kingjamesbible.me/search.php?hs=1&q=Apocalypse+22%3A+5>

⁴⁹ Gospel of Luke. *King James Bible. The Preserved and Living Word of God* <https://www.kingjamesbible.me/search.php?hs=1&q=Gospel+of+Luke>

⁵⁰ Lamar, K., *FEEL*, <https://www.youtube.com/watch?v=cQtFTqh1mwM>

⁵¹ Lamar, K., *DNA.*, <https://www.youtube.com/watch?v=NLZRYQMLDW4>

Conclusions

The analysis of the archetypal and figurative symbolism of Kendrick Lamar's texts led to the unexpected conclusion that the rapper-rebel fictitious death relates to his transformation in the world of Christian values. The transformation process corresponds to splitting the image of the rebel into the "counter-narrative" roles of the "confessor", "believer", "blasphemer", etc. based on archetypal role models of "trickster", "shadow" and "prophet".

REFERENCES

Alim, H.S., Awad, I., Pennycook, A., (2005), *Global linguistic flows: Hip hop cultures, youth identities, and the politics of language*. New York, NY, Routledge, 264 p.

Alzuphar, A., (2017), *Hip Hop's Symbolists*. <https://entropymag.org/hip-hops-symbolists/>

Apocalypse 22: 5. *King James Bible. The Preserved and Living Word of God*. <https://www.kingjamesbible.me/search.php?hs=1&q=Apocalypse+22%3A+5>

Belekhova, L. / Белехова Л., (2015), Архетип, архетипний смисл, архетипний образ у лінгвокогнітивному висвітленні (на матеріалі віршованих текстів американської поезії). *Науковий вісник ДДПУ імені І. Франка. Серія «Філологічні науки (мовознавство)»*. № 3. С. 6-16. (Archetype, archetypal sense, archetypal image from the linguocognitive perspective (a study of American poetry)). *Ivan Franko DSPU. Series "Philological Sciences (Linguistics)"*, 3, pp. 6-16.

Campbell, J., (1988), *The Inner Reaches of Outer Space: Metaphor as Myth and as Religion*. N. Y., Toronto, Harper and Row Publishers, 286 p.

Camus, A. / Камю А., (1990), *Бунтующий человек. Философия. Политика. Искусство* [пер. с фр.]. Москва, Политиздат, 415 с. (*The Rebel. Philosophy. Politics. Art.* [transl. from French]). Moscow, Politizdat, 145 p.

Dimitriadis, G., (2001), *Performing Identity/Performing Culture: Hip-Hop as Text, Pedagogy, and Lived Practice*. New York, Peter Lang, 187 p.

Emdin, C. (2010). Affiliation and alienation: Hip-hop, rap, and urban science education. *Journal of Curriculum Studies*, 42(1), pp. 1-25.

Freud, S. / Фрейд З., (1989), По ту сторону принципа удовольствия. *Психология бессознательного: сб. произведений* [науч. ред. М. Г. Ярошевский]. Москва, Просвещение, С. 382-424. (Beyond the

pleasure principle. *Psychology of the unconscious: collected works* [Yaroshevkiy M.G. (ed.)]. Moscow, Prosveshcheniye, pp. 382-424.

Gospel of John 8:12; 1: 1-14. *King James Bible. The Preserved and Living Word of God.*

<https://www.kingjamesbible.me/search.php?hs=1&q=Gospel+of+John+>

Gospel of Luke. *King James Bible. The Preserved and Living Word of God*
<https://www.kingjamesbible.me/search.php?hs=1&q=Gospel+of+Luke>

Haaken, J., Wallin-Rushman, J., Patange, S., (2012), Global hip-hop identities: Black youth, psychoanalytic action research, and the moving to the beat project. *Journal of Community & Applied Social Psychology*, 22, pp. 63-74.

Job 22: 26-28, 25: 3-6. *King James Bible. The Preserved and Living Word of God.* <https://www.kingjamesbible.me/Job-Chapter-1/>

John 1: 5-10. *King James Bible. The Preserved and Living Word of God.*
https://www.kingjamesbible.me/1-John-1-5_1-10/

Jung, C.G. / Юнг, К.Г., (1991), *Архетип и символ*. Москва, Ренессанс, 300 с. (*Archetype and symbol*). Moscow, Renaissance Publ., 300 p.

Jung, C.G., / Юнг, К.Г., (2010), Тавистокские лекции. О теории и практике аналитической психологии. *Символическая жизнь*. Москва, «Когито-Центр», С. 9-195. (Analytical psychology: its theory and practice (the Tavistock lectures). *The symbolic life*. Moscow, Kogito-Centre, pp. 9-195.

Jung, C.G., / Юнг, К.Г., (1991), Об отношении аналитической психологии к поэтико-художественному творчеству. *Архетип и символ*. Москва, Ренессанс, С. 265-285. (On the relation of analytical psychology to poetry. *Archetype and symbol*). Moscow, Renaissance Publ., pp. 265-285.

Jung, C.G., Franz, M.L. von, Jaffe, A., Jacobi, J., Henderson, J.L. / Юнг К.Г., фон Франц М.Л., Хендерсон Дж. Л., Якоби И., Яффе А., (1998), *Человек и его символы*. Москва, Серебряные нити, 454 с. (*Man and his symbols*). Moscow, Serebriannyye niti, 454 p.

King James Bible. The Preserved and Living Word of God.
<https://www.kingjamesbible.me/1611-Bible/>

Kravchenko, N. /Кравченко, Н., (2017), *Дискурс и дискурс-анализ: краткая энциклопедия*. Киев, ТОВ «НВП «Интерсервис», 288 с. (*Discourse and discourse analysis: concise encyclopaedia*). Kiev, Interservice R&D Company Ltd., 288 p.

Lamar, K., *DNA*, <https://www.youtube.com/watch?v=NLZRYQMLDW4>

Lamar, K., *FEEL*, <https://www.youtube.com/watch?v=cQtFTqh1mwM>

Lamar, K., *Radioactive*, https://drivemusic.me/listen_music/34642.html

Matthew 5:44. *King James Bible. The Preserved and Living Word of God.* <https://www.kingjamesbible.me/Matthew-5-44/>

Matthew 26:28. *King James Bible. The Preserved and Living Word of God.* <https://www.kingjamesbible.me/Matthew-26-28/>

Meletinskii, Ye. M., / Мелетинский, Е.М., (1994), Аналитическая психология и проблема происхождения архетипических сюжетов. *Бессознательное. Многообразие видения.* Новочеркасск, Агенство Сагуна, Т. 1., С. 159-167. (Analytical psychology and origins of archetypal narratives. *The unconscious. The diversity of vision*). Novocherkassk, Saguna Agency, Vol. 1, pp. 159-167.

Psalms 35:10. *King James Bible. The Preserved and Living Word of God.* <https://www.kingjamesbible.me/Psalms-35-10/>

Richardson, E. (2006), *Hiphop Literacies*. New York, Routledge, 164 p.

Shusterman, R., (1999), Somaesthetics: A Disciplinary Proposal. *The Journal of Aesthetics and Art Criticism*. Vol. 57, №. 3, pp. 299-313.

Tresidder, J. / Тресиддер, Дж., (1999), *Словарь символов* [пер. с англ.]. Москва, ФАИР-ПРЕСС, 448 с. (*Dictionary of symbols* [transl. from English]). Moscow, FAIR-PRESS, 488 p.

Zhao, N. S., (2012), A brief analysis of the Holy Bible's impact on the connotative meanings of color terms and their applications in literatures. *Overseas English*, 1, pp. 274-276.

TRADO-MODERN COMMUNICATION: CATALYST FOR PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV/AIDS AMONG ANDONI WOMEN

REUBEN ATA-AWAJI ANTHONY*

reubenataawaji@yahoo.co.uk

ABSTRACT: *This adopted qualitative method of data analysis as it relied on empirical submissions by scholars and made a case for the fusion of modern and traditional modes of communication in the fight against HIV/AIDS that has continued to plague people living in Nigeria, especially those in its rural areas. So, the work discusses the synthesis of traditional and modern methods of communication as catalyst for prevention of mother-to-child transmission of HIV/AIDS among Andoni women, due to their precarious situations being residents of rural areas amid illiteracy, cultural values and beliefs. The work adopted Diffusion of Innovation Theory as anchor for the discourse. After exploring the various submissions concerning the merits emanating from the fusion of the two media systems, putting them side-by-side with the peculiar nature of rural people in Nigeria, using Andoni as a case study, it concludes that trado-modern communication is a better communication strategy that should be adopted in the fight against the disease, based on empirical facts concerning their strength in awareness creation, advocacy and spread of innovation in the society.*

KEYWORDS: *Trado/modern communication, Catalyst, Prevention, HIV/AIDS, Andoni women.*

Introduction

Human Immune Virus and Acquired Deficiency Syndrome (HIV/AIDS) is no longer among the world's top 10 causes of death, according to World Health Organization (WHO). However, it remains threatening and has continued to gain global attention, due to its mode of infection and spread. In Nigeria the disease remains very challenging because the country has the second largest HIV epidemic in the world. According to the National Agency for the Control of Aids, although HIV prevalence among adults in Nigeria is much less (2.8%) than other sub-Saharan African countries such as South Africa with 18.8 per cent and

* B.A (Nigeria), M.A (UPH), Lecturer at Mass Communication, Salem University, Lokoja, Kogi State, Nigeria, 0706-071-4063

Zambia 11.5 per cent, the size of Nigeria's population means 3.1 million people were living with HIV in 2017. Also, it has been said that Nigeria accounts for about half of all new HIV infections in sub-Saharan Africa despite achieving a 5 per cent reduction in new infections between 2010 and 2017.

The National Agency for the Control of AIDS lamented that Nigeria had fallen below 40 per cent in achieving the first 90 target of the Joint United Nations Programme on HIV/AIDS (UNAIDS), tagged 90-90-90 response to HIV treatment. The Joint United Nations Programme on HIV/AIDS and partners launched the 90-90-90 target in 2014 to advance response to HIV and AIDS treatment. The plan is to ensure that 90 per cent of all HIV positive persons are diagnosed, provided the antiretroviral therapy for 90 per cent of those diagnosed, and to achieve viral suppression for 90 per cent of those treated by 2020.

This is why the syndrome is still a threat to the world and requires constant efforts and study to contend its transmission and spread. And because around the world, women are increasingly at risk from HIV and bear the brunt of stigma and discrimination, they often lack freedom of choice. They sometimes find it harder to avoid HIV infection¹. Among its avenues for spread is the Mother-to-child transmission, which is the spread of HIV from an infected pregnant woman to her foetus and/or child during pregnancy, or through breastfeeding. This, according to medical experts, is the most common way that children become infected with the virus. Meanwhile, according to the National Agency for the Control of Aids, 26.9 per cent of all cases of mother-to-child transmission of HIV in the world happen in Nigeria. South-South region of the country is said to have the highest HIV prevalence in Nigeria, and Rivers State is one of the states in the region. The prevalence of HIV/AIDS in Rivers State is about 3.8, while Mother-to-Child Transmission is 1 per cent, according to government source. Rivers State has most of her population in the rural areas. According to National Agency for the Control of Aids, the rural area in Nigeria has higher rates of HIV than the urban centres. This revelation is worrisome and makes it imperative for serious attention to be given to

¹ Oyesomi, K.O., Making difference in HIV/AIDS awareness for Nigeria's development: The role of the media. In Okoro, N (Ed) *International journal of communication, an interdisciplinary journal of communication*, Nsukka, Vol 12 (1), 104-116, 2010.

the area that has continued to dominate discourse in terms of its precarious situation.

Human Immune Deficiency Virus (HIV) is a causative agent of Acquired Immune Deficiency Syndrome (AIDS). AIDS is regarded by medical experts globally as the most deadly sexually transmitted disease. According to the World Health Organization, cited in Nwagbo and Ubachukwu², “the seriousness of AIDS as a sexually transmitted disease stems not only from the fact that known cure has not been proffered to date”. AIDS was first reported in the United States of America in 1981, while according to Momoh, cited in Nwagba and Ubachukwu³, the first confirmed AIDS case in Africa was reported in Nairobi, Kenya while the concern about HIV infection and AIDS in Nigeria was raised in 1984 (p. 346). Since then till now the endemic disease has continued to pose very serious health, economic and socio-cultural concerns to the government of Nigeria and the people. AIDS is, therefore, seen as a threat to the society with billions of naira spent by government every year to control its spread and to reduce the risks of carriers dying of the disease.

Nigeria as a developing country has most of her population in the rural areas where cases of AIDS are more pronounced than in the urban areas. This has continued to pose socio-cultural, economic and religious concern to government and the people. However, ignorance, illiteracy and lack of adequate information and awareness about the prevalence, spread and control of the disease, especially in the rural areas of Nigeria have remained issues to be addressed. To address the ignorance and raise awareness among the people concerning the danger of the disease, communication experts believe that adequate and appropriate communication strategies should be adopted:

The central role of communication in the global war on HIV/AIDS has been very obvious. Since the outbreak of the epidemic, communities or the media in particular have played key roles in awareness creation, enlightenment, motivation, education, and persuasive advocacy among others. Communication is widely acknowledged as a powerful force for

² Nwagbo, C.R and Ubachukwu, P.O., AIDS-a threat to human society. In Ezekwesili, N, Ubachukwu, P and Nwagbo, C (Eds), *Introduction to natural sciences 2*, 346-362, 2001.

³ *Ibid.*

positive change. It is a very powerful tool for fostering learning as well as a tool for enhancing people's quality of life...⁴

It appears some communities, by virtue of their occupational callings and cultural life, may be more vulnerable to the scourge than others. It also appears that some specific channels of communication can be better utilized for achieving the goals of HIV/AIDS control, especially among some selected communities.

It is in view of the above submissions that this work seeks to analyze the positions of trado-modern communication for prevention of mother-to-child transmission of HIV/AIDS among Andoni women in Rivers State, Nigeria.

Theory

Diffusion of Innovation Theory is adopted for this work. Rogers originally wrote about this theory in the book, *Diffusion of Innovation*, published in 1962. Together with Shoemaker, the theory was further presented as the *Communication of New Ideas* in 1971, Ojobor (2016)⁵. Also writing on how Diffusion of Innovation Theory came about, Baran and Davies⁶ narrate that:

In 1962, Everett Rogers combined the information-flow research finding with studies about the flow of information and personal influence in several fields, including anthropology, sociology, and agricultural extension work. He developed what he called diffusion theory, which can be seen as an extension of Lazarsfeld original idea of the two-step flow. Roger's effort at integrating information-flow research with diffusion theory was so successful that information-flow theory became information diffusion theory and when it is applied to the diffusion of something other than information that is technology, it is called innovation diffusion theory

⁴ Jibril, A., Suleiman G., Abdullahi, A & Mohammed. A., Access and utilization of internet-mediated HIV/AIDS messages among students of the University of Maiduguri, Nigeria, in Ekeanyanwu, N.T. (Ed) *The Nigerian journal of communication, the journal of the African Council for communication education, Nigerian chapter* vol. 15 (2), 2018.

⁵ Ojobo, I.J., The role of communication in waste Management: the eswama experience, in Soola, E. Udoudo, A.J. & Ochonogor, I.C. (Eds) *Issues and trends in environmental communication*. Ibadan: Kraft Books Limited, 304-347, 2016.

⁶ Baran, S. J. & Davis, D. K., *Mass communication theory: foundation, ferment, and future*: India, 2007.

According to Rogers and Shoemaker⁷ diffusion is the process by which innovations spread to the members of a social system. Innovation, therefore, passes through stages before it is being adopted as explained by Baran and Davies:

Rogers assembled data from numerous empirical studies to show that when new technological innovations are introduced, they will pass through a series of stages before being widely adopted. First, most people will become aware of them, often through information from mass media. Second, the innovations will be adopted by a very small group of innovators, or early adopters. Third, opinion leaders learn from early adopters and try the innovation themselves. Fourth, if opinion leaders find the innovation useful, they encourage their friends-the opinion followers. Finally, after most people have adopted the innovation, a group of laggards or late adopters make the change...

According to Asadu⁸ diffusion of innovation theory came about following the modification of the modernization paradigm. He asserts that:

Rogers, a social scientist, by way of modifying modernization paradigm reasoned that for people to change from traditional to modern society they need to adopt new ideas, technologies, innovators and practices even without getting directly exposed to the media. This he called diffusion of innovation. Asadu continues by saying that the mass media will create the awareness of ideas and interpersonal communication will be used to persuade the people to adopt the innovation. He defines diffusion of innovation as the communication of innovation through certain channels overtime among members of a social system with certain effects.

Innovation, being a noble idea, lofty conception and action, is also a development initiative intended to impact positively on the people. To impact on the lives of the people, therefore, it must be diffused, synthesized and adopted. This is tied to communication. So, diffusion is a communication function of spreading development idea. The development idea will bring about social change and people gaining control over their environment.

⁷ Rogers, E.M. & Shoemaker, F.F., *Communication of Innovation*. New York: Free Press, 1971.

⁸ Asadu, C.A., *Anatomy of communication for development*. Choba: University of Port Harcourt Press Ltd, 2012.

Wogu⁹ makes a revealing assertion about Diffusion of Innovation Theory. He says that diffusion theory is a source-dominated theory that sees the communication process from the point of view of elite that has decide to diffuse an innovation. This theory improves upon information flow theory by providing more and better strategies for overcoming barriers to innovations. Diffusion theory assigns a very limited role to mass media: media mainly create awareness of innovation. Only the early adopters are directly influenced by media content. Others adopt innovations only after being influenced by other people. Rogers recommended that agents lead diffusion efforts, people who could go out in rural communities and directly influence early adopters and opinion leaders.

In diffusion of innovation, interests in diverse form also contribute to its effectiveness. The other source of influence is more diffusing but often effective. It stems from the many interests, especially economic but also cultural and social, that are affected by the mass media, particularly in respect of news and information. Powerful individuals and organisations can be hurt by the news and may also need it to further their ends. For this reason, they keep a close eye on media conduct for their own protection or seek to influence it. All in all, this adds up to an environment of expectation and scrutiny that has considerable cumulative influence¹⁰. McQuail continues by contending that although media are freely chosen by their audiences, actual people in audiences may not have personally chosen their media or the specific content to which they find themselves exposed. Audiences are connected to 'Distant' media sources in several ways, perhaps especially through the mediation of their family, friends and others in their social milieu.

The above assertion shows that diffusion of innovation theory recognizes differences in individuals, perceptions and interests. Therefore, acceptance of an idea, programme and initiative may pass through stages and time based on human behaviour and exposure, family background, social, political, economic and religious system to which an individual belongs.

⁹ Wogu, J.O., *Introduction to mass communication theories*. Nsukka: University of Nigeria Press Limited, 2008.

¹⁰ McQuail D., *McQuail's mass communication theory (fifth edition)*. London: SAGE Publication, 2005.

The theory describes how new ideas, information and culture are passed from people to people or from one geographical area to another. It involves a system of explanation on how freely, slowly or rapidly people in a society accept new ideas, depending on time, nature of media of communication and demographic variables of the target audience. This theory explains the development of nations and the spread of different cultures, Nwanne, in Mboho and Batta (2012)¹¹.

A critical perusal of this theory amidst the reality of Mother-To-Child Transmission of AIDS reveals the interconnectedness between the theory and the study. Mother-To-Child Transmission of AIDS is not an abstract thing. It involves physiological process which requires people's awareness and consciousness for its prevention and elimination. In fact, its success depends largely on the people's understanding and acceptance of methods and measures that have been put in place to prevent the spread of the virus. People differ in attitude and perception, and are constantly staying glued to their values, customs and other cultural underpinnings, for a change in attitude or for upholding of behaviour. This explains why the researcher adopted the theory for this study.

Andoni as a Rural Area of Rivers State

Andoni Local Government Area by location and comparison with other Local Government Areas of Rivers State is in the rural area. It is also the least developed area in Rivers State. According to the 2006 National Population Census, the population of Andoni is 217, 924. The area covers 233km², largely surrounded by sea. People of the area are predominately anglers (fishermen and women). As it is typical of rural people, the people of Andoni lack electricity, good health care centres, portable water and motorable roads, among others. Andoni, no doubt, is a rural area in view of the conceptualization of rural area by experts. In his view, Udoakah¹² notes that: the word rural brings to mind geographic locations in Africa with populations of hungry, wretched looking people and stunted, kwashiorkor riddled children. It conjures the image of a people who suffer in the farm from morning to evening but whose harvest is not commensurate with the effort and time spent; it conjures the image of a

¹¹ Mboho, M & Batta, H., *The companion to communication and development issues: essays in honour of Prof Des Wilson*. (pp. 445 - 457), 2012.

¹² Udoakah, N., *Development communication*. Ibadan: Stirling-Horden Publishers, 1998.

people who are starving, eating at best, once a day after returning from the market.

On his part, Adepoju¹³, cited in Udoakah asserts that “living conditions in rural areas are relatively poor and remuneratively non-farm employment opportunities are scarce. Besides, rural areas still lack basic social amenities (p. 49). Also, Ijere, cited in Nsereka (2018), says that “the word rural...connotes a place with agricultural orientation, with farm houses, barns, shed and other structures of similar purposes (p. 125). Rural areas generally refer to areas in a country that are not fully developed. They are areas in a nation where you still have high traditional lifestyles that cannot be found in the urban areas or centres¹⁴.

The experts cited above all agreed that the people who dwell in the rural areas are subjected to poverty, sufferings and do not experience the best that life offers. They are not also exposed to facilities that can enhance their potentials. It means, therefore, that a rural area entails place of residents of and for people whose conditions are in opposite direction with those in the urban centres. Rural areas do not entirely connote poverty, but has to do more with conditions of things that make life meaningful to the people. There are a few wealthy people in the rural areas, but they cannot enjoy electricity, good roads, good hospitals, good schools, banks, markets and good recreation centres. People in the rural areas also have limited access to information purveyors and the mass media. Till date, radio remains the most available source of information to people in the rural areas. However, because of illiteracy most people in the rural area do not understand the information that is transmitted through radio. Also cultural underpinning plays major role in deciding what information to retain, even among those who understand the messages that come through radio.

This is why the author believes that trado-modern communication can be relied on in creating awareness and sensitization of the people on the danger of HIV/AIDS, and also ensure the prevention of Mother-to-child transmission of the virus among Andoni women.

¹³ *Ibid.*

¹⁴ Asemah, E.S. & Anum, V., Radio as a tool for rural development in Nigeria: Prospects and challenges, in an *International journal of arts and humanities*, Ethiopia Vol. 2 (1), 17-35, 2013.

Communication

Communication maintains and animates life. It is also the motor and expression of social activity and civilization; it leads people and peoples from instinct to inspiration, through variegated processes and systems of enquiry, command and control; it creates a common pool of ideas, strengthens the feeling of togetherness through exchange of messages and translates thought into action, reflecting every emotion and need from the humblest tasks of human survival to supreme manifestations of creativity-or destruction. Communication integrates knowledge, organization and power and runs as a thread linking the earliest memory of man to the noblest aspirations through constant striving for a better life¹⁵. The above view about communication entails that it is the fulcrum around which life revolves. Life is embedded in it. It could also be inferred from the submission that communication moves life; and in it life is expressed. Communication gives hope when people come together to share experience as they move from their different individual levels to social setting where they are inspired in various ways. The social setting created by communication is enhanced through exchange of messages that create understanding. Omega and Nwachukwu¹⁶ note it thus:

“communication is, therefore, creating meaning. Meaning is the whole aim of communication. If communication does not convey meaning then the whole effort of communication is futile. A test of communication success is when the stimulus as it was initiated and intended by the sender corresponds closely with the stimulus as it perceived and responded by the receiver, and this is not possible without meaning.”

Richards, cited in Ndimele and Innocent¹⁷ says "communication is the process by which one mind so acts upon its environment that another mind is influenced and in that other mind, an experience occurs which is like the experience in the first mind, and is caused in part by that experience". By this, communication is viewed as a social process in which one's action affects another through understanding which produces the desired result. Communication connotes a process of sharing meaning and understanding between and among people, aimed at ensuring successful and sustainable social intercourse.

¹⁵ MacBride, S., *Many Voices One World*. New York: UNESCO, 1980.

¹⁶ Omega, C.U., & Nwachukwu, F.G., *Foundations of mass communication*. Port Harcourt: University of Port Harcourt Press, 2013.

¹⁷ Ndimele, O. & Innocent, K.H., *Fundamentals of mass communication, second edition*. Port Harcourt: M&J Grand Obit, 2016.

It means, therefore, that there is no communication without meaning sharing and understanding that will bring about successful and sustainable relationship. This is because communication is central to any attempt at inducing change in any society as it provides information that will enable people to understand and appreciate the need to participate in development initiatives¹⁸.

Modern communication

Modern communication, in this article refers to all means of communication involving the mass media. They are communication through radio, television, newspaper, magazine and film etcetera. Modern communication also involves the new media. They are all technologically-enabled platforms and succeed among the literate people. They are ubiquitous and known to most people in the world. These communication platforms spread information like the speed of light and penetrate boundaries into homes of people directly or indirectly connected to the messages. They can be categorized into the Print, Electronic and the Social Media. The Print and Electronic Media are further categorized as the Old Media while the Social Media are grouped as the New Media.

According to Orlu-Orlu¹⁹, print media are the means through which people get detailed analysis or report of event. The print media have unique characteristics of exemplifying and simplifying complex development issues and challenges largely by virtue of their capacity to explain and illuminate phenomenon as well as the permanence of their information custody, which enables the reader to have access to, read repeatedly and digest the information content. Soola goes further to say that in addition, the print media may also be magnified or miniaturized as pamphlets, posters, handbills, billboards and so made available across various strata of society. In addition, magazine, by being weekly or monthly, can devote more time and resources to researching the problem and providing empirical, quantitative data that further shed light on the phenomenon and its seemingly intractable nature. Generally, newspaper and magazine are elitist in nature. Most importantly, the audience must be literate to access development messages in print. In a developing economy like Nigeria, level

¹⁸ Ochonogor, I.C., Multimedia communication approach to managing flooding in the river Niger plains of Nigeria, in Soala, E; Udoudo, A.J & Ochonogor, I.C. (Eds) *Issues and trends in environmental communication*. Ibadan: Kraft Books Limited, 62-82, 2016.

¹⁹ Orlu-Orlu, H.C., *Media literacy, religion and child upbringing in a multimedia society*. Owerri: Hysab Print and Publisher, 2013.

of education, level of income and various other socio-economic factors hinder the effectiveness of print media...(Soola; Ojebode, cited in Obasanjo²⁰). Magazine is known as the store house of variety of stories, Orlu-Orlu.

Writing about radio, as one of the Old Media, Soola²¹ notes that radio has continued to enjoy its pride of place as the most popular, though arguably most influential, medium of mass communication, particularly among predominately traditionally, largely non-literate societies where electricity is in short supply and often erratic. On the other hand, he says that in spite of being an elitist, expensive and urban-centrist medium, television continues to endear itself to its captive audience by reason of its quadruple advantage of sound, light, motion and simultaneity. Ndimile and Innocent²² note that the radio is not limited by illiteracy, poverty, or poor infrastructural facilities...Radio programmes are supplemental, that is, we can listen to them while doing other things. The television shares most of the features of radio, but in addition, the television adds the feature of having the ability to back its messages up with images. The television is audio-visual, that is, it presents its messages through sound and light. People obtain much of their information from the media which play an important part in selecting which pieces of information to communicate to the public and in addition to giving credibility to information provided through other sources, Dyck and Zingales²³.

Social Media (SM) are now household names the world over. Social media are being discussed both at the micro and macro levels of social intercourse. These internet-enabled platforms are also at the heart of economic, political, legal and cultural interactions, among others. Social media have continued to attract huge associates because of their digital

²⁰ Obasanjo, J.O., The mass media agenda and global warming debate in Nigeria, in Soola, E. Udoudo, A.J & Ochonogor, I.C (Eds) *Issues and trends in environmental communication*, 108-123, 2016.

²¹ Soola, E.O., Noise pollution and media: a Nigerian perspective. In Soola, E. Udoudo, A.J & Ochonogor, I.C. (Eds) *Issues and trends in environmental communication*. Ibadan: Kraft Books Limited, 304-347, 2016.

²² Ndimele, O. & Innocent, K.H., *Fundamentals of mass communication, second edition*. Port Harcourt: M&J Grand Obit, 2016.

²³ Dyck, A. & Zingales, L., *The corporate governance role of the media*. In World Bank (ed.) *The right to tell: The role of mass media in economic development*. Washington D.C: The World Bank (pp.107-137), 2002.

nature, Reuben²⁴). Okon²⁵ notes the democratization nature of the social media thus:

Within the conspectus of the new media, however, the biggest game changers appear to be the social media. Through the social media, friends, families, colleagues and people of convergent ideologies build networks of interactivity and social exchange with a view to transferring and sharing events on the go. The beauty of it all is that the social media platform allows the voiceless to be heard and the seemingly uneducated to contribute to rational discourse because the rules for structured language appear a bit flexible

Social media, therefore, are environments that are open to all, thus blurring the barriers of ownership embargo and economic determinant factors for news making and placement. The only and simple requirements for entering their gates are creation of an account and downloading of the various Apps, as well as weekly and monthly subscription for data, through the various telecommunication networks. Social media create and recreate reality with high speed which enables any pieces of information on them to be available to the heterogeneous but highly interconnected audiences.

Bansal²⁶ argued that each evolution in media shifts control farther out of the hands of the persons who operate the media and move into the hands of the people who use it. Control always shifts somewhat more from the one to the many. That each evolution in media technology always shifts control farther away from the one and more towards the many is a historical fact, visible over the millennia. Social media are tools for globalization. Their penetrations go into every boundary of the world. Social media represent paradigm shift in how people discover, read and share news and information content, which has in turn brought about the democratization of information and transformed people from being

²⁴ Reuben, A.A., *Perception of Port Harcourt-based print media journalists on the credibility of news social media as sources of news*. In Uwakwe, O. (Ed.) *Global communicator*, vol. 3 (1) 133-146, 2018.

²⁵ Okon, G.B., *Social media use by two dominant political parties in Rivers State: Their techniques, application and followership*. *Review of communication and media studies*. Port Harcourt. 1(1), 132-142, 2015.

²⁶ Bansal, S.K., *Information technology in journalism*. New Delhi: A.P.H Publishing Corporation, 2009.

content readers to publishers²⁷. But an increasing source of concern among communication experts in this respect, is the alienation of the rural communities in the face of modern mean of information delivery²⁸.

Traditional communication

Culture is the foundation of communication and traditional communication beautifies culture. They exist together for effective functionality of the society. Traditional communication has always existed side-by-side with the people-whose life, history, monarchy and pastoral existence have been enhanced and sustained through it. MacBride 1980 recognizes this when he notes that since time immemorial, the human race has used primitive, simple forms of communication, which have been enhanced, extended, refined, and are still in use today in all societies despite the continuous invention of new technologies and the increasing sophistication and complexity of interaction between people (p.47). Similarly, Ukonu and Wogu²⁹ maintain that Africa, for all time, has had distinctive, formal mode of social interaction. Proverbially, she has always had sufficient (communication) firewood in her forests to cook her food (p.1).

Traditional communication is, therefore, intrinsic. Its natural pre-eminence makes it practicable among a people wherein it exists. It is a form of communication by the people and for the people. Traditional communication system refers to modes of meaning exchange that are rooted in a people's culture, and which began from the era of preliterate and pre-modern man. Traditional communication encompasses a people's total way of life, including concepts and objects that do not deal directly with communication as a subject³⁰.

Writing about traditional communication, Dede, cited in Ukonu and Wogu (2008)³¹ observes that Africa's traditional modes of communication form interplay or synthesis of the traditional customs and conflicts of a community, its harmony and discord, its cultural affinities and disparities

²⁷ Ezinwa, A.C. & Okoye, G., The knowledge and application of social media in public relations practice in Nigeria. *Review of communication and media studies*. 1 (2), 56-67, 2015.

²⁸ Nsereka, B., *Trado-modern media in grassroots sensitization: the NOA approach*. Port Harcourt: Geocella Integ.Serv.Ltd, 2013.

²⁹ Ukonu, M.O. & Wogu, J.O., *Communication systems in Africa*. Nsukka: Charisma Publishers, 2008.

³⁰ *Ibid.*

³¹ *Ibid.*

as well as its culture-specific values and practices p. 5). According to Nsereka:

“the traditional media include the town crier and talking drums, the age-grade networks, traditional religious groups, the symbols of traditional rulership like the staff of authority and the oramedia, that is, the oral folk media. The horns and talking drums, for instance, constitute the nexus between the folk and the mass media in Africa, since like radio, they communicate messages over long distances “

Dede, cited in Ukono and Wogu also notes that these traditional modes include oral traditions like mythology, interpersonal relations or interactions, symbols, signs, oral literature like poetry, storytelling, folktales, proverbs, riddles and jokes, etc., as well as dance, drama, masquerades, rituals, etc. No doubt, the traditional modes of communication put the people in the communication realm. This is because the people are familiar with the modes and see them on daily basis. Also, those who operate these modes of communication are people from the same cultural background with the people for whom the messages are intended. Traditional modes of communication are therefore cultural and transactional as noted by Ukonu and Wogu:

“when we say that traditional media system is transactional, we mean that this form of communication involves a relay of message by the communicator and a dynamic exchange of meaning and feedback in the communication context. Each participant is giving and receiving information, acting and reacting, agreeing and disagreeing, creating and recreating, pleasing and being pleased or displeased all in a dynamic transaction. “

Messages from traditional media are adaptable to the experience of rural residents. The nearness of the source, the use of familiar codes, which bring about an exchange of meaning, and the simplicity and familiarity of the content of the message mean that messages are easily useful.

Integration (Trado-Modern-Communication)

According to Chukwu, 2006, cited in Nsereka³², the argument for absorption of both technologically-mediated communication media and traditional media, for enhancement of the society and the masses, is hinged on “a vision of a society that has no reason to remain in perpetual conflict with those instruments which it can accommodate in the process of streaming our communication systems for greater effectiveness. The above submission is very relevant to the issue addressed in this article. Mother-To-Child Transmission of AIV/AIDS has remained threatening in the world, especially in the underdeveloped countries. Consequently, attempts are constantly being made to avoid being in unending conflict with the tools which society can accommodate to ensure effective communication for the overall good of the people.

Therefore, having explored the relevance of the various communication platforms and by implication, their peculiarities and applications, there is need for their synchronization to address some of the issues in the society. Mother-To-Child Transmission of HIV/AIDS is one of the issues that are affecting Nigeria. Rivers State has 5.8 HIV/AIDS prevalence, while Mother-to-Child Transmission is 1 per cent. According to National Agency for the Control of Aids, rural areas in Nigeria have higher rates of HIV than the urban centres. Andoni is one of the rural areas of Rivers State, and its status prompted this work. Having explored the nature of Andoni and her people in page 6 of this work, there is need for strong advocacy to ensure integration of modern and traditional modes of communication, in the campaign for the prevention of Mother-To-Child Transmission of HIV/AIDS among women in the area.

Combining technologically mediated communication with the largely interpersonal indigenous communication for greater effectiveness of communication in support of development is the centerpiece of the indigenization framework by which technological media will be selected for application based on their capacity to fit into the indigenous patterns,³³. Nsereka adds that a combined use of the interpersonal communication and the modern media leads to interesting socio-cultural results, as using one medium to complement, supplement or reinforce another is necessary for effective integrated rural development.

³² Nsereka, B., *Trado-modern media in grassroots sensitization: the NOA approach*. Port Harcourt: Geocella Integ.Serv.Ltd, 2013.

³³ *Ibid.*

The above scholars have stressed the role of integrated communication strategy in achieving effective communication and by extension addressing the challenges confronting people in the rural areas amidst HIV/AIDS peril. Their positions do not attempt to diminish the effects of the modern media; rather they have advanced a communication pattern that is appropriate for some people under some kinds of conditions and in some places. This is why Ukonu and Wogu (2008)³⁴ argue that modern media are fast, versatile, but impersonal, unidirectional, elitist and alienating. Traditional media are credible, integrative, but slow. There ought, therefore, to be a systematic approach to integrating traditional and modern systems...in a complementary fashion (p.49). Generally, the mix media approach remains indispensable for effective media campaign...The mass media especially the radio have always played an important role in promoting modernization and development to people as well as articulating the views of the common man. But the benefits of the mass media do not undermine strength of the traditional media for the same purposes, (p.24).

As equally noted by Jibril, Suleiman, Abdullahi and Mohammed³⁵:

Internet mediated HIV/AIDS messages do not help in advocacy against the spread of HIV/AIDS. Many of the respondents argue that the messages do not help in advocacy (74.9%). Based on this, we conclude that the mere presentation of HIV/AIDS advocacy campaign messages through the internet or ICT would not be enough to stop the spread of HIV/AIDS...It is therefore recommended that other familiar interpersonal communication strategies should be applied to further convince people to adopt the desired attitudinal change necessary for preventing the spread of the disease

The above empirical submission has further buttressed the need for integration of modern and traditional modes of communication as mechanism for prevention of mother-to-child-transmission of HIV/AIDS among Andoni women of Rivers State. The rural dwellers need information about health care, weather, family planning, agriculture...When the rural dwellers do not get the necessary information, in a well-coordinated fashion, they lose confidence in the

³⁴ Ukonu, M.O. & Wogu, J.O., *Communication systems in Africa*. Nsukka: Charisma Publishers, 2008.

³⁵ Jibril, A., Suleiman G., Abdullahi, A. & Mohammed. A., Access and utilization of internet-mediated HIV/AIDS messages among students of the University of Maiduguri, Nigeria, in Ekeanyanwu, N.T. (Ed) *The Nigerian journal of communication, the journal of the African Council for communication education, Nigerian chapter* vol. 15 (2), 2018.

government and the society at large³⁶. To avoid this, Udoudo believes that a combination of traditional modes of communication amidst the technological-driven world-whether radio, television, newspaper or the new media, if carefully organized and blended, can lead to interesting cultural experience and results, especially where peculiarity of its environment is respected (2017)³⁷.

Conclusion

Till date, HIV/AIDS remains life-threatening disease the world over. Nigeria as a country in particular, has continued to make efforts in curtailing and eradicating the endemic disease. Consequently, several measures and programmes have been launched in order to achieve the goal. However, most of the measures and programmes are urban-centered. So, only the educated urban-based people are mostly targeted, while the largely illiterate, poor and vulnerable people in the rural areas are wallowing in ignorance concerning modes of transmission and threat of the disease. When the rural dwellers are remembered, individuals and agencies carrying campaign against the disease disseminate messages meant for them through the mass media. As a result of this, the target audiences are missed and the problem continues.

Considering the challenges posed by the disease and the roles of communication in preventing spread of the ailment, a better communication strategy is, therefore, imperative. Trado-modern communication, based on empirical facts about the merits of their fusion in awareness creation, advocacy and spread of innovation in the society, should therefore, be considered as catalyst for prevention of mother-to-child transmission of HIV/AIDS among Andoni women.

REFERENCES

Ansu-kyeremeh, K., (2005), *Indigenous communication in Africa: Concept, application and prospects*. Accra: Ghana University Press.

Asadu, C.A., (2012), *Anatomy of communication for development*. University of Port Harcourt Press Ltd: Choba.

³⁶ Asemah, E.S. & Anum, V., Radio as a tool for rural development in Nigeria: Prospects and challenges, in an *International journal of arts and humanities*, Ethiopia Vol. 2 (1), 17-35, 2013.

³⁷ Udoudo, A.J., *Lecture note on comparative media system*, Department of Linguistics and Communication Studies, University of Port Harcourt, 2017.

Asemah, E.S. & Anum, V., (2013), Radio as a tool for rural development in Nigeria: Prospects and challenges, in an *International journal of arts and humanities*, Ethiopia Vol. 2 (1), 17-35.

Bansal, S. K. (2009), *Information technology in journalism*. New Delhi: A.P.H Publishing Corporation

Baran, S.J. & Davis, D.K., (2007), *Mass communication theory: foundation, ferment, and future*: India.

Dede, K., (1997), *Traditional communication systems*. Owerri: Canun Publishers.

Dyck, A. & Zingales, L., (2002), *The corporate governance role of the media*. In World Bank (ed.) *The right to tell: The role of mass media in economic development*. Washington D.C: The World Bank (pp. 107-137).

Ezinwa, A. C. & Okoye, G., (2015), The knowledge and application of social media in public relations practice in Nigeria. *Review of communication and media studies*.1 (2), 56-67.

<https://naca.gov.ng/fact-sheet-prevention-mother-child-transmission-pmtct-2016>, retrieved Dec. 12, 2018

<https://www.vanguardngr.com>, retrieved December 18, 2018

<https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death>

Jibril, A, Suleiman G., Abdullahi, A. & Mohammed A., (2018), Access and utilization of internet-mediated HIV/AIDS messages among students of the University of Maiduguri, Nigeria, in Ekeanyanwu, N.T (Ed) *The Nigerian journal of communication, the journal of the African Council for communication education, Nigerian chapter* vol. 15 (2).

MacBride, S., (1980), *Many Voices One World*. New York: UNESCO.

Mboho, M. & Batta, H., (Eds), *The companion to communication and development issues: essays in honour of Prof Des Wilson*. (pp. 445 - 457). Uyo:

McQuail D., (2005), *McQuail's mass communication theory (fifth edition)*. London: SAGE Publication.

Ndimele, O. & Innocent, K.H., (2016), *Fundamentals of mass communication*, second edition. Port Harcourt: M&J Grand Obit.

Nsereka, B., (2013), *Trado-modern media in grassroots sensitization: the NOA approach*. Port Harcourt: Geocella Integ.Serv.Ltd.

Nwagbo, C.R. and Ubachukwu, P.O., (2001), AIDS-a threat to human society. In Ezekwesili, N., Ubachukwu, P. and Nwagbo, C. (Eds), *Introduction to natural sciences 2*, 346-362.

Obasanjo, J.O., (2016), The mass media agenda and global warming debate in Nigeria, in Soola, E. Udoudo, A.J & Ochonogor, I.C (Eds) *Issues and trends in environmental communication*, 108-123.

Ochonogor, I.C., (2016), Multimedia communication approach to managing flooding in the river Niger plains of Nigeria, in Soola, E; Udoudo, A.J. & Ochonogor, I.C. (Eds), *Issues and trends in environmental communication*. Ibadan: Kraft Books Limited, 62-82.

Ojobo, I.J (2016) The role of communication in waste Management: the eswama experience, in Soola, E. Udoudo, A.J. & Ochonogor, I.C., (Eds) *Issues and trends in environmental communication*. Ibadan: Kraft Books Limited, 304-347.

Okon, G.B., (2015), Social media use by two dominant political parties in Rivers State: Their techniques, application and followership. *Review of communication and media studies*. Port Harcourt. 1(1), 132-142.

Omego, C.U., & Nwachukwu, F.G., (2013), *Foundations of mass communication*. Port Harcourt: University of Port Harcourt Press.

Orlu-Orlu, H.C., (2013), *Media literacy, religion and child upbringing in a multimedia society*. Owerri: Hysab Print and Publisher.

Oyesomi, K.O., (2010), Making difference in HIV/AIDS awareness for Nigeria's development: The role of the media. In Okoro, N (Ed) *International journal of communication, an interdisciplinary journal of communication*, Nsukka, Vol. 12 (1), 104-116.

Reuben, A.A., (2018), *Perception of Port Harcourt-based print media journalists on the credibility of news social media as sources of news*. In Uwakwe, O. (Ed.) *Global communicator*, vol. 3 (1) 1331-146.

Rogers, E. M. & Shoemaker, F. F., (1971), *Communication of Innovation*. New York: Free Press.

Soola, E.O., (2016), Noise pollution and media: a Nigerian perspective. In Soola, E. Udoudo, A.J & Ochonogor, I.C (Eds) *Issues and trends in environmental communication*. Ibadan: Kraft Books Limited, 304-347.

Udoakah, N., (1998), *Development communication*. Ibadan: Stirling-Horden Publishers.

Udoudo, A.J., (2017), *Lecture note on comparative media system*, Department of Linguistics and Communication Studies, University of Port Harcourt.

Ukonu, M.O. & Wogu, J.O., (2008), *Communication systems in Africa*. Nsukka: Charisma Publishers.

Waju, J.O., (2008), *Introduction to mass communication theories*. Nsukka: University of Nigeria Press Limited.

COGNITIVE DECLINE IN THE ELDERLY -FROM UNDERSTANDING TO MAKING A PLAN-¹

ANDREEA ZAMFIRESCU,*

andreea.zamfirescu@gmail.com

SORINA-MARIA AURELIAN,**

RUXANDRA MIHALACHE,***

ANA CAPISIZU****

ABSTRACT: *Longevity is a success. Cognitive decline appears in the context of ageing. Physiological cognitive decline must be differentiated from pathological degradation which leads to disease, the final form being dementia. The current pharmaceutical therapeutic possibilities for neurocognitive disorders are limited; succeeding only in slowing down the evolution of the disease and in lessening some behavioural disorders, yet in more than 10 years there has been no improvement in the field. Other methods, using communication means, such as physical exercise, therapy through dancing, music and painting seem to be more efficient at certain levels. We can say that communication is a key element in the diagnosis and current treatment of neurocognitive disorders, offering new perspectives for the future.*

KEYWORDS: *ageing, cognitive decline, dementia, communication*

Population ageing. Physiological and pathological ageing.

We are witnessing the rise of life expectancy, and this fact is a success at the social level because it is due to some social and economic factors, such as improved and safer living conditions, appropriate resources and the development of medical sciences. Mortality has considerably

¹ Translated by Andreea Maria POPESCU, Associate Professor, PhD., Faculty of Foreign Languages and Literatures, University of Bucharest.

* Assistant Professor, MD, PhD., Geriatrics Department, Faculty of Midwifery and Nursing, University of Medicine and Pharmacy "Carol Davila", Bucharest.

** Lecturer, MD, PhD., Geriatrics Department, Faculty of Medicine, University of Medicine and Pharmacy "Carol Davila", Bucharest.

*** Assistant Professor, MD, PhD. attendant., Geriatrics Department, Faculty of Midwifery and Nursing, University of Medicine and Pharmacy "Carol Davila", Bucharest.

**** Associate Professor, MD, PhD., Geriatrics Department, Faculty of Midwifery and Nursing, University of Medicine and Pharmacy "Carol Davila", Bucharest.

decreased once antibiotics were discovered, allowing for infectious diseases to be cured. Due to modern treatments some diseases which once were lethal have become chronic diseases. The rise of life expectancy, simultaneously with the decrease of births, causes population ageing² which is a global phenomenon currently unfolding. In this context, Ana Aslan's recommendation "*Let's make years matter!*" for a meaningful ageing, becomes the most important purpose. If we wish to talk about "successful ageing", it must be done in the context of "active ageing", meaning that the elderly must be independent, active participants in the social and cultural life, effectively contributing to society. In the traditional family the elderly had a well defined role, a respected role, they were provided with the safety of the home and they could render valuable their experience and time in the middle of the family, thus feeling useful. In the modern society the elderly do not often have this role, as the independence acquired by the young family also comprises the lack of involvement of the elderly in daily matters. In some cultures a way to render the elderly valuable is to introduce volunteering in their midst³.

The ageing process is irreversible, continuous and gradual. The rhythm of ageing is individual and it can be slow or increased. That is why we talk about chronological age (the number of years) and physiological age. In a slowed rhythm of ageing, the person has a smaller physiological age than the chronological one, in other words he "looks younger than one thought". Age related physiological changes involve most of the functions. Ageing also implies cognitive decline which, if it observes "the ageing slope" represented in the general population, may be considered physiological. When the slope suddenly modifies, the cognitive parameters abruptly deteriorate, the context changes from the physiological domain to the pathological one, namely to the disease, neurocognitive disorder.

It is very important that generally speaking the population should get informed and advised on the changes of memory representing cognitive decline in order to send the affected person towards the medical specialists. It is equally important to know the signs and the evolution of the disease. Generally speaking, the family members are the first to notice and signal the cognitive decline. There are also cases in which the person

² National Institute on Aging, *Why Population Aging Matters: a Global Perspective*. Bethesda: NIH Publ. No 07-6134, 2007.

³ International Volunteer Day, 5th of December, WHO (1985).

lives alone and does not have close relatives to assume the responsibility and support for the person's needs. It is advisable in all situations, especially in these, to make a correct, realistic planning, regarding different legal issues, managing the financial problems of the person, the way he wants his resources to be managed, choosing the type of nursing and treatment, to make clearly expressed specifications, regarding all the wishes of the elderly person.

The number of the persons diagnosed with neurocognitive disorders is increasing⁴. On the one hand, the population grows and at the same time the number of the elderly grows, age being the main risk factor for the incidence of memory diseases. Taking into account the age groups, we can notice that at every 5 years the prevalence of neurocognitive disorders doubles⁵. There are also cases of neurocognitive disorders at a young age, but these are rare, most of them being genetically determined. Many persons are not diagnosed with cognitive decline because of the lack of access to medical services. Many people go to a specialist only in late stages, being highly affected by behavioural troubles. The main cause is the lack of education of the population, the family does not know how to understand the initial symptoms or they think wrongly as changes in the context of normal aging. As we presented above, it is important to make the difference between normal and pathological in cognitive decline in order to provide the patient with the appropriate medical therapy and counselling as soon as possible.

Alzheimer's Disease International estimated for 2017 a number of 50 million people suffering from dementia in the world⁷. Since there are no efficient methods of prevention, the estimates are worrying, the prevalence of the disease doubling at every 20 years: 75 millions in 2030 and 131.5 millions in 2050 respectively. A large amount will be in the low and middle income states, as a percentage of 58% of people living in such states are diagnosed with forms of dementia.

Cognitive decline, mild cognitive impairment, neurocognitive disorder, dementia, Alzheimer's disease. The gerontologist's perspective

One of the first significant books which describes memory was published by Delay and it talks about three kinds of memory: sensitive

⁴ World Alzheimer Report, *The Global Impact of Dementia*, 2015.

⁵ Wimo A., *The magnitude of Dementia occurrence in the world*, Alzheimer's disease Associated Disorders, 2004, p. 17:63-67.

and motor (common), social (instrumental) and autistic⁶, the author also approaching memory disorders, such as “senile” amnesia⁷. The pathologic degradation of the cognitive function in time can be represented as a continuum: cognitive decline, mild cognitive decline, dementia in a low, moderate and eventually severe degree⁸.

Commonly said, dementia is a term having negative connotations; etymologically speaking, it comes from the Latin word *de* – separated, *mens, tis*= spirit (being identified with madness). It is an old term which refers to the diminishing, sometimes irrevocable, of the psychological functions linked to an organic alteration of the brain cells⁹. In this context, redefining dementia as a neurocognitive disorder accordingly to the new classification DSM V (May 2013) has the role to reduce both the stigmatizing of the patients and the underlying of the importance to etiologically classification of these diseases.

Alzheimer’s disease (AD) is the most frequent form of dementia, representing 60-70% of the total cases of dementia¹⁰. In AD symptoms are progressive: the decrease of the cognitive function, the decrease of functional autonomy, and then the decrease of mobility. The evolution can be connected with affective disorders, the most frequent being depression, which can precede the cognitive dysfunction, and in the end behavioural disorders might appear¹¹. Cognitive deficits represent a decline from the previous functional level and cause a significant degradation of social and professional work.

Starting with the diagnosis of AD determined by Alois Alzheimer in 1906 until recently, the diagnosis certainty was provided only by the anatomic-pathological exam. There currently exist highly performing imagistic techniques and laboratory analyses which support the diagnosis.

The cardiovascular risk factors, such as obesity, diabetes, arterial high tension, hypercholesterolemia and atherosclerosis were associated with an increased risk of having both vascular dementia and AD.

Cognitive decline is usually closely connected to depression, this relationship being in both ways: repeated depressive states at adult age

⁶ Delay, J., *Les trois memoires*, . s.l.: Presses Universitaires de France, 1949.

⁷ Les Maladies de Mémoires, L’amnésié sénile.

⁸ Budson AE, et al. *Practica Neurolo*. 2012; 12:88-96.

⁹ Rusu, V., *Medical Dictionary*, Bucharest, Medical Publishing House, 2001.

¹⁰ Fratiglioni, L., Launger, Lj., *Incidence of dementia and major subtypes in Europe: a collaborative study of population- based cohorts*, *Neurology*, 2000, p. 54: S10-S15.

¹¹ Lovestone & Gauthier 2000.

are a risk factor for the appearance of cognitive degradation with the elderly or vice versa: cognitive degradation causes an emotional apathy manifested through depression. Having a previous depression increases with up to 2.5 the risk of AD, this connection being independent of the cardio and cerebral-vascular risk factors. The highest risk, up to four times more serious, is found in the case of the persons having depression before being 60 years old¹².

There are studies demonstrating that there is a link between the risk of having AD and other potentially protective modifying factors, such as education, intellectual activities, recreational activities, physical exercise or healthy diet¹³. In the specialized literature it is shown that dementia risk was decreased with 46% in persons with important cognitive reserves who deployed complex cognitive activities¹⁴.

There are reversible and irreversible forms of dementia. When assessing cognitive decline we must exclude some reversible medical causes, such as dysfunctions of the thyroid, troubles of some electrolytes, and that is why the “somatic” medical control constitutes the first stage in assessing this disease.

The diagnostic methods include psychological tests of memory. The quickest one is the 5 word test during which the person is asked to reproduce 5 words after a few minutes interval (the number of reproduced words is noted). The verbal fluency test refers to the enumeration of some words in a given domain (the number of words in a time lapse is noted). The clock drawing test, Sunderland¹⁵, assesses especially the temporal – spatial orientation and consists in drawing a clock dial and the correct writing of the figures on the dial, then indicating with the clock hands a certain time-line. Another standard test is, Mini Mental State

¹² Geerlings, M.I., *History of depression, depressive symptoms, and medial temporal lobe atrophy and the risk of Alzheimer disease.*, *Neurology*, 2008, p. 70:1258–1264.

¹³ Jedrzejewski, M.K., Lee, V.M., Trojanowski, J.Q. *Lowering the risk of Alzheimer's disease: evidence- based practices emerge from new research.* *Alzheimers Dement*, 2005, pg. 1:152–160.

¹⁴ Valenzuela, M.J., Sachdev, P., *Brain reserve and dementia: a systematic review*, *Psychol Med*, 2006, p. 36:441–454.

¹⁵ Sunderland T., Hill J.L., Mellow A.M., Lawlor B.A., Gundersheimer J., Newhouse P.A., Grafman J.H., *Clock drawing in Alzheimer's disease. A novel measure of dementia severity*, *J. Am Geriatr Soc* 1989; Aug; 37 (8): &25-9.

Examination¹⁶ (MMSE) which can be applied quite quickly, collecting information from several domains: orientation, recording information, attention and calculus, reproducing information, language. The score allows diagnose in low, moderate or severe cognitive deficit. Psychological evaluation is linked to the clinical and paraclinical medical examination (laboratory exams or imagistic ones, like computerised tomography and nuclear magnetic resonance.)

Therapeutic means in cognitive decline

Prevention is the first and most important method of fighting against all diseases. Modern medicine makes more and more efforts in this domain as benefits have proved to be very significant. For cognitive decline prevention should be made in young adults, the most important being the control of the cardio vascular risk factors. This means maintaining the values of arterial pressure in normal ranges (targets being under 140 mmHg, sometimes even under 130 mmHg, according to new guidelines), the control of the blood sugar level (values under 120mg/dl), the control of triglyceride values, the total cholesterol, the LDL- cholesterol (lower and lower target values for the “bad” cholesterol), reaching some protective values of HDL cholesterol (higher values for the “good” cholesterol). These figures can be influenced by what we call today “life style”: Mediterranean type diets (involving an increased consuming of vegetables, fruit and fish, a moderate consuming of meat), frequent physical exercise, avoiding stress. It should be noted that in modern medicine stress has become a well-established risk factor for cardio-cerebral-vascular diseases and not only.

The first type of treatment which we recommend to those having cognitive decline is cognitive stimulus: reading, crosswords, figure games (Sudoku), memory and attention games (classical or on electronic platforms of the e-gamming type). Socializing is also very important, interacting with other persons being a precious stimulus with multiple consequences, both affective and cognitive. We must keep in mind that humans are social beings and that they accomplish themselves only in relationship with other people.

In the case of the mild cognitive decline the pharmaceutical treatment recommendations are: cerebral vascular dilatators, nootropics, others

¹⁶ Folstein, M.F., S.E. Lolstein, McHugh, P.R., *Mini-mental state: A practical method for garding the mental state of patientsfor the clinician*, Journal of Psychiatry Research, 1975, p. 189-198.

neuro-regenerating drugs. In the case of more advanced disease, we use for about 20 years, two classes of anti-dementia drugs which act at the level of neuronal synapses. The benefits of these treatments consist in slowing down the evolution of the disease and controlling behavioural disorders which frequently associate with cognitive decline. Medical research, regarding the discovery of new pharmaceutical therapies in dementia, has been unsuccessful for the last 10 years¹⁷. All the newly tested therapeutic lines were stopped either because of the lack of benefits or because of highly dangerous adverse effects. There are many discussions linked to the cost -benefit report of the anti-dementia drugs which are now being used.

Given this context, it is worth underlying that there are other non-pharmaceutical treatment means which seem to have superior benefits, such as physical exercise (kinetherapy or adapted physical activity), dancing, music and painting for which there are specialized therapists.

Adapted physical activity is a quite new technique; it is performed individually or in a group of 10-12 persons, twice a week: the meetings last 1 hour and 15 minutes. The patients are placed in real life situations and the work is adapted to their needs: balance, movement ability, strength, the main purpose being to prevent dependency. The consequences are increased autonomy, stimulating the desire to live, the growth of self-esteem. The therapy has effects ranging from cognitive and memory stimulation, social stimulation, regaining the pleasure of movement through games. In France this type of therapy¹⁸ is refunded by the insurance company, while for pharmaceutical antidementive therapy the funding has been stopped a year ago. There is a new orientation of the treatment towards occupational therapy, language stimulation, socializing and movement therapy. These treatments are sometimes cheaper than pharmaceutical therapy. They are maybe more difficult to be quantified on an efficiency scale, they need to devote more time to the affected persons, it is not a simple pill which can be administered in a few minutes, but it provides the patients with a stimulus in the most profound domain, emotion. These techniques imply using efficient methods of communication, in most cases communication being achieved through emotion.

¹⁷ World Alzheimer Report, *The global impact of dementia* -, 2015.

¹⁸ "Siel Bleu" Group started in France 1997, its objective being a better quality of life for frail people by using adapted physical activities.

Some recommendations instead of conclusions

As it is a domain of interest in the geriatric field, we met many patients, each with their own story. Each patient perceives differently cognitive decline, according to the level of education, personality or stage of the disease.

Memory disorders as perceived by an individual are firstly considered as “subjective memory impairment”. Many of these symptoms are denied by the applied tests, as in many cases, especially with the young, it is only overworking, oblivion being a physiological method of cleaning the memory in order to provide free space for the new information. Other memory disorders in the same field are those appearing due to a lack of attention without being forms of pathology linked to memory disorders, as they are due to a lack of motivation. The lack of attention can also be part of a depressive disorder which implies that the depression must be diagnosed and treated.

When symptoms and diagnostic tools indicate a pathologic cognitive decline, it is very important how the diagnosis is being communicated to the patient and how he and the family are advised concerning the treatment and the prognosis of the disease.

In the beginning of the disease there predominates denial, non acceptance, drama. Sometimes even usual talks during which the patient notices his memory disorders or his logic, or even the test that we apply to evaluate the cognitive impairment makes the person face the perspective of the disease, creating feelings of frustration, confusion, aggressive behaviour. A very important role is played at this stage by the doctor-psychologist-patient communication.

In advanced dementia the central role of treatment is taken over by care. In the advanced stage when the patient has moments of lucidity the situation can be very confusing both for him and for the caregiver. Relating to the person with severe dementia can be achieved only by understanding the symptoms of the disease and by very good communication techniques. In many cases the people around perceive only the behaviour of the ill person: agitation, aggression or apathy, but this is only the reflection of a need which the patient cannot explain otherwise such as pain, fear or something else. Of all behavioural disorders the only one that does not bother the caretaker is apathy because in this case the patient is calm. Yet, apathy must be analysed just like the other behavioural disorders in order to find causes and implicitly solutions. The starting point is to try to understand what the ill person

feels, to understand that he relates differently with time. He lives in a suspended time, a past mixed with the present and the future, in many cases the past being idealized. The reality of the present is in most cases difficult to accept and the ill persons sometimes prefer a different reality; they do not pretend, they have a conscience of the subconscious. They frequently get stuck at a certain age, in a different time, that is why they do not recognize themselves in photographs or in the mirror. The time they relate to can be linked to a joyful moment or on the contrary a traumatic one. In such a case they often return to the moment, as if trying to mend it in order to get rid of it. Every behavioural act of the ill person has a meaning, but it is not our meaning, it is their meaning, their language. They must not be corrected by us, their behaviour is the consequence of a fact happening in the psyche of the ill person. He must not be brought back to our reality, he cannot change, we must adapt our behaviour and accept the person, accept a different reality and admit that we cannot change their reality. If one tries to bring him back to reality, one creates frustration, confusion, aggressive behaviour, an overall increased degradation.

Actually, communication in such situations must be accomplished by taking into account the three basic needs of any person: the need to be loved (which manifests through attention, affection, tenderness), the need to be useful (to be involved in daily life), the need to express one's emotions. When communicating with such persons it matters to understand the emotion more than the message. Emotion can be fear, joy, disgust; logical arguments have no value. One solution can be to adapt to the needs of the patient, to transmit to him that you are interested and that you try to understand his emotion, in a gentle way, centered on emotion. A reason for denial, agitation or an aggressive behavior can sometimes be pain which he cannot express verbally, but which is the cause of the behavior.

We can say that the patient with dementia lives in a "bubble", a bubble of time and feelings, which should not be removed because it can cause suffering. Therefore, contrary to the laws of logic, we must enter the world of the sick, the vector being emotions, feelings, tenderness. The communication channel, adapted to the elderly patient, must be adapted according to his personality model. Communication is important in any field, but in geriatrics it has therapeutic connotations. Communication is something that is learned actively through emotion and dedication as you care about the other person.

Therefore, the modern approach towards cognitive decline implies efficient methods regarding communication both for the diagnosis and for the treatment and caregiving. Since from the perspective of the current pharmaceutical treatment possibilities research has not come up lately with satisfying results, we can say that the development in the communication domain has practical perspectives in the future.

REFERENCES

Budson A.E., et al. *Practica Neurolo*, 2012; 12:88-96.

Delay, J., (1949), *Les trois memoires*,. s.l.: Presses Universitaires de France.

Foltein, M.F., S.E. Lolstein, McHugh, P.R., (1975), *Mini-mental state: A practical method for garding the mental state of patientsfor the clinician*, Journal of Psychiatry Research.

Fratiglioni, L., Launger, Lj., (2000), *Incidence of dementia and major subtypes in Europe: a collaborative study of population- based cohorts*, Neurology.

Geerlings, M.I., (2008), *History of depression, depressive symptoms, and medial temporal lobe atrophy and the risk of Alzheimer disease.*, Neurology.

Jedrziwski, M.K., Lee, V.M., Trojanowski, J.Q., (2005), *Lowering the risk of Alzheimer's disease: evidence- based practices emerge from new research*. Alzheimers Dement.

Rusu, V., (2001), *Dicționar medical*, Bucharest, Medical Publishing House.

Sunderland T., Hill J.L., Mellow A.M., Lawlor B.A., Gundersheimer J., Newhouse P.A., Grafman J.H., (1989), *Clock drawing in Alzheimer's disease. A novel measure of dementia severity*, J. Am Geriatr Soc.

Valenzuela, MJ, Sachdev, P., (2006), *Brain reserve and dementia: a systematic review*, Psychol Med.

Wimo A., (2004), *The magnitude of Dementia occurrence in the world.* Alzheimer's disease Associated Disorders.

World Alzheimer Report, (2015), *The Global Impact of Dementia*.

JANE AUSTEN'S ROMANTIC WORLD AS REFLECTED IN HER NOVELS

MEHMET ERTUG YAVUZ*

ertuyavuz37@gmail.com

ABSTRACT: *Jane Austen lived between 1775 and 1817, at a time when the political and the economic importance of the country gentry made itself felt throughout society. Hence, she focused on the life, manners, and values of this social segment. The landed country gentry provided her with various social types and a social context with middle class manners and mores. However, the social life in Jane Austen's England was not uniform and peaceful. Our paper explores some of the social limitations and restrictions faced by the heroines of Jane Austen's world, as well as the conflicts that her female heroines have with the established norms of their society and, therefore, and their search for freedom as well as their submission.*

KEYWORDS: *Jane Austen, comedy of manners, romantic world-view.*

Despite the seemingly romantic view of life that most readers see in Jane Austen's novels, they give an insight into less pleasant aspects of British life at the turn of the 18th century, if read closely. While the privileged gentry and the nobility prospered economically and owned large lands, the under-privileged lower classes, which mainly consisted of peasants and the jobless, were suffering from serious economic problems¹. The discrepancy between the under-privileged, the weak and the privileged caused political instability in the country. For instance: "..... the industrialists had been actively involved in a revolution of their own way."² Also with the repercussions of the French Revolution, an increasing awareness of the need for reform was felt. In this respect Wilks has pointed out that, Rebellion was in the air of England. Many were to champion the cause of the French Revolution while America found its sympathisers in the London of George III. Like France and America,

* Ph.D. Faculty of Letters and Sciences, Bozok University, Turkey.

¹ Copeland, Edward, *The Economic Realities of Jane Austen's Day*, London: Talsam, 1993, p. 68.

² Butler, Marilyn, *Jane Austen and the War of Ideas*, Oxford: Clarendon, 1990, p. 76.

England was ripe for rebellion, for in the time of Jane Austen it was a land of high contrasts and gross inequality in living standards and conditions, between the nobility and gentry on the one hand and the common people on the other.³

In this rebellious atmosphere Austen mostly dealt in her novels with the individuals and the societies in which they lived. The landed country gentry and especially the women characters constituted her main material for fiction. One may say that her fiction was mainly concerned with a depiction of women as liberal and self – confident characters in a social context with strict moral and social codes of behaviour.

Therefore, her fiction to a large extent, focuses on women characters rather than on the whole range of social types. This may be regarded as a limitation of her material. Yet, her insight into the status of women in her age and her concern with gender relations overcomes this limitation. In her fiction Jane Austen uses irony and ridicule to describe the social manners and behaviour of her characters, and her novels turn into a kind of comedy of manners.

Austen can be described as a realistic, moral and social critic. We may say that by using somewhat grotesque situations and temperamentally conflicting characters, Austen paints a full picture of the landed gentry and expects her readers to draw certain moral conclusions.

Her characters are fresh and lively. They reveal themselves, not only through the crises of life, but also through trivial everyday events such as walks, carriage rides, social evenings, morning calls, little unexpected visits and shopping. The height of excitement was a ball or a picnic. She has given the readers a variety of characters whose personalities are revealed through their context and dialogues.

Since Jane Austen herself came from a middle-class family, she wrote for and about her own class. She deals with relationships in that small social group and the relationships between particular individuals in that group. Marriages were between people who lived in such a society, and they provide the happy endings of her novels.

Most of the Jane Austen studies consist of: the changing moral values, conflicting characters, gender relations, and self-knowledge like one can easily find in Jane Austen's outstanding novels such as: *Sense and Sensibility*, *Pride and Prejudice*, and *Emma*. All these issues come under the general topics of the individual and society in Jane Austen. In Austen's

³³ Wiks, Brian, *Jane Austen*, London: Hamlyn, 1984, p. 10.

Sense and Sensibility the readers can look through a close study of the two conflicting temperaments represented by the two main female characters named as: Marianne and Elinor; in them Austen portrays two feminine types who are ruled by reason and emotion respectively. 'Prides' and 'prejudices', in her *Pride and Prejudice*, are some other Universal, classical subjects of Austen in which her depiction of the interrelationship between love, money and marriage is analysed. Thus, the relationship between the individual and society is emphasized. Jane Austen's other outstanding novel, *Emma*, is mainly concerned with difference, in class and moral values and the attainment of self - knowledge themes.

In all of Jane Austen's novels money is a recurrent and common theme. For most of her heroines, money is a basic criterion for choosing a husband as in *Pride and Prejudice*, written in 1813. Marriage was the most important concern of the period both for men and for women. Not only young men, but also young women wanted to marry a suitable person when the time came. Austen's introductory remarks in *Pride and Prejudice* stress the contemporary importance given to marriage:

It is a truth universally acknowledged that a single man in possession of a good fortune, must be in want of a wife. However little known the feelings or views of such a man may be on his first entering a neighbourhood, this truth is so well fixed in the minds of the surrounding families, that he is considered as the rightful property of some one or other of their daughters.⁴

This statement shows that for the families of the age the financial aspect of marriage was a priority. For a woman it was important to find a wealthy husband as it was the only way for financial security. Hence, for a young man prepared to marry wealth was as important as being handsome and morally perfect.

Therefore, the gender relations in terms of love and marriage were conditioned and motivated by reference to wealth. In most of Austen's novels 'money, class distinctions and social status' are the main issues in marriage. But, Austen as a pioneer feminist writer before and like Virginia Woolf dealt with all kinds of women matters like she did in her famous

⁴ Austen, *Pride and Prejudice*, 1987, p. 51.

fiction: *Pride and Prejudice* with reference to the social and moral significance of love, money and marriage in Jane Austen's nineteenth century British society.

In *Sense and Sensibility* which was originally entitled *Elinor and Marianne*, Austen deals with two sisters who are of different and conflicting disposition. The younger one whose name is Marianne regards love as an experience at first sight, with fervent emotions overtly expressed; she admires the grotesque and "picturesque" and is an epitome of sensibility which means Romanticism. In her image is reflected the free, and liberal woman. Elinor, on the other hand, who is rational rather than emotional and therefore has "sense", represents the traditional femininity with a motherly and a submissive attitude. Unlike Marianne she conforms to all the social norms and rules required of women in Austen's society. The contrast between the two has been pointed out by Nordin as follows:

Elinor's usual method of judgement is inductive. She gathers all the relevant facts at her command, however little they are to be of use... Point for point, Marianne's views on how to deal with society are very different from Elinor's. Where Elinor bases her dealings with her acquaintances in a desire to give everyone this due, however little she feels like giving it, Marianne is governed purely by impulse in her relations with society.⁵ (1973:128)

Both sisters in the novel are situated in an unfavourable social context. Following the unexpected death of the father, Mr. Dashwood, Elinor and Marianne are forced with their mother to live with a much reduced income, because the family estate is left to their half brother, John by their father's first marriage, who in fact by custom and law has the right of primogeniture. In fact, John has persuaded them to move from the Norland Estate to the family cottage on the estate of the cousin Sir John Middleton in Sussex.

Emma (1815) is the story of the rich, beautiful daughter of a country gentleman. Her father has willingly let her have her own way after the

⁵ Nordin, Jane, *Those Elegant Decorums: The Concept of Property in Jane Austen Novels*, New York: Arco, 1973, p. 128.

death of her mother when she was a child. The Woodhouses are at the top of the social group in their very limited neighbourhood which is Highbury. Emma Woodhouse, "handsome, clever, and rich" (1996:5), is given free rein as mistress of the house by her hypochondriac father. Although Emma has a high opinion of herself as an intelligent and experienced person, her experience is in fact extremely restricted. At the very beginning of the novel Emma is feeling all alone because her governess has just married Mr. Weston, who is a local gentleman. However, Emma soon makes friends with Harriet Smith who is a young woman from the local boarding school. She persuades her to refuse the marriage proposal of Robert Martin, a respectable farmer. Soon Emma decides on a match between Harriet and the local clergyman, Mr. Elton. But Mr. Elton's attention turns to Emma herself and not to Harriet. When Emma refuses him, he goes to Bath, and then he returns with a dominant woman as his wife. In Austen's novel, *Emma*, the readers observe the female heroine, Emma usually as a matchmaker. Jane Austen as a female author very well dealt with the women issues and throughout the novel Emma turns into a real lady from a matchmaking girl with her real, bitter life lectures, that is to say life experiences.

As a conclusion we may say, in the studies of Jane Austen's *Sense and Sensibility*, *Pride and Prejudice*, *Emma* and her other works it has been demonstrated that the characters face many social and moral limitations and restrictions. The female protagonists have conflicts with the established norms of their society and, therefore, struggle to accommodate their search for freedom together with their submission to the pressure of the milieu. They have to fight with the social and moral norms, and undergo serious tests and experiences in order to be strong morally, socially, and in terms of gender.

REFERENCES

- Austen, Jane, (1987), *Pride and Prejudice*, Harmondsworth: Penguin.
Austen, Jane, (1992), *Sense and Sensibility*, Ramsbridge: Wordsworth Editions.
Austen, Jane, (1996), *Emma*, Harmondsworth: Penguin.
Butler, Marilyn, (1990), *Jane Austen and the War of Ideas*, Oxford: Clarendon.
Copeland, Edward, (1993), *The Economic Realities of Jane Austen's Day*, London: Talsam.

Nordin, Jane, (1973), *Those Elegant Decorums: The Concept of Property in Jane Austen Novels*, New York: Arco.

Wilks, Brian, (1984), *Jane Austen*, London: Hamlyn.

IN THE SHADOW OF A GREAT CONCEPT

COSTEL CHITEȘ*

costelchites@yahoo.com

Motto:

*"A book, a piece of advice, given to a person at a certain time, they may alter that person's path through existence, far more than several years of being moulded in the classic education system may."¹
(Solomon Marcus)*

ABSTRACT: *Reading and analysing several of our late teacher's publications, the regretted academic and scholar Solomon Marcus, have implemented into our mind the noble idea of attempting to present mathematical notions from a historical perspective. We set out to present means and ways through which we may enrapture students into the study of mathematics, by highlighting tight though sometimes inconspicuous bonds that tie mathematics together with other sciences and related fields. This approach invites the reader to tackle new reading material that, in turn, will open up new horizons, new perspectives on other related fields.*

KEYWORDS: *education, history of science, interdisciplinary studies, transdisciplinary studies.*

A relatively new addition, the subject of the general history of science lays out a schematic of the ensemble of how different sciences have evolved, by highlighting the tight interdependence that exists between the evolution of these branches of human activity and aspects of the history of civilisations. Among these, mathematics is the regent queen of sciences, and "arithmetic is the queen of mathematics"². To support this statement, we would like to remind of the fact that the first axiomatised scientific field was that studied by the Greek mathematician Euclid, in the year 300

* Lecturer PhD. "Dimitrie Cantemir" Christian University, Bucharest.

¹ Solomon Marcus, *Education in performance*, Spandugino Publishing House Publishing House, Bucharest, 2010, p. 138.

² C.Fr. Gauss, *Arithmetic Research*, Translation by Constantin I. Guresures, Amacord Publishing House, Timișoara 1999, p. 9.

B.C., in his famous work titled "Elements"³. To the modern scientist knowing the merits of your predecessors and the filiation of great schools of scientific thought is a must. The history of science at once becomes a meaningful and vital subject to philosophy, by digging deep into the fields of: general history, political history, economics, and is, to put it simply, an important part of universal culture. By allowing the history of science into university and school syllabuses, many countries have taken measures that paid off by transferring knowledge from various other fields, as well as accelerating the rate of new discoveries. We could highlight personalities from scientific culture, the way in which they were educated and how they solved the hard problems of their day and age. By doing so we generate authentic models for our young pupils and students, as well as for the rest of us.

Today, mathematics directly influences theoretical physics, which in turn influences biology, medicine, psychology, economy, sociology, engineering science, technology, as well as countless other intermediary branches.

Our cultural matrix differentiates between people possessing relatively the same level of logical intelligence, technological knowledge, the same level of information. Feelings, beliefs, value judgements of what is right and what is wrong - this is what separates us. The human body is considered to be a measurable geometrical shape. Our psyche, however, is an invisible, immeasurable, infinite being. Our soul can be regarded as a numerical series made up of positive and negative values.

Here, we pause to mention a beautiful criterion belonging to mathematician Bernhard Riemann, given for semiconvergent series (in a semiconvergent series, by switching the order of its terms, the series either becomes convergent, having the sum of any real number initially chosen, or it becomes divergent).

I have to mention a nice criterion of the mathematician Bernhard Riemann, given for the semi-convergent series (in a semi-convergent series, by changing the order of its terms, the series becomes convergent, having the sum of any real number chosen initially or becomes divergent).

By choosing with the help of the "free will" what we think is good (positive) to achieve, we will end up adding positive values or subtracting them throughout our own existence. The final value "of the amount" will

³ Euclid, *Elements*, Vol. 1 ,2 ,3, Translated after the Greek text by J.L. Heiberg and annotated by Victor Marian, Historical Library of Mathematical Gazette, 1939, 1940,1941.

represent the human value that we have rendered in our own existence. It follows from here the difference between the learned man and the educated man. The teaching keeps man bound to the earth, and education elevates man's nature to Olympus. Moses and Lycurg supported education by divine commandments, by categorical imperatives, transforming their people. The moral force of man is highlighted by Moses and Licurg, each to their own.

The steps of young people, sometimes hesitantly, will become secure when we will succeed in achieving bridges to the pursued goal of education. It is our accomplishment, of the teachers, to open up new cultural horizons that will ensure happiness and peace, good understanding, both with ourselves and with other fellows. It is not a utopia to believe that the sixth sense is provided by the Book. We are convinced that the path of humanity is the one provided by more light. This creates the possibility of structurally changing the unknown (the shadows), for the better (in the light). There are so many people who are unhappy just because they don't know that there is a cure for their evil. "Every being has its place in the universal order: every being has within it an element of perfection; it follows that evil is only a relative thing, because the universal harmony is not disturbed by any disagreement, any eventual dissonance being covered by the overall harmony".⁴

The transition from darkness to light is not achieved instantly, but it requires patience, perseverance on the part of those involved in the educational act. It is an additional reason to offer openings to deeper meanings of the field we profess.

Important steps in the popularization of science, in the formation of the first knowledge about the past, in order to highlight its charm to the children and teenagers, the binder with other fields of culture, were taken throughout the 20th century and at the beginning of the 21st century. We remember with respect and pleasure Jeanne Bendick (1919-2014), a graduate of Parson Scool of Design. Jeanne becomes one of the most renowned American illustrators and authors of children's books, with over 100 titles published, especially in the field of science popularization. We note the talent and grace by which the American author translates complex concepts of science, into a language accessible to children, his texts becoming interesting and easy to understand. It is a great example

⁴ Jean Mallinger, *Pythagoras and the Mysteries of Antiquity*, Herald Publishing House, Bucharest, 2013, p. 142.

for educators to continuously study, to enrich their knowledge permanently, to perfect the techniques by which they can transmit clearer and deeper pieces of culture.

The author of these lines has set out to provide support, first and foremost to parents, by developing mathematical works aimed at the training of children and teenagers. In the work "Didactics of science in preschool education" (2018), Pro Universitaria Publishing House, topics from the syllabus are addressed, through an approach that unifies science with art, philosophy with the educational aspects of the human being related to Truth, Law and Beauty.

The paper highlights the need for content of the curriculum as well as their importance in the perspective of children education. The themes and problems exposed can be realized both in the institutionalized frame and at home. Thus, closer cooperation between educational factors was envisaged. In chapter 6, 92 teaching activities are presented in the form of remarks, cultural contents that are intended to be expanded by readers. The first figures being introduced to kindergarten children proved to be beneficial the accomplishment of chapter 7, entitled "Short history of numbers". Then, in Chapter 8, the first Hindu-Arabic figures and their meanings made by the ancient peoples were presented. In order to make Socratic teaching games, the author presented such models in Chapter 9. We all know the abundance of questions that little ones ask us to satisfy their own desires for knowledge. It is thus a new invitation for adults to get informed, to answer as accurately as possible the most difficult questions they receive. In chapter 11, entitled "Let's have fun", are selected some of the funny situations experienced by great cultural people in their lives. Their role is to familiarize children with names, places and events from the past. With scientific results generated by them, children will meet in school or college. Taking into account the increasing need for mathematics in solving computer problems, the knowledge of some techniques for solving combinatorial problems, the author of these lines published a book entitled "Elements of didactics of mathematics presented from a cultural perspective in primary education", (2018), *Univers Academic Publishing House*.

This paper concerns the personal activity of the students in acquiring knowledge and methods.

It is a scientific guide for the mentor (teacher / parent) for selecting and proposing problems both in the lessons at school and for the independent work of the students at home. Through proposed problems

or themes, the limits of imagination extend. By extending the limits of reason we can embrace the universe as a whole, being able to discern the deepest mysteries. Truth and knowledge are not acquired at once, their conquest requires a long series of efforts, observations and in-depth study, ranging from simple to complex, from dark to light. In this respect, we will highlight the importance of the mathematical notions necessary for the formation of the young student, in order to tackle important topics to be encountered in the coming years. It is a justification for current school programs. Being a rich book in information addressed to future teachers, we expanded the theoretical aspects.

The work is about:

- a) taste development for further research;
- b) the opportunity to respond promptly and correctly to the students' numerous questions;
- c) framing some problems in more general methods of approaching them;
- d) the rate we live in today reduces to a worrying extent the periods of optimal fertility.
- e) the flexibility to change the programs in the near or distant future;
- f) preparation of the didactic exams.

Scientific knowledge, proving useful, essential, fascinating, has become an inevitable part of our lives.

"Although many of us are afraid of the death of the body, and we would do anything to prevent such a thing from happening, however, the fact that the soul could die does not concern us at all."⁵ The one who does not progress is in a pitiful situation.

Scientific discoveries and their knowledge are far too interesting to be left solely to the scientists, that is why it is necessary for us to inform and / or study during the whole life. Understanding scientific evolution offers a new perspective that blurs the physical and cultural differences between people. "All science is nothing but a sublimation of everyday thinking." (A. Einstein). Due to its own symbolism and reasoning, the idea that mathematics has the power to induce obsessions, but rarely affection, is widespread. It is the role of the teacher / mentor to bring to their students

⁵ Epictet, *The Discourses, Diatribe. Book 1*. Seneca Publishing House. Chap. 5. 2018, p. 29.

the power to see for the first time an old, familiar place, in new parameters.

A mathematical notion takes shape, makes more sense and can then be used by students if:

- the interest is developed for solving some types of problems (purely mathematical or in relation to other disciplines). The knowledge of the discoverers, shows us their attitude, personality, ideas and their will, they represent models for the young ones, models that the present society, in general, has forgotten. The great scientists have made history and science simultaneously, because these two disciplines are closely linked, together with the economic, political, military and religious factors that give coherence to civilization. The great geniuses, whose contribution develops the theoretical and practical knowledge of man through great leaps, and not through small steps, understand the importance of the predecessors and always carefully study their contribution.

In order to translate complex concepts into everyday language and to present difficult topics in an interesting, easily understandable way, one can consult the works of the famous illustrator and author Jeanne Bendick.⁶

- the logical construction of the solutions is interrogated, starting from direct, known notions. By analyzing more experiences, generalizations are sought, and inductive thinking is developed. Thus we propose Socratic learning to the detriment of the writer. As a model of virtue, Socrates did not wish to introduce external knowledge into the mind of his disciple.

He tries to discover knowledge that is latent in his disciple's mind and soul. He is a discoverer of the art of creating and forming souls. The difference between modern learning, as a technological process, which manufactures and produces people and the learning through discovery, in the human relation the disciple (teacher) is thus highlighted, to the advantage of the latter. The sacred ritual between the mentor and the disciple reveals the mystery and truth of immortality: the sacred world of ideas. Man ascends into the world of ideas and becomes immortal through teaching and education. Socrates discovered that man's soul and mind are of a higher spiritual nature. The ideas are in the mind and soul of the child since birth, the teacher having the role of helping him, through well-posed questions, so that he can remember them. Socratic learning is a process of

⁶ Jeanne Bendick, *Herodotus and the beginnings of the history*, Humanitas Junior publishing House, 2018.

anamnesis. The knowledge of the good, the beautiful and the truth is the high goal that we tend to model children, to educate their soul.

Every human being should aim for a higher sphere, for a higher existence. The motive of homo cogitans, the thoughtful, rational man, thirsty for finding meaning, reason, or the Supreme Reason, is the opposite of the one in non-work, unconcerned with knowledge.

- new acquisitions are used effectively in various situations, sometimes presented in Socratic spirit. In this way, our disciples will be encouraged to push forward in discovering new truths. The creative process looks for intellectual and emotional fields that have not yet been explored, which is why we can make small incursions into the abstraction of mathematics

But for mentors, the special efforts in their own spiritual formation as well as in transmitting the teaching to the disciples, how can we positively argue it?

Among many enlightened minds who have positively argued for the necessity of these efforts, we will quote the philosopher Moses Mendelssohn. "Without the fulfillment of our obligations we have no expectation of happiness neither here nor beyond, neither on earth nor in heaven. However, the real fulfillment of our duties requires two types of reporting: action and conviction. The action produces what the debt claims, and the conviction causes it to come from a true source, in other words, for authentic reasons."⁷ This sacrifice, which comes from our own free will, is a manifestation of our own strength. The society must support both: towards action - motivated by advancement, towards conviction - motivated by truth.

The selected problems are completely solved, using methodical remarks and offering new, extended perspectives of the notions related to:

a) other discipline.

b) the path taken by some mathematical notions in the development of history.

c) the development of mathematical skills in the perspective of their use in current and logical reasoning of computer programming, of algorithmic type. Considering the attending of many students in mathematics and computer competitions, in which the school curricula are extended, we presented additional topics: the construction of sets of

⁷ Moses Mendelssohn, *Jerusalem: or on Religious Power and Judaism*, Hasefer Publishing House, 2003, pp. 25-26.

numbers, powers of natural numbers, bases of numeration, problems of combinatorics, logic, binary relations etc.

d) highlighting, sometimes subtle, the aspects of philosophy of education, sprinkled from place to place in the form of remarks. Thus we consider that the development of some qualities of the students or even the attempt to transfer some of these qualities (which germinated or were latent) can be achieved through the examples offered by the history of culture.

Man finds in himself resources regarding all human aspirations and energy, however diverse they may be. Through experiencing he discovers the different levels to which these dispositions are found in his individuality. It is our duty to provide these experiences to the disciples. Inspired by an ideal, each person's life becomes full of "clarity."

e) the developing of taste for beauty, harmony, for knowing the truth through the positive use of the Internet. The harmony of the Universe and the harmony of Man are born by mirroring the harmony between Man and the Universe. The good will essentially makes us happier than our personal interest. Being aware of the development of mathematics over the centuries is an extraordinary exercise of self-awareness.

f) opening the appetite for asking new questions (sometimes answering them alone), for first self research. That is how students' personal reflection and critical spirit develop. In this sense, we should have, like Socrates, the art of asking questions. Socrates made people feel important when he asked them questions and gave them the feeling that the answers offered were meaningful to him. Then, the scientists concluded that, most of the times, the questions are more important than the answers. Broad answers form theories, and new evidence can modify them, so that science becomes an endless search for truth. This breaks down the problem into smaller problems, and then, through well-chosen questions, the correct answers from the disciples are discovered.

In order to achieve something good in life, every man must know what he wants and know what he can. Paul Valery, talking about Leonardo, burdened us with the task of being human, saying that "the man who has never tried to be like the gods is not a complete man."

g) opening the appetite for the game. Later activities will be called the game of research, of the learner, who will have the freedom to act. The playful component of learning, research and invention should not be forgotten. Being like children, it becomes an imperative, which being respected, gives birth to a purifying ethic, induces germs for the

reconstruction of the human in us in a new life whose energie comes directly from the sacred horizon.

h) opening the taste for research.

In this sense we will quote Pierre de Fermat: "Indeed, for science it is a certain interest not to lack posterity of works with still immature spirit; the work, at first simple and crude, strengthens and grows with new discoveries. It is really important for the study to be able to fully contemplate the hidden progress of the spirit and the spontaneous development of the art".⁸

i) mitigating the inhibition of making mistakes. "The error arises from the imperfection of our organs and their contrived analogies."⁹ The French mathematician Évariste Galois (1811-1832) stated: "In vain do mathematicians want to hide: they do not prove but combine and compare, and only succeeding from one side to the other, they come to the truth."¹⁰

Through the generous content of carefully selected problems, solved together with implicit methodical aspects, the paper is addressed to the teachers in the current preparation, of the final exam, grade 2, grade 1, as well as the degree competitions.

The work is addressed to the parents in the perspective of their approach to the current issues of primary education, to support their children in their ascension in the field of mathematics, through the perspective of knowing the history of mathematics. It is an invitation to further reading that is beneficial to the spirit of all.

In cultural personalities we often notice the convergence to the same values. There is an example. The mathematician (and poet) Dan Barbilian (Ion Barbu)¹¹ states that what makes a difference between a mathematician and a non-mathematician is that the first of one, at each step taken in a calculation, knows what theorem applies.

300 years before him, referring to the proportional numbers 2, 4, 3, 6 and to the discovery of the fourth proportional by merchants, B. Spinoza states: "However, they do not notice correctly the proportionality of the

⁸ René Taton, *General History of Science, Vol. II*, Scientific Publishing House, Bucharest, 1971, pp. 231-232.

⁹ M. Eminescu, *Fragmentarium*, Scientific and Encyclopedic Publishing House, Bucharest, 1981, p. 293.

¹⁰ André Dalmas, *Évariste Galois*, Scientific Publishing House, 1962.

¹¹ Dan Barbilian, *Axiomatic Algebra*, Bucharest, Didactic and Pedagogical Publishing House, 1988, (under the care of Horia Pop).

given numbers, and even if they notice it, they do not do it on the basis of the quoted theorem, but intuitively without any calculation".¹² Looking at a familiar old place through the eyes of a mathematician, one can gain the strength of seeing it for the first time.¹³

We can imagine the steps, which the children encounter, in their transition from a lower cycle to a higher one. Through the care and talent of mentors (parents and teachers), we can mitigate these barriers.

That is why I have made first didactic activities for the preparatory year that are close related to the preparation of the previous cycle. A competent teacher is continuously anchored to the issues that are accomplished in the upper cycle. A pre-school education teacher, knows very well the requirements of primary education, etc., a high school teacher knows very well the syllabus of the first two years of the specific faculties. In the didactic exams, the curriculum also has contents from the upper cycle, which supports the principle stated above. Curriculum for school competitions often resort to deepening, extension, precisely to develop skills of students with high potential. We mention a pedagogical principle: "in order to teach, the subject must be very well-known by the mentor, at least 10 times more than the disciple". The intellectual challenges between the mentor and the disciple can generate new studies, new researches which leads to a quality teaching act. We mention another pedagogical principle often highlighted by cultural personalities. The blurring of some students' innate abilities by the (sometimes inflexible) education system of all grades, can harm their evolution. We remind that the development of the research is carried out exponentially, and the development of the education is linear. The brave, intelligent and knowledgeable teachers can skip some intermediate steps, which the disciples have gone through, in order to bring them closer to their expectations and the didactic act. That is why the continuous training of mentors is beneficial. On the one hand, for the mentor, the in-depth study creates its own spiritual joy, and on the other hand, it represents a safety in the current activity. Let's not forget the mirror in which we must look every day as long as we live. The true mentor studies every day his own reflection in the mirror (as the Pythagoreans did, for example). Last but not

¹² B. Spinoza, *Treatise on the Emendation of the Intellect*, Antet XX Press Publishing House, 2005, p. 24.

¹³ David Berlinski, *One, two, three*, Bucharest, Humanitas Publishing House, 2013, p. 13.

least, we would like it to be a "library work" for students, in which they will make inroads to solve problems, motivate them in generating new questions, small mathematical research. The opening of these "gates" of knowledge will be beneficial in other disciplines that they will study: computer science, physics, chemistry, biology, history, geography, logic, philosophy and arts.

We know that all our mathematicians have made their apprenticeship in the pages of the "Mathematical Gazette". We remind that the "Mathematical Gazette" has appeared without any interruption since 1895. Its founders (Ion Ionescu, Țițăica Gheorghe, Ioachimescu Andrei, Cristescu Vasile) realized the need of publishing of a mathematics magazine, aimed at students, teachers, lovers of mathematics, to improve the mathematical level of the students. We warmly recommend to all participants in the mathematical act training the students to solve the problems proposed in this prestigious magazine.

The work is intended to be a modest tribute to the late academician, Nicolae Victor Teodorescu (1908-2000). With talent and passion, professor Teodorescu run the "Mathematical Gazette" for two and a half decades. He introduced the heading for primary education, which led to raising the mathematical level of young people, to a wide spread in schools of the value issue. Many mathematics books dedicated to the little ones have been inspired by this "treasure" that comes out monthly in G.M., since the 1980s.

A third work done by the author of these lines, is addressed to the students of the 5th grade, their parents and the teachers from the secondary school. It is published in the Didactic and Pedagogical Publishing House, (2019), entitled: "Cultural perspectives generated by mathematics", being modestly dedicated to the late academic Solomon Marcus.

Following the new mathematics curriculum, the paper often highlights the place in the history of mathematics of the emergence of the mathematical notions treated. The respect for the cultural values of the past is developed, the own desire for research is developed through the use of new sources (books, magazines, treatises, dictionaries, etc.), first connections between sciences are made, without neglecting art.

Taking into account the increasing need for mathematics in solving computer problems, the knowledge of some techniques for solving combinatorial problems, the author of these lines will publish a paper

entitled "Elements of didactics of mathematics presented from a cultural perspective in primary education".

We would like to continue on the path already outlined, to support the study of mathematics for the students in secondary school, high school and college.

Conclusions

- Mathematics is ubiquitous and powerful in describing the Universe.

- The applied mathematics brings clarifications not only in the physical sciences; all sciences now extract from it an important part of their foundations: economics, sociology, biology, psychology, not to mention the arts, literature, in which numerical mathematics appears as a stimulator of creative power.

- It is necessary to call on the history of culture. "Models worth following are a rarity. The tendency is to look in the past rather than in the present, in the distant past rather than in the near future" (Solomon Marcus, *Universal Paradigms*, p. 13).

- The spiritual joy generated by value readings blurs the repetitive character of the didactic approach.

REFERENCES

Albu C. Adrian, (2009), *A History of Mathematics, Antiquity to the Sixth Century (XIII)*, Pitesti, Nomina Publishing House.

Aristotle, (2010), *Metaphysics*, Bucharest, Universe Enciclopedic Gold Publishing House.

Barrow, John D., (2012), *The book of infinity, A brief introduction to the infinite, eternal and endless*, Bucharest, Humanitas Publishing House.

Benedick, Jeanne, (2018), *Galen and the Beginnings of Medicine*, Humanitas Junior Publishing House.

Benedick, Jeanne, (2018), *Herodotus and the Beginnings of History*, Humanitas Junior Publishing House.

Broșteanu, M., Băltăceanu F., (2013), *The most beautiful stories in the Bible*, Bucharest, Humanitas Publishing House.

Câmpan, T. Florica, (1985), *Stories with proportions and symmetries*, Bucharest, Albatros Publishing House.

Câmpan, T. Florica, (1972), *The second book with famous problems*, Bucharest, Albatros Publishing House.

Ciho, Miron, (2000), *Civilization of Greco-Roman Egypt*. Plutarch, "About Isis and Osiris", Publishing house of the University of Bucharest.

Chiteș, C.D., (2015), *Mathematics course for primary and pre-school education*, Bucharest, Pro Universitaria Publishing House.

Chiteș, Costel; Chiteș, Daniela; Heuberger, Daniela; Mușuroia, Nicolae, (2012), *Mathematics. Additional topics for 5th grade*, Bucharest, Corint Publishing House.

Courant, R.; Robbins H., (1969), *What is mathematics?* Bucharest, Scientific Publishing House.

Dăncilă, E.; Dăncilă, I., (2011), *Fun math, grades I-IV*, Iași, Gama Publishing House.

Delucchi, E.; Gaiffi, G.; Pernazza, L., (2012), *Giochi e percorsi matematici*, Italia, Springer-Verlag Publishing House.

Descartes, René, *Exposure on the method*, Paideia Publishing House, translation from Latin and lexical notes by Dan Negrescu.

Dörrie, Heinrich, *100 great Problems of Elementary Mathematics*, (1965), New York, Dover Publications, Inc.

Durant, W., (2002), *Life in Ancient Greece*, (3 vol.), Bucharest, The Book Friends Publishing House.

Eberet, J., colectiv, *Illustrated Chronicle of Humanity* (16 vol.), Wissen media Verlag GmbH, Güterloh / München, Germany, 2008, Greece and Classical Antiquity, vol. 2, (2011), Litera Publishing House.

Epictetus, (2015), *The Manual*, Bucharest, Seneca Lucius Annaeus Publishing House, (Introduction by Andrei Pleșu).

Gauss, C. Fr., (1999), *Arithmetic Research (Disquisitiones Arithmeticae, 1801, Leipzig)*, Timișoara, Amarcord Publishing House.

Ghyka, C. Matila, (1981), *Aesthetics and Art Theory*, Bucharest, The Scientific and Encyclopedic Publishing House.

Hermann, Dietmar, (2014), *Die antike Mathematik*, Springer Spektrum Publishing House.

Mallinger, Jean, (2013), *Pythagoras and the Mysteries of Antiquity*, Bucharest, Herald Publishing House.

Marcus, Solomon, (2011), *Universal Paradigms*, Pitești, Paralela 45 Publishing House.

Mario, Livio, (2011), *Is God a mathematician?* Bucharest, Humanitas Publishing House.

Odifreddi, Piergiorgio, (2015), *Il museo dei numeri, Da zero verso l'infinito, storie dal mondo della matematica*, Rizzoli, RCS Libri S.p.A, Milano.

- Petit, Guide, (2014), *Le nombre d'or*, © AEDIS éditions 03200 VICHY.
- Petit, Guide, (2013), *La magie des nombres*, © AEDIS éditions 03200 VICHY.
- Phillips, Charles, (2011), *50 tests to think logically*, Flacăra Publishing House.
- Phillips, Charles, (2010), *50 tests to think creatively*, Flacăra Publishing House.
- Pohoată, Gabriela, (2012), *Metaphysics and Science in Leibniz's work*; Bucharest, Pro Universitaria Publishing House.
- Roman, Carol, (1982), *Is there a secret of celebrity?* (Nobel laureates reply), Bucharest, Political Publishing House.
- Rusu, Eugen, (1961), *Arithmetic and number theory, 2 Vol.*, Bucharest, Technical Publishing House.
- Sacaliș-Clata, Nicolae, (2012), *Philosophy and pedagogy of culture from Homer to Plato and Zamolxe*, Bucharest, Pro Universitaria Publishing House.
- Schuré Eduard, (1994), *The Great Insiders*, Bucharest, Lotus Publishing House.
- Seife, Charles, (2010), *Zero: Biography of a dangerous idea*, Humanitas Publishing House.
- Singh, S., (2000), *Fermat's great theorem. The story of an enigma that has annoyed the world's most enlightened minds for years*. Humanitas Publishing House.
- Stewart, Ian, (2011), *Infinity Taming, The Story of Mathematics*, Bucharest, Humanitas Publishing House.
- Ștefănescu, Mirela, (2008), *15 lessons on the history of mathematics*, Matrix Bucharest, Rom Publishing House.
- René, Taton, (1970), *General History of Science, 4 Volumes*.
- Vorobiev, N., (1973), *Caractères de divisibilité, suite de Fibonacci*, Initiations aux mathématiques, Editions de Moscou.
- Wynn, Westcott, (2013), *The numbers and their hidden power*, Bucharest, Herald Publishing House.