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FORMATION AND DEVELOPMENT OF THE PROFESSIONAL THINKING IN FUTURE GRAPHIC DESIGNERS WITH THE USE OF TIPS/TRIZ METHODS

Purpose: *the present article is highlighting the experience of the Theory of Inventive Problems Solving use for the formation and development of professional thinking in students studying graphic design at the "Ion Creanga" State Pedagogical University of Chisinau.*

Methodology. *The research used the methods of contradictions solving TIPS/TRIZ, as well as the semiotic, hermeneutic, systemic, structural, morphological and interdisciplinary approaches. The authors also used the the Theory of critical thinking (Ch. Temple, D. Steel, K. Meredith) and the Project method.*

Results. *The article describes the experience and results of the implementation of the curriculum "Fundamentals of artistic literacy using TRIZ methods" for students of graphic design. The methods of teaching the basics of artistic literacy through the prism of TRIZ methods are analyzed and systematized, stimulating the development of critical and creative thinking of future graphic designers. The application of TRIZ methods had a positive impact on the process of formation and development of students' professional artistic thinking.*

Scientific novelty. *The scientific novelty consists in the fact that the authors used the TRIZ methods structure for the study and understanding of the modern visual language for the creation of design objects, and afterwards for the formation and development of the professional artistic thinking of the graphic design students.*

Practical significance. *The practical significance of the research consists in the elaboration of the author course "The Fundamentals of the Artistic Literacy with the Use of TRIZ Methods" for the graphic design students from the "Ion Creanga" State Pedagogical University of Chisinau.*

Keywords: *professional thinking; graphic design; artistic thinking; critical thinking; development of artistic thinking; the theory of inventive problems solving (TRIZ/TIPS).*

Introduction. The changes that take place in all the areas of the modern society, urge for the changes of the educational system. Obviously, changes are necessary in the area of graphic designers training as well. M. Meyer & D. Norman emphasize that "today the world faces new challenges. Designers are starting to play a larger and larger role in not only designing but managing beyond the design studio and even deciding upon the activities that need to be done across the business. Our concern is that design education has not kept up with the new demands of the 21st century..." [1].

For the successful functioning in the rigid modern world, the graphic designer must possess a broad outlook; be able to decode

visual information, to navigate into its huge flow; know the possibilities and features of the modern artistic language; possess the newest actual methods of artistic expressiveness; quickly and consciously generate new ideas and successfully visualize them; timely react to the changes and adapt to them; regularly acquire new professional knowledge and technical abilities; create and support conditions for continuous self-education; successfully communicate with the design customers, publishers, private clients. The development of these abilities conditions the need in the developing professional thinking, high level of cultural and intellectual competence in future graphic designers.

The research carried-out earlier by the authors [2], showed that the use of TRIZ methods classification for the conscious perception of the modern fine arts allowed improving students' knowledge in the area of modern fine arts, working more effectively on new representations ideas. As a result, it was decided to study the possibilities of using the gathered material on using TRIZ methods [3] for formation and development of future graphic designers professional thinking.

Analysis of previous research. The graphic designer professional thinking is the object of multiple research. In the present research the authors of the article do not intend to highlight all the aspects of the formation and development of the future graphic designers thinking, but only the issues connected to how the information structured with the help of the TRIZ methods can contribute to the formation and development of their thinking. Modern researchers agree to the idea that the new education must teach to think categorically, to develop the ability to classify and evaluate the information, to think critically. Thus, Scott L. Karakas, Professor of Art History, in his overview article "Creative and Critical Thinking in the Arts and Sciences", underlines the inter-complementary role of the art and critical thinking, stresses out the necessity to

- be well-informed;
- organize thoughts and articulates them concisely and coherently;
- see similarities and analogies that are not superficially apparent;
- learn independently and to have an abiding interest in doing so" [4].

Meanwhile, professor Rita Almendra, in her article devoted to critical thinking in design notes that "the problem is that it is hard for the students to capture the way information can be selected, interpreted and used in a way that it really contributes to expand knowledge in this domain area" [5].

Perhaps, it happens because as far as exact sciences have a harmonious classification,

single terminology, the process of artistic creation formation is insufficiently structured. The diversity of colours of the visual material bring to the fact that the clarity, the exactness in the definition of the used methods and techniques are achieved only with great hardship. Generally, the researchers analysing the issues of methods description, do not study their classification. For a clearer, more structured analysis of different creative approaches in modern visual culture and their systematic description, the use of TRIZ creative methods classification was attempted.

It needs to be mentioned that authors' reference to TRIZ is not incidental. The use of TRIZ in non-technical areas in the Republic of Moldova has deep roots. In the year 2000, in Detroit (USA), a group of authors (Zlotin B. et all) published an article. The authors of the article are the initiators of TRIZ school in Chisinau, developed in the 70s, 80s of the 20th century. In this article it is stated that "research was conducted by several TRIZ specialists in various areas of art and performance, including: music, art and sculpture, cartoons, poetry. Extensive research was also conducted in the area of human interaction with pieces of art based on an approach similar to substance-field analysis by Juliy and Ingrid Murashkovski (who for many years taught TRIZ creativity methods to professional artists and architects). Their work included numerous illustrations, algorithms, case studies and other educational material" [6].

One of the researchers of the use of TRIZ in the non-technical areas, Moldovan art expert, artist and professor Roman Florescu studies the art of creators-innovators, analyses the technologies of art inventions from the position of TRIZ, possibilities of adaptation of technical systems development laws in the field of art, systematization of artistic effects in art, researches the problem of the artistic abilities development in children and students with the use of TRIZ science elements, creates experimental works of visual-volumetric art, discovers ways of using TRIZ methods for images creation.

Nowadays, the use of TRIZ for the development of the creative thinking is studied by the researchers from different countries. Thus, the researchers from Italy Sergio Agnolia и Giovanni E. Corazza study the way of connecting TRIZ ideas with the created model DIMAI, which absorbed all the progressive ideas on the creative thinking development. They underline that "Mumford et al. thoroughly described the importance of information search and encoding, demonstrating how the differential use of information and the differential gathering of information lead to completely different problem solutions (in terms of both originality and quality) ... many TRIZ tools have precisely the purpose of introducing divergent information into the inventive problem solving process". Meanwhile they emphasize that "40 principles of Inventive Thinking, one of the most powerful tools introduced by Altshuller" [7]. The researchers from Singapore Kah-Hin Chai, Jun Zhang, Kay-Chuan Tan confirm that "the viability of applying the theory of inventive problem solving (TRIZ) to services by proposing a new approach to new service design" [8]. The authors of this article underline that "the novelty and the quality of new service ideas are severely affected. This is due partly to psychological inertia in human thinking, which focuses the mind on only what is known, and avoiding unknown paths" and consider that "TRIZ can help to eliminate the psychological inertia in the minds of service designers, thus enhancing the capacity of service idea generation in service design". In their research they bring numerous examples of how many of the 40 TRIZ methods can be used in design. They also state that a part of the methods cannot be adapted to non-technical systems.

Problem statement. The problem of the research is to study the possibility of using TRIZ methods for the formation and development of future graphic designers professional thinking. In order to achieve this, the course programme "The Fundamentals of Artistic Literacy with the Use of TRIZ Methods" will be elaborated. It allows to classify and systematize different

approaches, methods, techniques and ideas used in modern visual culture. Based on the theoretical material, a system of exercises/tasks deepening the understanding of the given methods and develop future graphic designers professional artistic thinking will be created.

The results of the research and their discussion. Based on the research described earlier [2], the authors of the article developed the programme of the course "The Fundamentals of Artistic Literacy with the Use of TRIZ Methods" for the graphic design students from "Ion Creanga" State Pedagogical University of Chisinau (the Department of Art History, Graphics and Methods of Teaching). The course includes the programme, materials and diagnostic tools, either for encountering with the fundamentals of arts literacy, or for the formation and development of professional artistic thinking of future graphic designers. The course presupposes theoretical and practical activities.

The lectures are held by the authors of the article with the use of multimedia means, which allows attracting various illustrative material.

While forming the lessons structures, the methodological approach from the Critical thinking development technologies, elaborated in the end of the 80s of the 20th century in the USA (Ch. Temple, D. Steel, K. Meredith) [9].

On the first level, the students are suggested to analyse and interpret images on the new topic. This stage (the stage of the Challenge from the Critical thinking development technologies) allows to update and generalize the existing knowledge; to build interest for new knowledge; to encourage students to active work during classes.

As it follows, the programme envisages announcing to students the theoretical information on the fundamentals of artistic literacy, highlighted with regards to TRIZ methods. The authors prepared presentations for each TRIZ method with the variants and functions of their use. The theoretical material contains "references either to modern images

or to images from the past, so that the students could realise the diachronic and synchronic changes of the phenomena" [7].

In the presentations are provided ideas, theories, multilateral interpretations and conceptual approaches of art critics, philosophers, culture experts, psychologists, art experts and other researchers, which allow connecting a range of artistic works with extremely difficult conceptions of the modern world. The theoretical material facilitates the transition from the shallow-naturalistic perception of the artistic works to the disclosure of the deep hidden meanings, eluding from the untrained spectator.

The tasks of this stage are: formation of the professional interest; getting encountered with the terminology and the fundamental aspects of the theory of visual arts; getting encountered with the main plastic instruments and the principles of the composition of visual arts; study of the fundamentals of the objective structure of the subject, ways of rendering information with the help of the visual language; the disclosure of the meaning and content of the spectator's attention management methods, generalisation, methods of creating a unique picture, building a compositional centre, methods of creating the space in the artistic work; forming the impression about the artistic conditionality, as an indispensable part of the artistic work, about the admissibility of the distortions in the images; getting encountered with the fundamentals of the psychology of the perception, necessary for a deeper and more objective interpretation of the images.

In Facebook, the authors created a closed educational group, where there are presented the recordings of the video lessons, the collections of the images on every TRIZ method. The members of the group have the opportunity to review the video lessons on the topics, in order to consolidate the material, actively participate in the analysis of the images, texts and video materials, developing the ability to interact and the professional-communicative competence. They take part

into the adding up to the images collection as well.

As an example, we suggest fragments of the study materials for one TRIZ method – the Principle of Partial or Satiated Action, which in TRIZ is formulated as follows: "If it is difficult to obtain 100 percent of desired effect, one must go for "a modicum less" a "modicum more" – and the problem may thereby be considerably simplified" [3]. The closest to the given method are the tropes Hyperbole and Litotes, used in literature, which consist in excessive exaggeration and belittling of certain qualities or quantities of an object's features, phenomena or processes. The use of this TRIZ method in creating images allows to attract spectator's attention, to put the maximum accent on the necessary feature, clearly and exactly bring the message, point the important element in the image, create effective images and memorable metaphors.

There are various types of hyperboles in images: exaggerating size, functional characteristics, importance of the object etc. A successfully found exaggeration is a very strong artistic technique, allowing to emphasize certain features of the object. Understating the size is used more rarely, it can be used, for example in order to show the accessibility of the object, its compactness, small size (in some cases these are the most important features for the quality consumer). The images created with the help of this method are extremely actual and popular nowadays, considering that the modern space is supersaturated with images, and namely visual information rendering brightly, exactly and quickly the message works more effectively. The redundancy, the excessive brightness and clarity become an important part of the modern visual culture. This method has been used by the artists since early times (Fig. 1).

As Rossi writes in his book "Architecture and mathematics in Ancient Egypt", "Another important feature of ancient Egyptian representations, which is common to all subjects, is the expression of importance by means of size: the more important, a person or

an object is, the bigger it is in the scene. In the case of people, social hierarchy could be expressed by means of dimensional hierarchy Human beings are, more or less, similar in terms of dimensions, which means that their size in the representations depended simply on their social status (the difference in size visualised very well the power of the 'bigger', i.e. the 'stronger' over the 'smaller', i.e. the 'weaker')" [10].

As it follows, examples of Principle of Partial or Satiated Action by the modern illustrators and designers are presented.

The theoretical part of the course is preparing the students for the independent creative work. The second part of the course is presented as thematic seminars, whose tasks are: consolidation and comprehension of the studied material, the transition from the passive perception of the material to be active, the development of a productive imagination, activation of the independent artistic thinking, integration of new knowledge in a single system, forming the abilities of self-study and self-improvement. The class seminars are various and include interactive communication in class, business games, debates, assistance in doing practical work. One of the tasks is the description and structural analysis of the images. For the detailed analysis, the authors elaborated a structured "Plan-scheme of the images analysis", involving different aspects of the understanding (compositional, technological, intonation, semantic, philosophical). One of the questions of the analysis is connected with the definition of TRIZ methods, used by the image author and the tasks realized with the help of the given TRIZ method. The purpose of this task is the active involvement of the students in the process of images analysis, formation of artistic perception culture, mastering the plastic arts "language", development of visual thinking. The students learn to exactly and intelligently formulate statements, stand their ground, holistically analyse the image, consecutively considering its different aspects, being receptive to the author's ideas and feelings, as well as an attentive attitude towards their own reaction.

Extra-class individual work is organised by the authors using Google Classroom – a web-service which aims at simplifying the development, distribution and assessment of the tasks, effectively interact with the students. Carrying out the practical tasks, the student communicates with the professor, if necessary, clarify the essence of the formulated tasks, query their solutions. After the tasks are handed-in, they are discussed with the teacher, subsequently, the student makes the necessary additions and corrections.

In order to consolidate the acquired knowledge, to generalize the information, to build own attitude to the studied material, the students are suggested to briefly describe each TRIZ method in their own words and their attitude towards it.

To systematize, remember and comprehend the studied theoretical material, to correlate it with the existing knowledge, the students need to select the images of different authors connected to each TRIZ methods with their brief interpretation.

To develop reflection, the students copy different works by different authors together with their written analysis (Fig. 3). This task, fulfilled after the theoretical classes, connects the theory and practice, encourages the development of reflection, the improvement of emotional response quality, develops relevance, depth and breadth of the assessments, activates the students' thinking activity. It is worth mentioning that that reflexion formation and development became the basics of the new education paradigm.

In order to develop artistic imagination and conscious use of TRIZ methods in practice, the students get the task to develop a sketch for every TRIZ method (Fig. 4). In order to activate the reflection and conceptual thinking it is necessary to accompany the sketch with a text analysis, clarifying the purposes of a certain method use. Here is the example of the student Olga Prepelitsa to the image from the Fig. 4d: "The task was to depict the topic of bullying in school. To do this, I addressed the

Principle of Satiated Action. I depicted the victim humiliated and helpless, reducing her size. The culprits, on the contrary, are shown

with hypertrophied long legs, which emphasizes their brutality and false superiority amidst the helpless hero”.

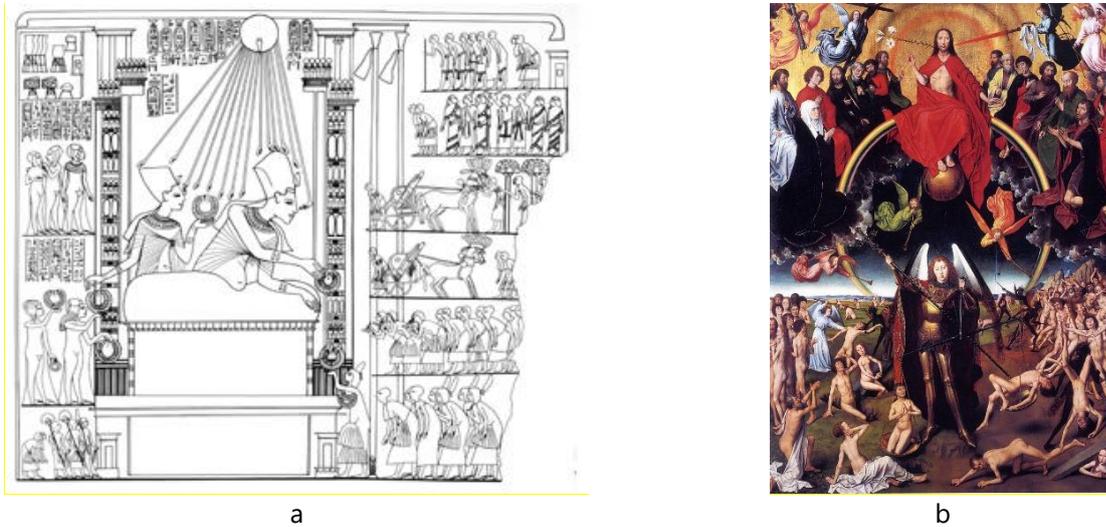


Fig. 1. Examples of illustrations using the Principle of Satiated Action by the masters of the past: a – Akhenaten rewarding Meryra from the Window of Appearance, Eighteenth Dynasty (from Davies, Amarna II, pl. 33) (Ancient Egypt) [10]; b – The Last Judgment, the central part of the triptych attributed to Flemish painter Hans Memling, 1466–1473 [11]



Fig. 2. Examples of illustrations with the use of the Principle of Satiated Action: a – illustration of O. Zagnoli [12]; b – Garnier's Fructis products campaign [13]. Examples of the use of the Principle of Partial Action: c – illustration of Nicoletta Ceccoli [14]; d – houses advertising [15]

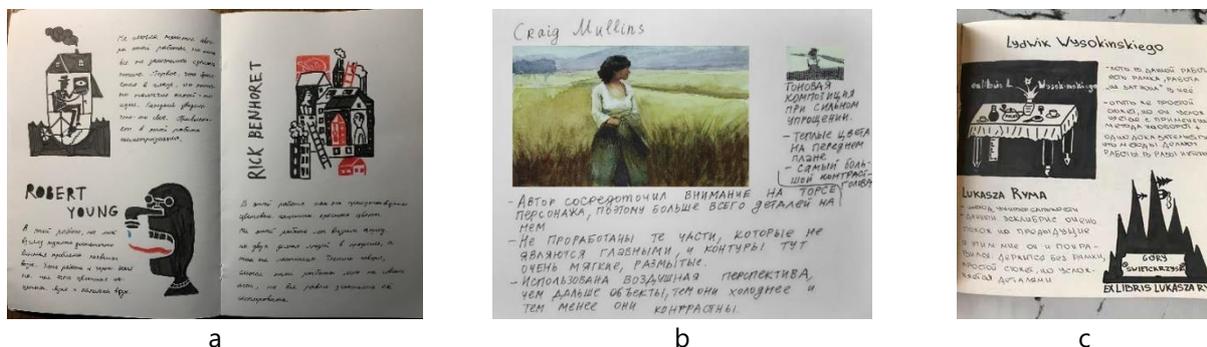


Fig. 3. The works of the students from the Department of Art History, Graphics and Methods of Teaching, of “Ion Creanga” SPU of Chisinau: a – art-book spread; b – a page from the art-book, author A. Scherbatyi; c – art-book spread, author A. Verbitskaya

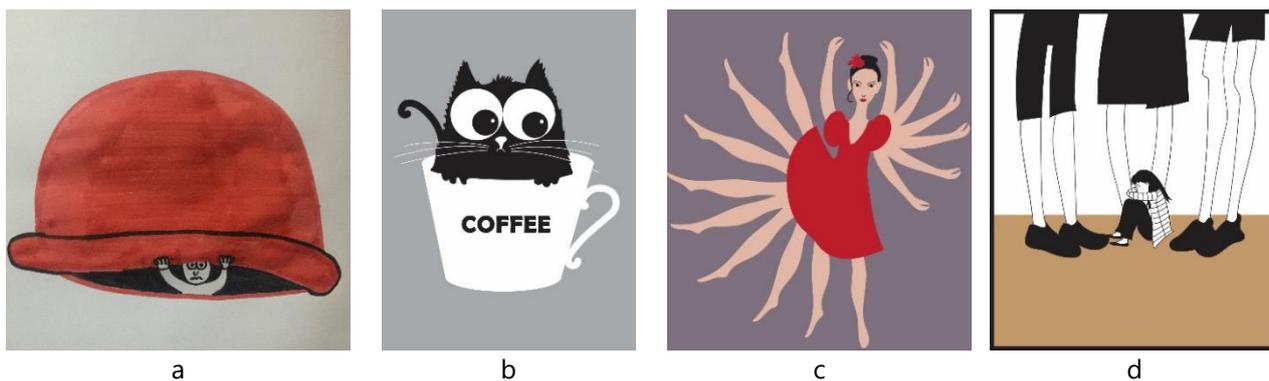


Fig. 4. The works of the students from the DAHGMT, “Ion Creanga” ICSPU using the Principle of Satiated Action: a – sketch to the illustration, author D. Lisenko, b – illustration, author U. Tsisar, c – sketch to the illustration, author A. Danilova, d – sketch to the illustration, author O. Prepelitsa

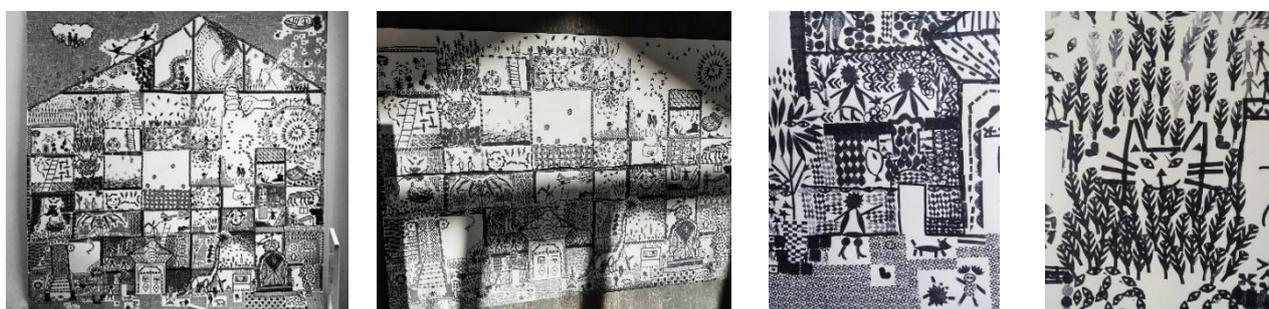


Fig. 5. Students’ group project “The Dorm”. Authors: the students from the DAHGMT, “Ion Creanga” ICSPU, educational programme “Graphic Design” A. Kovaleva, A. Chazeev, V. Shmelenko, V. Arsenieva, A. Verbitskaya. Paper, stamp printing, 151 x 168 cm, 2021



Fig. 6. Author’s book for children spreads using TRIZ methods (the Principle of Satiated Action, universality method, rendering method, spheroidal method), author – student of the DAHGMT, “Ion Creanga” ICSPU, A. Verepentseva

For the development of the composition-imaginary thinking and imagination, the Project-based learning method is used as well. The students take part in a group project (Fig. 5), using the knowledge, skills and abilities acquired during the course. As the researcher Grand Elmers writes in the article devoted to project-based learning in teaching graphic

design “by placing students in realistic, contextualized problem-solving environments, project-based learning can serve to establish bridges between knowledge gained in the classroom and real-life experiences...” [6]. He also underlines that “reflective practice applied in a structured and critical manner can play an

effective role to guide graphic design students to learn from their project" [6].

It should also be mentioned, that TRIZ methods study, allowed the students to more effectively and diversely solve different creative tasks, working on an author's book for children, as far as in their portfolio there was a whole range of effective tools, enabling to solve different problems (Fig. 6).

To conclude the results of the practical work, we need to underline that the completion of the practical tasks is a necessary and essential part of the course, it facilitates the enhancement of the quality of material assimilation and activity level, students' independence in solving creative tasks.

The results analysis of carrying out the course "The Fundamentals of Artistic Literacy" using the TRIZ methods classification showed that the completion of the course contributed to the students':

- interest enhancement towards visual arts, students' wish to discover the hidden meanings and connotations in art works;
- knowledge increase and deepening in the field of visual arts and basic humanities, in

general, multifaceted study of art, human being and world in general;

- artistic taste development;
 - perception of the aims and tasks of the creative process;
 - increasing the level of perception towards the visual material and the intensity of the perception;
 - development of mindfulness and meaningfulness of the independent creative activity;
 - formation and development of the conceptual-representative thinking;
 - formation of the ability to reflect the necessary emotions in the image;
 - a more ambitious and conscious search of own solutions, development of compositional-representative thinking, formation of the conditions of independent compositional activity;
 - broadening the range of the used methods in the work on images;
- thus creating favourable conditions to form and develop professional artistic thinking. All these have positively impacted the students' creative activity, their wish to express themselves in artistic field evolved.

Література:

1. Meyer M., & Norman D. Changing design education for the 21st century. *She Ji: The Journal of Design, Economics, and Innovation*. 2020. №6, P. 13–39. URL: <https://doi.org/10.1016/j.sheji.2019.12.002>.
2. Lagaeva T. I., Simak A. I. The use of TRIZ (TIPS) methods for the perception of the modern visual art. *Art and design*. 2020. №4(12). P. 29–40.
3. Altshuller G. Creativity As An Exact Science: The Theory of the Solution of Inventive Problems. Gordon and Breach Science Publishers, 1984. 320 p.
4. Ellmers G. The Graphic Design Project: Employing Structured and Critical Reflection to Guide Student Learning. *Communication Design*. 2015. №1. P. 62–79. URL: https://www.academia.edu/22315329/The_graphic_design_project_employing_structured_and_critical_reflection_to_guide_student_learning.
5. Almendra R. Educating critical thinking in design research. *International conference on engineering and product design education*. 2012.

Artesis University college, Antwerp, Belgium. URL: <https://www.designsociety.org/publication/33272/Educating+Critical+Thinking+in+Design+Research>.

6. Zlotin B., Zusman A., Kaplan L., Visnepolschi S., Proseanic V. and Malkin S. TRIZ Beyond Technology: The Theory and Practice of Applying TRIZ to Non-Technical Areas. Ideation International Inc. Detroit, Michigan. 2000. 52 p. URL: http://www.trizmantra.com/Learning%20Resource%20files/TRIZ_Beyond_Technology.pdf.

7. Agnolia S., Corazza G.E. TRIZ as seen through the DIMAI creative thinking model. *Procedia Engineering*. 2015. Vol. 131. P. 807–815. URL: <https://www.sciencedirect.com/science/article/pii/S1877705815042666>.

8. Chai Kah-Hin, Zhang Jun, Tan Kay-Chuan. A TRIZ-Based Method for New Service Design. *Journal of Service Research*. 2005, Vol. 8, Iss. 1. P. 48–66. URL:

<https://journals.sagepub.com/doi/epdf/10.1177/1094670505276683>.

9. Steel J., Temple C. and Meredith K. (1997–1998). Reading and writing for critical thinking. Set of Guidebooks: OSI: NY.

10. Rossi C. Architecture and mathematics in Ancient Egypt. New York, 2004. 280 p.

11. Battistini M. Symbols and Allegories in Art. Mondadori Electa S. p. A., Milano, 2002. 384 p.

12. Website It's nice that. URL: <https://www.itsnicethat.com/articles/olimpia-zagnoli-1>.

13. Website Irancartoon. URL: <https://www.irancartoon.com/site/artists/nicoletta-ccocoli>.

14. Website Dailymail. URL: <https://www.dailymail.co.uk/femail/article-2260101/Hairy-clever-Garniers-gender-bending-optical-illusion-adverts-products-women-AND-men.html>.

15. Website Freepic. URL: <https://www.freepik.com/premium-vector/hand-palm-holds-house-key-finger-concept-home-agent-sale-rent-house-19282735.htm>.

References:

1. Meyer, M., Norman, D. (2020). Changing design education for the 21st century. *She Ji: The Journal of Design, Economics, and Innovation*, 6: 13–39. URL: <https://doi.org/10.1016/j.sheji.2019.12.002>.

2. Lagaeva, T. I., Simak, A. I. (2020). The use of TRIZ (TIPS) methods for the perception of the modern visual art. *Art and design*, 4(12): 29–40. URL: <https://artdesign.knutd.edu.ua/wp-content/uploads/sites/33/2022/12/1-Art-3-2022.pdf>.

3. Altshuller, G. (1984). Creativity As an Exact Science: The Theory of the Solution of Inventive Problems. Gordon and Breach Science Publishers. 320 p.

4. Ellmers, G. (2015). The Graphic Design Project: Employing Structured and Critical Reflection to Guide Student Learning. *Communication Design*, 1: 62–79. URL: https://www.academia.edu/22315329/The_graphic_design_project_employing_structured_and_critical_reflection_to_guide_student_learning.

5. Almendra, R. (2012). Educating critical thinking in design research. International conference on engineering and product design

education. *DS 74: Proceedings of the 14th International Conference on Engineering & Product Design Education*. Design Education for Future Wellbeing, Antwerp, Belgium, URL: <https://www.designsociety.org/publication/33272/Educating+Critical+Thinking+in+Design+Research>.

6. Zlotin, B., Zusman, A., Kaplan, L., Visnepolschi, S., Proseanic, V. and Malkin, S. (2000). TRIZ Beyond Technology: The Theory and Practice of Applying TRIZ to Non-Technical Areas. Ideation International Inc. Detroit, Michigan. 52. URL: http://www.trizmantra.com/Learning%20Resource%20files/TRIZ_Beyond_Technology.pdf.

7. Agnolia, S., Corazza, G. E. (2015). TRIZ as seen through the DIMAI creative thinking model. *Procedia Engineering*, 131: 807–815. URL: <https://www.sciencedirect.com/science/article/pii/S1877705815042666>.

8. Chai Kah-Hin, Zhang Jun, Tan Kay-Chuan. (2005). A TRIZ-Based Method for New Service Design. *Journal of Service Research*, 8(1): 48–66. URL: <https://journals.sagepub.com/doi/epdf/10.1177/1094670505276683>.

9. Steel, J., Temple, C. and Meredith, K. (1997–1998). Reading and writing for critical thinking. Set of Guidebooks: OSI: NY.

10. Rossi, C. (2004). Architecture and mathematics in Ancient Egypt. New York. 280 p.

11. Battistini, M. (2002). Symbols and Allegories in Art. Mondadori Electa S. p. A., Milano. 384.

12. Site of journal «It's nice that». URL: <https://www.itsnicethat.com/articles/olimpia-zagnoli-1>.

13. Site of journal Dailymail. URL: <https://www.dailymail.co.uk/femail/article-2260101/Hairy-clever-Garniers-gender-bending-optical-illusion-adverts-products-women-AND-men.html>.

14. Site of journal Irancartoon. URL: <https://www.irancartoon.com/site/artists/nicoletta-ccocoli>.

15. Site of Freepic Company. URL: <https://www.freepik.com/premium-vector/hand-palm-holds-house-key-finger-concept-home-agent-sale-rent-house-19282735.htm>.

ФОРМУВАННЯ І РОЗВИТОК ПРОФЕСІЙНОГО МИСЛЕННЯ МАЙБУТНІХ ГРАФІЧНИХ ДИЗАЙНЕРІВ З ЗАСТОСУВАННЯМ МЕТОДІВ ТРИЗ

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Мета – висвітлення досвіду застосування методів Теорії Рішення Винахідницьких завдань (ТРВЗ) для формування та розвитку професійного мислення студентів, які вивчають графічний дизайн у Кишинівському Державному Педагогічному Університеті ім. "Іона Крянге".

Методологія У дослідженні були застосовані методи вирішення протиріч ТРВЗ, а також семіотичний, герменевтичний, системний, структуралістський, морфологічний та міждисциплінарний підходи. Також було застосовано Технології розвитку критичного мислення (Ч. Темпл, Д. Стіл, К. Мерідіт) та Метод проектів.

Результати. У статті описано досвід та результати впровадження програми навчального курсу «Основ художньої грамотності із застосуванням методів ТРВЗ» для студентів, які вивчають графічний дизайн. Проаналізовано та систематизовано методики викладання основ художньої грамотності через призму методів ТРВЗ, що стимулюють розвиток критичного та творчого мислення майбутніх графічних дизайнерів. Застосування методів ТРВЗ позитивно вплинуло на процес формування та розвитку професійного мистецького мислення студентів.

Наукова новизна дослідження полягає в тому, що автори застосували структуру методів ТРВЗ для вивчення та розуміння сучасної візуальної мови для створення об'єктів дизайну, а потім і для формування та розвитку професійного художнього мислення студентів графічного дизайну.

Практична значущість дослідження полягає у розробці авторського курсу «Основ художньої грамотності із застосуванням методів ТРВЗ» для студентів, які вивчають графічний дизайн у Кишинівському Державному Педагогічному Університеті ім. Іона Крянге.

Ключові слова: професійне мислення; графічний дизайн; художнє мислення; критичне мислення; розвиток творчого мислення; теорія вирішення винахідницьких завдань (ТРВЗ).

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