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Situational Tasks in Adult Education: Design and Diagnostics Algorithms

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Abstract

Purpose: The purpose of the article is to develop algorithms based on the specifics of adult education in modern conditions for the design and diagnosis of situational problems that contribute to the productivity of learning in the system of continuing education. Methodology: The methodological basis is the theory of contextual learning, formally limiting the subject and social content of occupational activity and clearly defining the real professional tasks. Result: The results of the study allow using the obtained technological algorithms in the organization of adult education in the design of didactic materials – tasks, projects and diagnostic toolkit. Applications: This research can be used for the universities, teachers and students. Novelty/Originality: In this research, the model of the Situational Tasks in Adult Education: Design and Diagnostics Algorithms is presented in a comprehensive and complete manner.

Keywords: Adult education, Design and diagnostics algorithms, Situational tasks, Increasing the productivity, Teaching and training

1 Introduction

The appeal to the theme of mechanisms' development of adult education is due to modern trends in education, especially the paradigm of continuous education throughout occupational life activity. Indeed, the current situation in the labor market is such that the competitiveness of the professional is constantly in need of increasing due to the acquisition of new unique qualities that determine compliance (even better advance) with respect to occupational tasks. The external working environment is subject to continuous updating, so the basic occupational and personal competencies must be continuously updated and improved through the expansion of knowledge, skills and the formation of a professional's readiness for conditionally creative non-standard solutions that contribute to the development of commodity-money relations. In addition to the external properties, there are internal qualities of the profession – a system of certification and /or training in a fixed period, confirming compliance with the current position or required for the next career step. An important initiating factor in adult education are the personal factors of each person – motivation to learn, the desire for career growth and development, changing the field of activity that requires retraining and/ or advanced training, etc. That is why the ability to effectively and successfully teach adults is becoming increasingly important in continuous professional education.

A sufficient attention in psychological and pedagogical research is paid to the issues of adults' education and development of andragogy in particular the purpose and mission of adults' education; value aspects of adult education; the content of adults' education; quality assessment of adults' education (3,10,13,17,18,19,27,28,29) are examined.

The specificity of adults' education, according to the researchers (10,11,15,20,21,22,24,25), consists in the following positions that have both conditionally positive and conditionally negative impact on the essential characteristics of the process and require a fundamental change in the approach to learning:

1) The existing system of education and self-government;
2) The presence of life and occupational experience and the persistent stereotypes;
3) Willingness to learn, due to explicit motives and abilities;
4) Practical orientation in the analysis of new information as a search for grounds for its occupational implementation;
5) Multiple nature of learning conditions – temporary, personal, occupational, social, etc.

Thus, the leading role of the adult learner fundamentally changes the approach to learning and puts forward didactic tasks of designing the educational process based on the design of special relationships and the nature of the interaction between the teacher and the learner. It is necessary to develop universal mechanisms, technologies and algorithms for designing the content and didactic organization of adults' education, contributing to the increase of learning productivity.

2 Methodological Framework

The theory of contextual learning of A.A. Verbitsky (30,31) in the simplified version can be stated in the following theses:

– The context is presented as a *unit of measurement* of the person – internal features and the environment, which determines his/her perception and actions in the framework of training;
– the gap between the fundamental difference between educational and occupational activities is significantly reduced in the modelling of the subject, social and moral content of education (semiotic, simulation and social models), contributing to the unity of the theory and practice of education and the formation of real readiness for the occupation;
– Unification of pedagogical management and self-management of the student through a joint system of goal-setting and gradual achievement of each goal by learners;
– Emphasis on the functionality of training through the continuous resolution of ambiguous subject situations, as close as possible to a holistic occupational activity.

This psychological and pedagogical theory, created more than 40 years ago, firmly occupies its place in the Russian pedagogical practice. The introduction of the competence paradigm in all levels of education, to some extent caused a new round of actualization of the theory due to its functional activity of the student through the maximum approximation to future practice. At the same time, the theory of contextual learning allows us to preserve the Russian traditions of formation through the formation of *moral experience* of not only subject-technological, but also social and moral competencies, that is, training and education within the educational process (32).

The pedagogical potential of this theory in adults' education is obvious: 1) there is an activity of students, acting because of motivation to learn; 2) there is a space-time context *past–present–future*, when there is a past experience, mastered new material and a model of future activity; 3) there is a clear understanding of their place in the occupation and its social role, determining the process and results of learning.

Thus, a significant increase in the motivational characteristics of adult learners contributes to the formation of new mechanisms of educational information's perception and increase its educational opportunities. Therefore, the use of the mechanisms of contextual learning theory is promising in the didactic design of adults' education. However, there is also a difficulty that arises under the circumstances - the existing images of activity in the minds of an adult can be negative. For example, stereotypes of actions and ideas, developed technologies for obtaining, memorizing information algorithms for solving problems can complicate the assimilation of new material, preventing new *images*, adequate to the modern realities of the profession, to become examples of occupational activity. This conclusion leads us to the need to expand the methodology of modern adults' education by addressing the cognitive mechanisms of education.

Cognition, as a deeply developed psychological term, is generally explained from the standpoint of thinking, memory, consciousness and perception, acting as the ability to process new information. Since in conditions of high information saturation, the principal factor is the acquisition of knowledge through the *screening* of information, the cognitive nature becomes the leading characteristic and the basic resource of the individual.

At the same time, many pedagogical characteristics have *cognitive nature*, based on regularities in the processes of cognition – pedagogical models, technologies, components of competencies, diagnostic materials. The variety of possibilities of cognitive approach's application to learning has generated a plurality of its interpretations in pedagogical and linguistic studies: *communicative-cognitive autonomy; cognitive competence; cognitive skills; cognitive-communicative skills*, *cognitive management* (5,12). Thus, there is a certain instrumental base, reflecting the subjective essence of the learning process, which fully meets modern ideas about the intellectualization and individualization of education, transforming didactic relations.

Any occupational sphere continuously recreates a number of occupational situations, the synthesis and analysis of which, built on the basis of human cognitive resources, determines the level of professionalism of the employee's actions and his/her social responsibility for the implementation of occupational actions. This implies the existence of a certain *ideal* (pattern of actions, image), taking into account personal abilities, opportunities for personal, intellectual and physical development, necessary for modern society. The established target qualities become the educational reference point, being realized in educational programs, the content of education, educational and methodical maintenance of educational process.

Moreover, here there is a natural question – how in modern conditions to provide effective occupational training of adults, taking into account social needs of society and cognitive features of the personality? Obviously, it requires a fundamentally new organization of the pedagogical process and the creation of conditions for the development of personal cognitive mechanisms, the formation of universal social qualities, the totality of which will determine the solution of occupational problems. The methodological basis for the resolution of the existing contradiction can be *socio-cognitive approach*, interpreted by us from the point of view of the processes of occupational

socialization/individualization and interpersonal interaction (4,23). One of the main provisions of this approach is that the person acquires meanings in the above-mentioned realities of the objective world, culture and speech through social interaction, understanding the sociality as a system that forms its life -many effective manifestations in a variety of life situations, including occupational. Thus, the base of activity is the initial social attitudes that determine the boundaries of action – there is a transfer of established forms of behavior, adaptation and development of the individual. The initial context of training influences semantic formations, developing them, and determines any transformations of the personality, formation of its new qualities. No less important in the design of the pedagogical process is the understanding of the conditional *interval* to achieve the goal – cognitive abilities determine the upper limit of possibilities, and properly organized conditions of educational and occupational activity – the lower limit.

Since adults' education is a mass phenomenon and not an individual one, it is important to rely on stable pedagogical regularities and connections when designing the content of education taking into account cognitive mechanisms. Differentiation and individual approach should be present when students independently choose educational trajectories, scaling and interpretation of learning outcomes for pedagogical diagnosis and correction. The influence of society and the necessary *return* from the profession has a significant impact on the cognitive development of the individual. *Subjectivity*, thus, will refer only to the internal, personal environment of professional's formation, and will determine the conditional rank of its success in occupational activity based on cognitive characteristics.

Contextual theory of education and socio-cognitive orientation set the following principles for the design of adults' education:

– *The principle of continuity* based on the active role of the adult learner in the educational process and the possible diverse trajectories of his/her career. Continuity determines the integrity of the system, consisting of separate discrete stages of professional growth, and is completed only at the end of employment, emphasizing the lack of discreteness between the points of professional growth of the teacher. Thus, continuity is considered as the prevention of *empty spaces* between *coming* knowledge, formed competencies and potential development of the educational process, which determine the interconnection of transitions from one point of professional growth to another;

– *The principle of self-development*, focusing on personality-oriented positions and the ratio of cognitive activity of the adult learner, its self-development and overcoming internal barriers. Self-educational need not only meets the needs of human creative development, but also *works* on the ideology of the modern world, when the intensity of obsolescence of knowledge and methods of action is proportional to its information content. In these conditions, nothing can be compared with the speed of self-education, taking place *here and now*, and requiring only an internal personal organization, becoming the most important source of professional growth;

– *The principle of iteration*, contributing to the formation of promising mechanisms of modern life activity in a rapidly changing socio-cultural environment. Iteration acts as a progressive movement towards the goal (within the existing conditions) with constant verification of the accuracy of this approximation. In this context, the implementation of the iteration principle provides support for the balance (internal balance of the person, the balance of the educational organization, the balance of the education system as a whole) in achieving the planned goals, compliance with training standards and labor market requirements in the event of significant changes of external and/or internal conditions of existence. With each iterative cycle, there is a movement to achieve the target results on the chosen trajectory of professional development, which allows the projection of the established mission of professional development.

– *The principle of integration*, which involves the interconnection and interdependence of the components of the adult learning system and personal cognitive characteristics of learning. Integration is considered by us, firstly, as the degree of connection between the components of the adults' education system and the system of occupational growth of the student; secondly, as the process of formation of professional growth integrity in the unity of personal, occupational, economic, educational and other needs of the student, initiating professional growth; thirdly, as a way of designing the content of occupational training in the integration of subject (branch), pedagogical and personal-developing training. At the same time, the development of the system is reproduced by the *duality* of structures – from the level of totality to individuals and from the level of individuality to the level of totality, that is, cyclically from differentiation to integration and back.

– *The principle of activity*, involving the positioning of the adult learner as an equal subject of the learning process and, consequently, determining its full involvement in the education process. This principle is reflected both in the method of choice of forms of training and in the nature of training: the content and methods of work. The main characteristics of such training is the leading role of the student in the construction and implementation of the training program within their own cognitive styles, and at the same time the joint activities of the student and the educator in the preparation and implementation of the educational process. Defining in this process are the relationship and the nature of the interaction between the teacher and the learner expressed in practice in the justification and selection of productive educational technologies.

The formulated methodological position and didactic conditions of the institution of adults' education determined by these principles form the boundaries of productive learning technologies' design. An important measure of interaction is the educational and occupational experience that determines the projection of social interaction on the cognitive development of the student, which allows the use of individual reserves and mechanisms of self-organization in the educational activities of adults.

3 Results

The applied methodology assumes that the active interaction of the student and new educational material for the formation of new competencies is more productive, the more involved the cognitive capabilities of each participant instrumental and content-based components of the psyche involved in the processes of organization and self-organization of human knowledge. It is this position that led to the introduction of situational occupationally oriented

tasks as the main practical educational technology in adult education. Here all the mentioned methodological positions are actualized: external context as subject, socio-cultural, spatial-temporal and other characteristics of the situation, and internal context as individual psychological features, cognitive style and the presence of the image (ideal) of goals and professional actions. This determines the implementation of the basic idea of contextual learning and socio-cognitive approach – *assignment* of new competencies through the images of mastered occupationally practical practice.

Situational tasks in the most General case are a problematic occupational meta-subject situation, close to professional practice, characterizing its functional dependencies, resource conditions, requirements for decision-making or possible limitations (1,2,16,26). The solution of this problem is to develop an occupationally value solution that optimizes the proposed situation.

Pedagogical potential of situational problems is the need to compare the requirements, conditions, known-unknown, multifactorial occupationally significant and moral choice, reproductive, productive, intensive creative activity of the student. In the most General case, the formulation of situational objectives should include the following components:

- The presence of the target;
- known conditions and/or limitations;
- the presence of an unknown variable factors;
- the possibility of several solutions to the problem;
- solution and limitations.

Situational problem is the result of reflexing of occupational experience. The plot and facts of the situational problem should be as close as possible to real life, to involve not only real working situations, but also extra-working moments (especially for socially important professions). It is extremely important to have many options for action due to the level of professionalism, morals, requirements of the profession, maintaining security, etc. The educational purpose of the situational problem can be reduced to the consolidation of knowledge, skills and behavior (decision-making) of students in this situation or be a model for obtaining new occupationally-oriented knowledge and behavior in the situation.

It is obvious that the construction of situational problems requires some training a teacher in the pedagogical sphere (taking into account all pedagogical, social and didactic positions), and a deep knowledge of the subject area (it is also possible to involve in the preparation of tasks practitioners). We present *an algorithm for constructing situational tasks* that contributes to the technologization of the process of developing didactic materials for adult education, taking into account their experience.

Stage 1. The formation of educational goals. This stage includes determining the place of the situational problem in the structure of the training course (mini-problem, individual or group project, direct solution or solution in the preliminary preparation, the level of complexity). It is recommended to solve problems at the first stages of training in the presence of a teacher to develop skills to solve them. It is also important to analyze the experience in the analyzed area, the level of occupational skills and corporate culture. It is useful to solve the same problems (or solve the same situation with the replacement of conditions) at different stages of training.

Stage 2. Construction or choice of a situation model that reflects the studied activity. Here, the drama of the situation and the plot of the problem are fundamental, the formulation with mutually exclusive conditions requiring moral or occupationally significant choice is possible.

Stage 3. Analysis of information in the subject area regarding the model of the situation. The reality of the situation is necessary, it is important that the number of conditions was necessary and sufficient to describe the situation or leave a variety of choice for the student. In addition, the position of the task is fundamental – the search for new knowledge or development of existing skills, which affects the typology of the task, its characteristics, consequences, ways of solving.

Stage 4. Diagnostics of validity of a situational problem. We are talking about conducting a methodical educational experiment, built on a particular scheme, to determine the effectiveness of the situational problem, which allows determining the characteristics of the structure of the situation, its functions, interaction with the surrounding and the internal environment. In the presence of multiple solutions to the problem, it is important to clarify the conditions that define the limitations of the context of the solution, the choice of the most optimal way out of the situation.

Stage 6. Preparation of the final version of the situational problem and the introduction of situational tasks in the practice of training. This stage requires the preparation of didactic materials and development of recommendations on the forms of interaction between students and the teacher (experts) in the course of solving situational problems.

We give examples of the developed situational tasks for different areas of additional training of adults, taking into account their little experience in each profession (less than 1 year).

1) Pedagogical direction.

School student (13 years - *condition 1*) is not satisfied with his mark and as a protest climbs during a lesson on the table (*the situation*). In the classroom there was laughter and comments from other children (*condition 2*), which obviously led to a disruption of the working environment (*situation*). The lesson was impossible to continue (*state*). How to return the working environment to the lesson, if such an event has already occurred? (*purpose*.)

2) Medical direction.

Medical worker (condition) after a hard day's work (condition) goes by public transport (condition), suddenly, standing next to a person loses consciousness (*situation*). What actions does he have to do? (Purpose.)

(3) *Police Officer.*

On one of the city streets in the city center (condition), a police officer pursues several persons (condition) who have just committed a robbery (situation). The employee has a service weapon (condition). After repeated demands to stop, the criminals continue to flee (situation). What are the lawful actions of the employee? (purpose)

When formulating tasks based on the theory of contextual learning (setting occupational boundaries), socio-cognitive approach (taking into account the ideal images and cognitive style of the adult learner) and the selected principles of learning (forming the subject activity of the teacher and the student), it is important to check the situational problem of pedagogical modeling (resolution of the situation). It seems efficient to use the cyclic model of D.A. Kolb, R.E. Boyatzis

and Ch. Mainemelis (2001) as a method of testing the hypothesis of the legitimacy of the development of the situation (9). Positive answers to each of the questions will determine the accuracy of the formulation of the situational problem:

1. Getting direct experience.
2. An observation in which the student ponders what he/she has just learned.
3. Comprehension of new knowledge, their theoretical generalization.
4. Experimental testing of new knowledge and their independent application in practice.
5. The presence of many hypotheses to resolve the situation.
6. Active experiment (real, simulated) and reflexive observation.
7. Deducing of output knowledge.

Thus, the starting point of adult education is the acquisition of specific experience, which provides material for cyclic occupational and personal development.

From the pedagogical point of view, the principle is not only the conditional correctness of situational problems' solution, but also the mechanism of its solution, creative approach, non-standard answers. No less important is the motivation of moral choice, isolating the system of values of the adult learner and demonstrating the full range of his/her occupational and cultural competencies in the context of occupational difficulties. Therefore, pedagogical diagnosis of solving situational problems' course is an important element of training, bearing it and self-reflective nature, contributing to the main directions of personal development: occupational (diligence, competitiveness), moral (feeling like a person, mastering the skills of cooperation and partnership), mental (ability to listen, memorize, analyze the situation, to comprehend a large amount of information), motivational-volitional (strengthening the will, mobilization of their forces and capabilities, defending their point of view, recognition of others' opinion).

We propose *a universal algorithm for step-by-step diagnosis of solving situational problems*, based on pedagogical experience and expert ranking of the stages' importance and effectiveness for students' solving problems (table 3). Each of the components of the situational task is aimed at the actualization, formation or development of certain occupational and personal characteristics, respectively, the implementation of each of the stages should be evaluated. The basis of the diagnosis is necessary point scaling; the resulting sum is the result of situational tasks' decision.

An important factor in the productivity of the presented diagnostic system is the analysis of each step and its importance for training. Thus, even if the result of solving a situational problem is not conditionally correct, it is possible to diagnose many occupational and personal characteristics of the student. It should also be noted that the diagnosis of solving situational problems carried out in this way can be applied to specific actions of students (during game and/or simulation tasks), oral answers, group or individual forms, developed projects with written argumentation, etc.

Table 3: Algorithm of situational tasks' diagnostics

Structure of the situational task	**Stages of solving the problem to students**	**Diagnostics**	**Assessment (points)**
The presence of the target	Understanding, goal setting	Immersion in the profession. A clear understanding of the occupational difficulties, the wording	3
Known conditions and/or limitations	The synthesis of known interdisciplinary knowledge	The level of meta-subject competences	5
		Determination of variability of conditions	2
The presence of an unknown variable factors	Reflexion of difficulties and search for new subject knowledge through the inclusion of their own mechanisms, techniques and methods of cognition (cognitive style)	The ability to listen, to memorize , to generalize	3
		The dynamics of the search for new adequate information and check for relevance	3
		Cognitive skills of comprehension of new information and its *transformation* into knowledge	4
The possibility of several solutions to the problem	Selection of a productive solution taking into account legal occupational and ethical standards	Mobilization of own forces and capabilities	3
		Actualization of life attitudes in the presence of moral choice	2
		The adequacy of options for a possible plan of action	5
		Criteria to optimize the solution	5
Solution and limitations	Formulation of the answer – description of the planned actions, taking into account their own limitations	Defending your own point of view, argumentation	5
		Cooperation and partnership skills	2
	Reflexion new knowledge	Formulation of the decision	3
Totally, competitiveness			35

4 Discussion and Conclusion

The concept of continuing education provides, firstly, a more rational distribution of periods of training and employment of a person throughout his/her life; secondly, the division of training into phases of initial (basic) and subsequent (after basic) education; thirdly, the acquisition of the necessary human skills, knowledge, qualities, personal orientations as the need arises in them. According to the basic assumptions of adult education (self-direction, experience, readiness for learning, the rapid implementation of acquired competencies, the specific learning environment) the content of their training should initiate its unique characteristics as a person and a professional, consider the experience of the profession, interests, motives and at the same time, have the potential for continuous development and self-realization, using their own creative and evaluative mechanisms (6,7,8,14,31). In this context, the solution of situational problems can become a didactic tool for the organization of adult education, causing its pronounced practice-oriented (sometimes even pragmatic) nature. At the same time, the not clearly expressed nature of the search for new information, research, modeling, generalization and building the necessary experience, concluded in the technology of situational problems necessitate specific subject and interdisciplinary knowledge and occupational and personal competencies.

Thus, as a learning technology, situational tasks in adult education, having a high pedagogical potential, implement the following functions:

– Training, involving the improvement of knowledge and skills in the occupational subject area;

– Social, aimed at obtaining social experience in the productive resolution of the proposed situation in the course of emerging relations;

– Developing, providing structural complication of subject and interdisciplinary occupational relations;

– Reflexive, conditioning analysis of own ideas and planned actions of the student to resolve the situation;

– gnoseological, aimed at identifying the mechanisms, techniques and methods of cognition and the development of their own cognitive style of the student.

The positive experience of the authors in the implementation of situational tasks in the process of adult education in the framework of retraining and advanced training allows us to recommend the proposed algorithms for the design and evaluation of situational problems in the practice of education.

Knowledgment

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References

1. Adonina, N.P. Situational tasks - technology of continuous education. *Basic research*.2015; 7: 21-36.
2. Arkhipova, N.I. The use of situational tasks for the development of motivation of professional activity. *Key to success*. 2016; 3: 17-18.
3. Fauskanger, J., & Bjuland, R. Deep Learning as Constructed in Mathematics Teachers' Written Discourses. *International Electronic Journal of Mathematics Education. 2018; 13*(3), 149-160.
4. Glavatskikh, M.M. Socio-cognitive approach in the study of socio-psychological maturity of personality. *Bulletin of Saratov University (Acmeology of education. Psychology of development)*. 2015; 2: 131-135.
5. Gorkayeva, E.N. Cognition in modern education. *Proceedings of the Samara scientific center of the Russian Academy of Sciences*. 2012; 2(5): 1134-1138.
6. Grigorieva, V.Z. Adult education: features of the educational process. Blagoveshchensk: publishing House of the Amur state University. 2015.
7. Işık Y, Kurdoğlu Z, Göktaş U, Kati İ, Sözen D. Comparison of propofol and ketofol in minor gynecologic interventions. J Clin Exp Invest. 2015;6(3):244-9. https://doi.org/10.5799/ahinjs.01.2015.03.0527.
8. Klarin, M.V. Innovative education in adult education. *Problems of modern education*. 2015; 4: 5-27.
9. Kolb, D.A., Boyatzis, R.E., and Mainemelis, Ch. Experiential Learning Theory: Previous Research and New Directions. 2001. URL: http://www.d.umn. edu/~kgilbert/educ5165-731/Readings/experientiallearning-theory.pdf
10. Kolesnikova, I.A. Basics of andragogy. Moscow: Academy. 2003.
11. Lebedeva, N.B. Adult education in retraining courses: principles and conditions. *Scientific dialogue*. 2013; 4: 12-17.
12. Levina, E.Yu. Cognitive paradigm of educational systems management. *Pedagogical journal of Bashkortostan*. 2018; 2: 24-30.
13. Lima, A., Mendes, D., & Paiva, S. Outdoor Navigation Systems to Promote Urban Mobility to Aid Visually Impaired People. *Journal of Information Systems Engineering & Management. 2018; 3*(2), 14.
14. Lutsenko, L.I. Training and advanced training of adults in the system of continuing education. *News of Tula state University*. 2012; 2: 306-312.
15. Maron, A.E. Practical andragogy. Book 5. Open adult education. Saint Petersburg: Russian education Academy establishment "Institute of adult education". 2012.
16. Matkarimova, D.Sh. Technology of construction of situational tasks in the content of practical training. *Young scientist. 2012;* 4: 434-437.
17. Mezentseva, L.V. Adult Education: on forms and methods. *Bulletin of Volzhsk University. 2015;* 4: 137-143.
18. Nikulin, N.Yu., and Zinoviev, T.A. Features of professional training of adults. *Young scientist. 2015;* 1: 464-466.
19. Nuriyev, M., Sovetkanova, D., & Seysenbayeva, Z. Achievements and new challenges in the area of education of independent Kazakhstan. *Opción*. 2018; *34*(85-2), 337-352.
20. Petrova, A.S. Andragogical approaches to adult education in vocational education. *Concept*. 2013; 4: 726-730.
21. Postnikov, S.I. Adult education: a look at theory and practice. Moscow: Yurayt. 2014.
22. Selomo, M. R., & Govender, K. K. Procurement and Supply Chain Management in Government Institutions: A Case Study of Select Departments in the Limpopo Province, South Africa. 2016.
23. Sergeev, S.F. Cognitive pedagogy: features of teaching and education of adults. *Bulletin of the North-Eastern Federal University*. 2016; 3: 30-35.
24. Shirvani, M., Mohammadi, A., & Shirvani, F. Comparative study of cultural and social factors affecting urban and rural women's Burnout in Shahrekord Township. UCT Journal of Management and Accounting Studies. 2015; 3(1), 1-4.
25. Singh, A., & Singha, N. ENVIRONMENTAL IMPACT OF NUCLEAR POWER: LAW AND POLICY MEASURES IN INDIA. *Humanities & Social Sciences Reviews*. 2016; *4*(2), 88-95. https://doi.org/10.18510/hssr.2016.424.
26. Slobozhaninov, Yu.V. New pedagogical practices: design and application of situational tasks. Kirov: The Sociosphere.2014.
27. Taştan, S.B., Davoudi, S.M.M., Masalimova, A.R., Bersanov, A.S., Kurbanov, R.A., Boiarchuk, A.V., Pavlushin, A.A. The Impacts of Teacher's Efficacy and Motivation on Student's Academic Achievement in Science Education among Secondary and High School Students, EURASIA Journal of Mathematics

Science and Technology Education. 2018; 14(6), 2353-2366.
28. Teslinov, A.G., and Protasova, I.A. Adult education. The spirit of andragogy of development. Moscow: Flint. 2017.
29. Vasyagina, N.N. Adult education: experience and perspectives. Pedagogical education in Russia. 2012; 2: 9-12.
30. Verbitsky, A.A. On the categorical apparatus of the theory of contextual education. *Higher education in Russia*. 2017; 6: 57-67.
31. Verbitsky, A.A. Theory and technologies of contextual education. Moscow: Moscow state pedagogical University. 2017.
32. Verbitsky, A.A., and Rybakina, N.A. On the system, process and result of continuing education. Higher education in Russia. 2016; 6: 47-54.