LOOK ACADEMIC PUBLISHERS
OPEN ACCESS

INTERNATIONAL JOURNAL OF ENVIRONMENTAL & SCIENCE EDUCATION
2016, VOL. 11, NO. 14, 6540-6556

Organization of Individual Work of Students Under Competence-Oriented Approach to Education in Higher School

Nazym T. Ualiyeva, Alma Z. Murzalinova

Kazakh National Pedagogical University named after Abay, JSC "NCPD" Orleu", Institute for Professional Development of Pedagogical Staff, KAZAKHSTAN

ABSTRACT

The main objective of this research is to identify the essence, content and specifics of organization of individual work of higher school students under competence-oriented approach. The research methodology is related to the choice of competence-oriented approach to ensure transformation of individual work into individual activity in self-education and development of professional and core competences of future teachers. Upon the research results, the content of individual work of students was re-confirmed in integration of its external (organizational and procedural) and internal (personality-forming) aspects to create the space for personal and professional development of a student. Great effect of self-education and self-development skills formed under individual work organization conditions was identified in connection with formation of value-related sense sphere of a student and establishment of his/her professional competency. Also, personally significant value of individual work was acknowledged acting as an internal regulator of future professional pedagogical activity (a stable motive for future professional activity) and actualizing creative motivation of a student, individualization of the style of academic and research activity, reflexive self-position as a subject of activity, self-governance and other personal qualities of future teachers. The significance of the results obtained is determined by the use of psychological and pedagogical conditions of the organization and respective methodical follow-up to improve individual work of students in the structure of competence-oriented education in a higher school.

KEYWORDS
Competence-oriented approach, individual work of students, independence, self-education, competences, competency, individual educational trajectory .

ARTICLE HISTORY
Received 17 May 2016
Revised 24 July 2016
Accepted 19 August 2016

1. Introduction

Systematic modernization characterizing higher education in Kazakhstan suggests update of the conditions under which a future specialist's personality is

CORRESPONDENCE Nazym T. Ualiyeva ✉ Email: nazym.85.kz@mail.ru

© 2016 The Author(s). Open Access terms of the Creative Commons Attribution 4.0International License (http://creativecommons.org/licenses/by/4.0/) apply. The license permits unrestricted use, distribution, and reproduction in any medium, on the condition that users give exact credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if they made any changes.

formed. A most important factor of personal development is a personality's ability for self-education and self-realization.

Thus, Kazakhstan higher schools face formation of specialists with the level of competences sufficient for efficient self-education in the sphere of continuous education and professional activity. The implementation of the said task is related to the Step 78 of the Nation's Plan '100 Concrete Steps' on gradual expansion of academic independence of higher schools, including formation of higher school component and list of electronic disciplines (Plan natsii "100 konkretnykh shagov: sovremennoe gosudarstvo dlya vsekh [Nation's Plan '100 Concrete Steps: Modern State for Everyone'], 2015). Free choice of educational trajectories suggests individualization of education while individual work of students (IWS) grows.

Quality transformation of a student's personality, self-confidently taking good positions in the labor market, suggests actualization of IWS on the basis of competence-oriented approach.

Competence-oriented approach (COA) seeks to form practically applied comprehensive skills, expertise and knowledge, and their quality transformation, motivated by readiness of students, into their experience and abilities. COA is optimal to develop psychological readiness of students to self-education based on formation of stable motives via exact representations of the essence, goals and methods of IWS. In that case, readiness of students for individual work means 'holistic manifestation of personality', 'special personal state which suggests a person to have the image of the structure of an action and continuous orientation of consciousness to do it' (Aimaganbetova et al., 2014, p. 7).

IWS organization under COA is socially important as 'the problem to form professional competency of a specialist is the issue to achieve compliance with the model of teaching imperatives of continuous sophistication of life process and professional activity' (Gulyaev, 2014, p. 10).

The need for IWS actualization is acknowledged by the contemporary interpretation of the quality of education – 'a set of characteristics of educational process actualization identifying consistent efficient formation of competency, professional consciousness, organizational culture, ability for self-education' (Burlakova, 2013, p. 37).

So, the quality of professional pedagogical education is becoming possible subject to formation as components of self-education in the personality structure of future teachers of independence, governing individual work and individual activity. Taking this provision into account, the hypothesis of this research is worded: if in the course of organization, a set of psychological and pedagogical conditions related to motivation, content/procedural, technological support of that leading form of education in a higher school is accounted for, it will contribute to formation of professional competency of future teachers, as the above conditions will allow a student:

- to integrate abilities and skills of individual work, self-governance and self-education;

- to create and maintain personal and professional development space.

The established self-governance contributes to IWS transformation into independent activity in self-education which makes up the prognosticated result of our research. In essence, IWS is 'a means to get students involved into

individual cognitive activity forming psychological need for systematic self-education' (Tobagabylova, 2010, p. 159).

To achieve the prognosticated result, competence-oriented IWS organization is required. In case of such organization, IWS is becoming a leading form of higher school study and in an organic way finalizes the goals of all kinds of academic work. Therefore, the need to activate it and the need for systematic management (self-management) and methodological improvement requires studying the issues of its organization.

The research issue is conditioned by the need to correlate the contemporary educational process in higher school with such a leading form of education as IWS, based on training self-educating specialists. IWS is becoming an organizational form of continuity and succession in 3-stage training in pedagogics: bachelor – master – PhD.

2. Methodology

2.1. Place and role of IWS in the structure and content of competence-oriented education in higher school

Currently, 'the role of independent work has grown greatly so that it has to be planned in a special way, creating specific forms/methods, allocating time, space and technical resources' (Avanesov et al., 2005, p. 45). Meantime, 'the issue to arrange individual work of students within a science-based, methodologically correct and practically feasible technology emerges' (Kutukova, & Prokhorova, 2010, pp. 43-44). In that connection, we will consider IWS in the organization-related aspect, noting that IWS organization issues under COA are understudied in the scientific literature while this paper organically finalizes the goals of all kinds of academic work.

Competency is considered by us as a certain quality of perception by a future pedagogue of professional-oriented reality which advises the most feasible way to solve pedagogical tasks in a particular situation.

To arrange IWS under COA, we specified the following components of competency:

- level of perception by students of subject-related knowledge and skills under individual work conditions (quality of knowledge and skills);

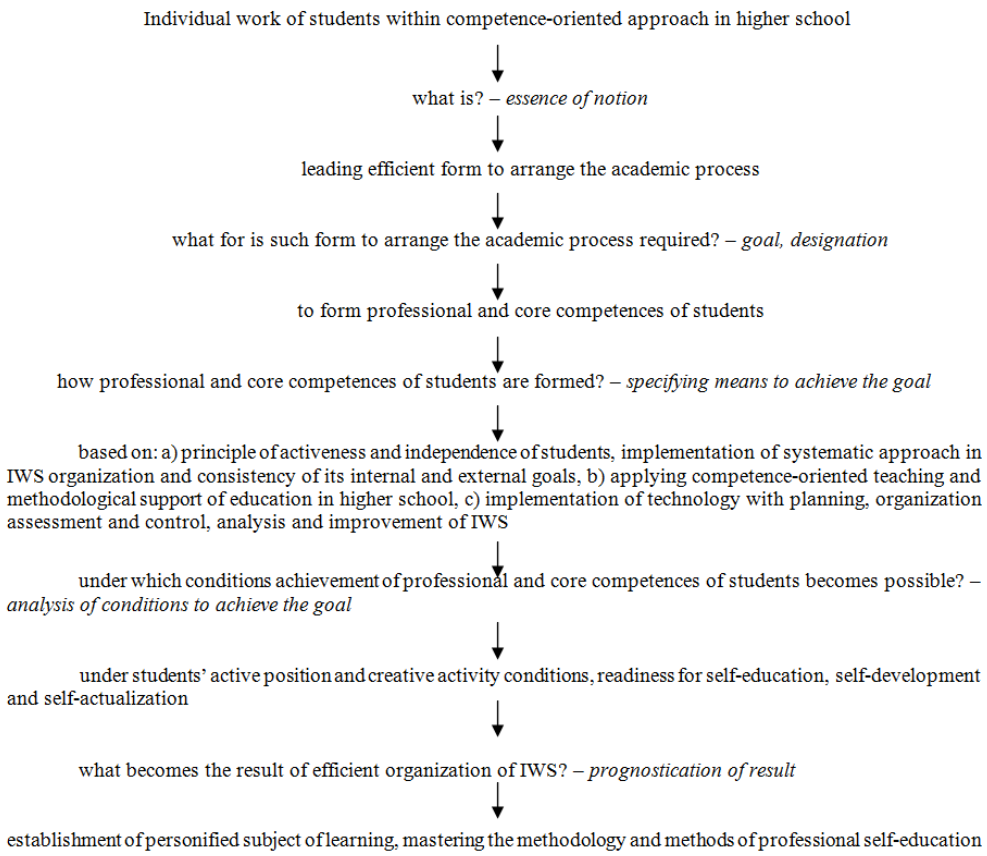
- range and breadth of knowledge and skills applied to arrange individual work (quality of instrumental and applied knowledge and skills);

-ability to fulfil individual tasks by students;

-ability to rationally arrange and plan individual work;

-ability to quickly adapt in case of technological changes and organization/conditions of individual work.

In Figure 1, the denotation graph shows the place and role of IWS in the structure and content of competence-oriented education in higher school.



In more detail, the characteristics and content of competence-oriented IWS were described by us in "Competence-Oriented Independent Work of Students in Higher Education Institutions: Characteristics, Content and Organization" (Ualiyeva et al., 2016).

2.2. IWS organization based on COA

Organization of IWS under research should become a 'strong position' in professional training while the other situation is being observed: 'individual work, its planning, organizational forms and methods, control over its results are one of the weakest areas in higher education practice and one of the least studied issues of the pedagogical theory' (Guseva, 2008, p. 5).

First of all, our IWS organization uses as the cornerstone the principle of activeness and independence of students in learning. Activeness in learning is considered not as an active state of a student but as a quality of this activity in which the personality of a student is manifested with his/her individual position and motivation towards learning, attitude to the content, nature of activity, readiness for academic/cognitive and creative activity, strive to get mobilized to achieve the academic/cognitive goals. Activeness principle in learning expresses the general requirement to IWS organization in which the process of learning is a self-governed reflective and transforming activity.

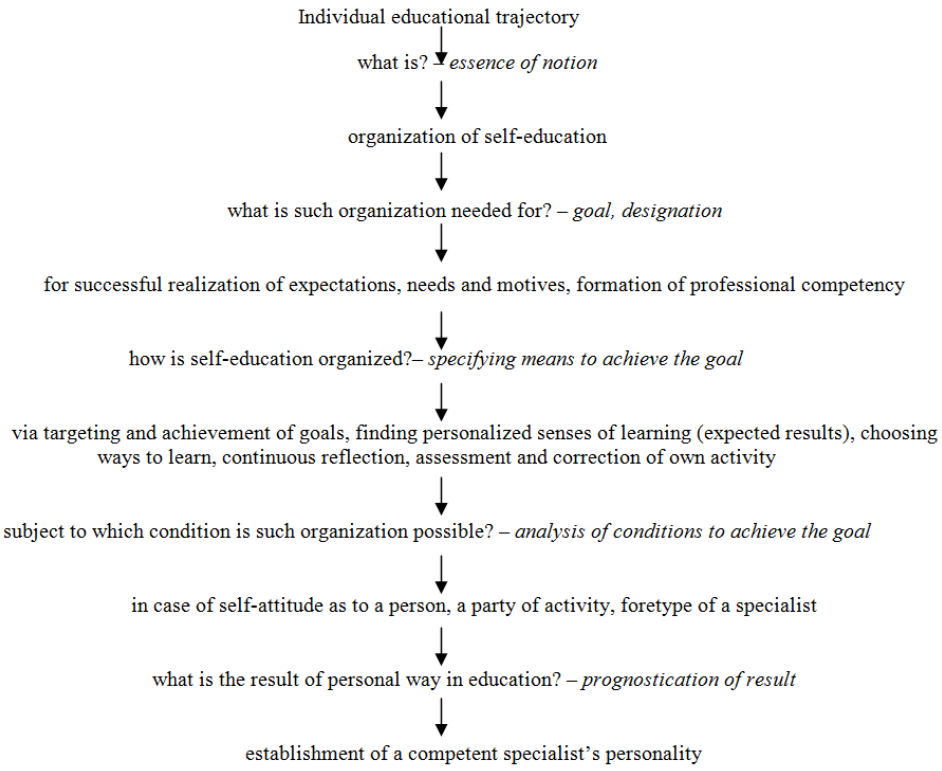
The second aspect of IWS organization is the need for systematic approach to all its components. The implementation of such an approach in higher school

should be based on the assumption that individual work is not only individual acts by students to study the academic materials but a special system of learning conditions organized by teachers which is, therefore, an aspect of their activity.

Implementation of systematic approach to IWS organization implies the tools of feedback and feedforward with students, graduates and teachers, ensuring the availability of data on the academic process in general and IWS organization in particular at the current moment and in dynamics. It is extremely important to do monitoring of students' opinions via questionnaires and upon the results obtained to do organizational and corrective steps. Feedback tools are aimed to ensure timely correction of faults in IWS organization. Feedforward tools seek to forecast future changes and account for those forecasts in IWS improvement.

Implementation of systematic approach to IWS organization covers structuring of the academic materials, academic process and learning performance monitoring accounting for vertical and horizontal integration to form worldview positions of future specialists, integrated into a single complex along with scientific, aesthetical, legal, political and religious positions of a personality. Structuring requires not only continuous content-related and cognitive scheme to study the disciplines but also use of multi-variance of educational programs, options in choosing disciplines. Such structuring accounts for the choice of individual educational trajectory by each student 'conditioned by individual motives to learn, personal abilities and work experience' (Mirzakhmetov, 2010, p. 4). We also stress that integrative structuring meets our view of individual educational trajectory shown in Figure 2.

Figure 2: Denotation graph to 'Individual educational trajectory' notion



The third aspect of IWS organization is availability of consistent external and internal goals.

External goals are determined by market requests to the level of staff training and changing extensive/intensive factors in learning in favor of the latter. The basic way to control education quality is to improve the quality of organizational activity of a teacher and individual activity of students based on qualification parameters of specialists.

Internal goals of IWS organization are, as a rule, reflected in exact goals of a teacher and students. Often, internal goals of IWS organization insufficiently comply with the external goals or do not correlate with each other. For instance, succession in forms and methods of students' academic activity suggests a search-related task in each kind of individual work to stimulate heuristic search activities of students in the course of its fulfillment. IWS tasks are not only a form to demonstrate the content of education but also a means to form individual activity in the course of learning.

IWS organization suggests establishing its mutual relation with other forms of the academic process organization, namely:

1) identifying tasks and content of IWS during the study of disciplines, professional work experience, term and diploma works – in the aspect of goal, values, place of some or other form of organization of the academic process in professional training;

2) making the content and methodology of lectures, practices, laboratory studies compliant with the tasks, content and methodology of IWS;

3) reasoned choice of forms and methods of IWS organization meeting the task to form professional competency;

4) value and practice related content of IWS interacting with theoretical and methodological content of other forms of the academic process organization.

The fourth aspect of IWS organization is the technology comprising the elements of planning, organization, assessment and control, analysis and improvement of IWS.

Technology here means a way to organize and do IWS via a set of methodological and didactical instruments to ensure individual work under the psychological and pedagogical conditions meeting COA.

A teacher ensures development of guidance materials to organize IWS and recommendations in connection with literature sources; development of requirements to complete tasks, deadlines and forms of control/reports and policy for assessment of the quality of IWS fulfilled; differentiation of IWS and tasks by kinds and levels of complexity. IWS content is reflected in the working educational program of a discipline – a syllabus, specifying the volume of individual work within the academic period, number and character of tasks, their labor intensity and deadlines.

Description of each kind of IWS may contain: designation of that kind of IWS; time guideline to fulfill a respective kind of IWS; requirements to fulfillment of a group or an individual project, situational tasks, reports, presentations, essays, etc.; forms of holding and controlling, criteria for marks; description of the task and forms to submit reports of fulfillment; alternative tasks accounting for the level of a student's training.

IWS must be fulfilled by the student in person or be an independent part of group work; be a finished development (finished stage of development) in which the current problems on a certain topic or some aspects of that topic are covered and analyzed (current problems of the studied discipline and respective sphere of practice); demonstrate sufficient competency of a student in the issues covered; have academic, scientific and/or practical focus and significance; contain some aspects of novelty (if it is scientific research).

A teacher faces the task to conditionally divide the material into three parts, the most complex of which will be lectured and will be included in the educational and methodical complex as the content of lectures. In view of the above, all IWS tasks may be divided into two parts. First, to get ready for each lecture a student has to review the recommended course books, create definitions, write an essay of original perception of the topic, work out own list of references, etc. Second, depending on the specifics of a discipline, tasks may be offered which require time and certain knowledge. These, for example, are presentations, group and individual projects, case study, solving pedagogical tasks, modeling, etc.

All tasks should perform as motivators of the research approach to acting. The practice acknowledges great variety of individual work. Meantime, feasibility of using each type should be taken into account. Optimal planning of IWS is based on regulation of time costs to do various tasks. Tasks may be provided with respective instructions if students' attention needs to be paid to certain aspects of IWS content and organization.

We formed the characteristics of IWS tasks accounting for the requirements of the above technology:

1) tasks should be prepared by the system of in-class studies to provide students with analogs, samples, algorithms, etc.;

2) tasks seek to transform knowledge into personal experience and ensure way to independent creative and research level, therefore requiring execution throughout the whole study of a topic;

3) tasks suggest expansion/deepening of lectured materials, their inventory, systemizing, generalization, schematization, application;

4) tasks seek to transform knowledge from one form into another – modelling, structuring – to reproduce the integrity of the object studied (e.g., 'We are sure that, not having mastered model thinking, it is very hard to seek success' (Moiseev, 2001, p. 57));

5) tasks may be ended with a development in which the current issues of the studied discipline are covered and analyzed taking into account the respective sphere of practical activity;

6) tasks should have academic, scientific and practical focus and significance;

7) functions of tasks are 'integration of theory and practice, organizing future specialists for science-intensive practice which is compliant with the goals of the

State Program for Development of Education and Science of the Republic of Kazakhstan for 2016-2019 (Gosudarstvennaya programma razvitiya obrazovaniya i nauki Respubliki Kazakhstan na 2016-2019 gody [State Program for the Development of Education and Science of the Republic of Kazakhstan for 2016-2019], 2016). Under such conditions, practical work contributes to the formation of the two components of the object – logical and thematic, and cognitive and creative (Abdymanapov, 2009, p. 23).

Thus, the IWS studied seeks to form and develop professional and general cultural competences in self-design, self-organization, self-control of profession-oriented activity.

3. Results

3.1. Results of poll to identify the level and fullness of personal opening of students studying under IWS

One of the reasons for inefficient IWS organization is conditioned by the absence of succession between education at school and in higher school. So, the present students do not have school experience of competence-oriented approach. Their formation in cognitive/perceptual and personal/behavioral sense was under the conditions of knowledge paradigm, underestimating the role of IWS.

The objectivity of the above is acknowledged by the poll of 156 third-year students of three pedagogical specialties studying in the North Kazakhstan State University named after M. Kozybayev, Kokshetau State University named after S. Ualikhanov, Kokshetau University named after A. Myrzakhmetov.

During the poll, opinions and statements of respondents to the respective units of questions were obtained:

- What is individual work in the university for you? By which reasons may it be compared to in-class studies? What are the advantages of individual work compared to in-class studies?

- What does the quality of your individual work depend on? What contributes and what hampers efficient individual work? What is required from a student, a teacher, a university to efficiently organize individual work?

- What do you connect with the results of individual work? Did you reach self-realization under individual work conditions?

- To which extent does individual work prepare you to be engaged in pedagogical activity? Does your individual work contribute to accumulation of profession-oriented practice and transformation of that practice into experience?

The answers were content-analyzed first. From the information obtained, significant content units were extracted and fixed to be further generalized and grouped into thematic communalities displayed in Table 1. It allowed identifying semantic indicators pointing to the level and fullness of revealing personality of students studying under individual work conditions (on the basis of 100% of mentions for each indicator).

Table 1: Indicative structure of thesaurus of students' actions under individual work conditions

No.	Semantic indicators of students' actions under individual work conditions	Frequency of mentioning indicator in students' answers (in %) of following majors:

		a) Pre-school education and training, b) Pedagogics and methods of elementary education, c) Pedagogics and psychology,
1.	Motivated interest to tasks of individual work	a) 46 b) 53 c) 61
2.	Activation of internal potential of students under individual work organization conditions	a) 45 b) 50 c) 60
3.	Development of abilities and competences of students	a) 51 b) 56 c) 62
4.	Intensive interpersonal interaction under individual work conditions	a) 50 b) 55 c) 67
5.	Continuous unrestricted submergence in the study process via individual work	a) 43 b) 59 c) 66
6.	Intensive self-education as a new quality of individual work	a) 48 b) 58 c) 60
7.	Intensive self-cognition of internal reserves to do individual work	a) 50 b) 64 c) 66
8.	Motivated cognition and mastering future teacher's profession	a) 56 b) 69 c) 78
9.	Getting closer to achievement of goals and targets of individual work	a) 55 b) 69 c) 70
10.	Stimulation of success, activation of personal strengths in doing individual work tasks	a) 58 b) 69 c) 72
11.	Multi-fold self-manifestation and self-expression in doing individual wok tasks	a) 46 b) 54 c) 61
12.	Support by teacher and fellow-students of personal efforts	a) 54 b) 60 c) 69

The content analysis results showed: problems detected and typical faults in IWS are caused mostly by preferring traditional knowledge paradigm of

education, insufficient formedness in students of value and sense-related attitude to IWS, self-learning and self-development abilities.

3.2. Results of aspect questionnaire on IWS organization

To organize competence-oriented IWS, the attitude of students to individual academic work and assessment of its current condition are important.

To diagnose the studied attitude, we did aspect-related questionnaire of 373 students of years 1-2 of intramural and extramural education on the majors: 5V010100 'Pre-school Education and Training', 5V010200 'Pedagogics and Methodology of Elementary Training', 5V010300 'Pedagogics and Psychology'.

The questionnaire included 4 questions covering various aspects of the current IWS. Below, the content results of the questionnaire are listed.

Answers to the question: How much individual work should be to successfully graduate from the university? distributed as follows: much more than now (14.2%); somewhat more than now (26.3%); same as now (37.4%); somewhat less than now (21.7%); much less than now (3.8%); difficult to answer (2.8%).

As we see, a little more than 1/3 of students are satisfied with the volume of individual work offered to them (40.5% – need more; 37.4% – current volume is enough; 25.5% – need less). Meantime, each fourth student is not ready to self-education yet, not fully realizing the need to individually study the academic materials and therefore limiting the study of subject-related content of the discipline to the tasks in connection with studying it, which is acknowledged by the results of post-questionnaire interviews with respondents.

Answers to the question: Which forms of individual work in studying academic disciplines do you use more often? distributed as follows (several options could be chosen; therefore, the sum of distribution exceeds 100%): making notes (73.3%); making essays/reports including electronic presentations (42.4%); solving typical practice-related tasks (30.8%); preparing messages (24.4%); other (5.2%); difficult to answer (4.4%).

Here, dominating are reproductive and algorithmic kinds of individual work: practice-oriented tasks (solving typical practical tasks and making notes), i.e., tasks to reproduce, fix and repeat the material.

During the study of the practiced basic forms of individual work of students in class (lectures, seminars, practices) the following distribution was identified: making laboratory works (58.4%); poll to cover the given homework (66.1%); making and discussing reports (24.7%); solving typical practical exercise tasks (48.9%); making notes (47.2%); doing mini-tests (40.4 %); filling in tables (22.1%); preparing projects (20.1%); study of material using textbooks (31.4%); problem discussion (16.3%); brainstorm (13.6%); business games, trainings (8.8%); no individual work organized (2.1%); difficult to answer (2.6%).

The results of aspect-related questionnaire acknowledge that the priority forms of individual work are: doing laboratory works, poll to cover the given homework, solving typical practical exercise tasks; making notes, doing mini-tests; secondary group includes group forms of individual work (problem discussion, brainstorm, business games and trainings). Currently, IWS is conducted within the logic of traditional knowledge paradigm of education; it is weakly oriented to creative and research systematic activity of students.

Also, the most practiced forms to control individual work of students are: checking of works in writing by teacher – essays, tests, etc., including via e-mail (70.7%); points/rating marks (58.4%); Internet-testing (32.8%); making portfolios of academic performance (12.4%); group assessment or public expertise (6.3%); writing essays – (11.8%); difficult to answer (3.4%).

In that case the traditional forms of control are preferred as well – checking works in writing, points/rating marks, Internet-testing. Ways of control like portfolios of academic performance, essay and public expertise are sporadically used by teachers, although their application allows students to adequately assess own abilities, analyze the results obtained and make the required conclusions. Meantime, the said interactive forms of control based on mutual and self-assessment are prospective for competence-oriented learning, the basic function of which is result-related and diagnostic. It relates to the development of an efficient system to monitor the quality of professional educational process and to diagnose the achieved levels of formedness of competences in students, including their component (skills).

The questionnaire of third-year students of pedagogical majors allows generalizing as follows: 1) students have weakly developed motivation for individual gaining knowledge, its systemizing and generalizing; 2) while studying, homogenous forms of individual work prevail (making notes, writing essays or reports, electronic presentations, solving typical practical tasks); 3) in in-class individual work, traditional forms prevail like making notes, making reports/presentations, oral poll, doing typical tasks/exercises; 4) students are to a greater extent acquainted with the traditional ways to control the results of the study (oral and written replies, testing), they also noted interesting modern ways of assessment (points/rating marks, making portfolios of academic performance).

4. Discussion

4.1. Initial positions of IWS organization under COA

The issues identified upon the results of the research are conditioned by preferences of the traditional knowledge paradigm of education, insufficient forming in students of value/sense-related attitude towards individual work, self-education and self-development skills, which required organizing IWS based on COA.

Meantime, we adhere to the methodic position: 'The basic task to organize individual work of students (IWS) is to create psychological and didactic conditions to develop intellectual initiative and thinking in any form of classes. Its goal is to teach a student to meaningfully and independently work with the teaching materials and then with scientific information, to lay the basis of self-organization and self-guidance to cultivate the ability to further continuously improve personal qualification' (Mulyavina, & Omelchenko, 2014, p. 79). In that connection, IWS content meets the understanding of the core competence as activity-related abilities of a student.

IWS content suggests building the academic process based on technologies, methods and forms of learning being a technological resource of competence-oriented education and, as opined by O.Yu. Pertseva, one of the most important ways to solve the task on implementation of competence-oriented approach in higher school (Pertseva, 2007).

4.2. Psychological and pedagogical conditions of IWS organization under COA

The experimental organization of IWS under COA in 2012-2015 met the following psychological and pedagogical conditions implemented in the education course:

- IWS was a targeted process of individual-oriented education based on developed professional basic training taking into account personal qualities and characteristics to meet understanding of the nature of competency – 'an individual's ability to integrate in mind knowledge on various subjects, various activities, accumulate personal experience, theory and practice to solve particular professional tasks' (Teslenko, & Zaleznaya, 2014, p. 41);

- IWS management actualized the significance of forming professional competency and ensured student-teacher interaction when teacher would create the conditions for self-education productive activity of students;

- IWS methodology and forms are based on interactive innovative methods contributing to the development of creative potential, critical thinking and need for self-improvement which is acknowledged by a scientific standpoint: '…the use of innovative teaching methods aimed not only to get professional knowledge but for personal development as well gives a true competitive advantage to a higher school graduate in the international market of intellectual workforce (Leontieva, & Timkina, 2014, p. 79);

- through guidance, a teacher, understanding reflection as an instrument to organize IWS as 'the basis to realize individual academic activity of students' (Fyodorova, 2010, p. 70), would contribute to actualization of learning reflection transforming into prospective one (analysis of future professional activity); meantime, problem-setting of individual cognitive activity of students, use of tasks with non-standard solutions, expansion of individual activity and self-control of results, self-analysis and mutual analysis of IWS were used on systematic basis;

- organized operational control task to diagnose the readiness of students to IWS, its perception as a means to form professional competency of a student, capable to stand professional leadership, including self-education and self-realization.

4.3. IWS tasks nature

IWS organization under COA also enhanced the actualization of professional skills and expertise, their deepening and expansion, generalizing and systemizing. In that connection, individual IWS tasks were developed under the principle of gradually growing comprehensiveness as illustrated by Table 2.

Table 2: Logic to make IWS tasks more comprehensive for year 2-3 students

IWS task	1 level	2 level	3 level
Making report diary	to generalize and systemize the studied materials	to generalize and systemize the materials from analyzed scientific articles, monographs, workbooks	to generalize and systemize the studied materials, to develop various sections of report diary

Making report	to analyze the studied materials and get them structured, named, to choose optimal distribution of basic notions	to explain the content of a theme, agree with the existing opinions, to argue the significance of the most substantial source from the recommended list	to analyze the papers read, making own offers, thoughts and conclusions, to refer them to the studied sources
Electronic presentation	to make thematic slides	to make thematic slides using video, graphics, music, hypertext links	plot-based structured presentation arranged for comfortable perception of information
Research work	to prepare message and related thematic thesaurus	to prepare and make out an article upon formulation of criteria of its quality	to develop term paper upon formulation of its quality criteria

We note that the system of IWS tasks with gradually growing comprehensiveness meets the current position: 'individual academic work is considered as a kind of learning activity suggesting some level of independence of students in any structural component – from problem-setting to control, self-control and adjustments, with a shift from the simplest kinds of work to more complex, search-related' (Kazantseva, 2013, p. 115).

IWS organization was also aimed to develop self-cognition, self-regulation, self-assessment, self-control, self-realization, thus accounting for individual abilities of students while doing various types of tasks and comprising their various kinds.

Reproductive individual work was done by students using methodological materials specifying the sequence of studying the content of a discipline; attention is focused on specifics of studying particular themes and sections; algorithms to solve typical tasks were submitted. In that context, individual work is identified as targeted activity within professional training of future specialists. Reproductive kinds of IWS: making glossary, making notes on extra references, answers to extra questions, filling in comparative tables ensure greater activation of information perception process, contributing to fuller adoption of the studied material, form in students own attitudes to particular issues.

Cognitive and search related (reconstructive) individual work concerns the fulfillment of tasks on transformation of information. Development of the thematic thesaurus by keywords from texts, writing essays, making denotation graphs, making diaries, preparing presentations create opportunities to develop information processing and generalization skills, i.e., applying knowledge in the situations close to the reality.

Creative individual work suggested the analysis of a problem situation, writing a review or a note on a fellow student's essay, transformation of the teaching information into notes, making a creative message on some topic, making

abstracts to articles of interest, writing scientific articles and independent choice of means and methods to solve tasks.

4.4. Nature of changes in conditions of IWS organization under COA

Individual completion of academic and professional tasks motivated students' attitude to IWS to change – as to a form of self-education, an integral component of professional education, as to a means to develop core (life) skills and to form professional competency. Such changes are objectively caused by the following: 'During transformation of supra-individual abstract informational way to transfer knowledge into 'living' subject-related academic and cognitive activity, individual work… is a principally new kind of learning in the modern higher school, personified in compliance with abilities and personal position of students towards studying' (Kupavtsev, 2014, p. 41).

The said is illustrated by the questionnaire results. The questionnaire covered 549 students of 2-4 years on majors 5V010100 'Pre-School Education and Training', 5V010200 'Pedagogics and Methodology of Elementary Training', 5V010300 'Pedagogics and Psychology'.

The questionnaire is as follows.

1. Which kinds of individual work were the most significant for your development? Give your own variants.
2. What motivated you in doing individual work most?
   A) update and deepen own views;
   B) apply available knowledge in practice;
   C) manifest creative abilities;
   D) get high assessment and admission to examination;
   E) show personal performance.
3. Which kinds of knowledge were the most interesting?
   A) reproductive;
   B) creative;
   C) research;
   D) team/group;
4. Which personal qualities helped you to do your individual work most?
   A) will;
   B) creative;
   C) organizational.
5. Which achievements do you have upon the results of individual work?
   A) development of subject-related skills and expertise;
   B) development of core skills;
   C) development of professional abilities and competences;
   D) development of research culture;
   E) development of independence as a personal quality;

Upon the results of questionnaire materials processing the following was identified:

- respondents of the three pedagogical majors admitted the most significant kinds of individual work: development of reference schemes (54.2%), making denotation graphs (54.8%), making mental maps (56.7%), writing essays (61.2%), annotating literature (63.6%), Web-quests (93.4%). Their choice is not occasional as those kinds of individual work suggested transformation of students from passive consumers of knowledge into active parties of the learning process.

- among individual work motives, the respondents noted the opportunity to get a high mark and admission to examinations (9.8%), showing own performance (16.1%), updating and deepening own views (18.7%), manifest creativity (26.5%), apply available knowledge in practice (28.9%);

- most students (83.7%) noted that the highest interest was aroused by team/group tasks. They enhanced the factor of motivation and mutual intellectual activity, improved the efficiency of cognitive activity of students in analyzing a problem situation;

- successful doing of IWS tasks was contributed by will (35.3%), implying enhancement of thinking, deep stable knowledge, strive for self-change; creative abilities were noted by 48.3% of respondents comprising making nonstandard decisions, generation of new ideas, development of cognitive processes; 16.4% noted organizational qualities in connection with IWS planning and stage by stage completion;

- the performance achievements upon IWS were distributed by respondents as follows: development of research culture (16.2%), independence as a personal quality (18%), core skills (20%), subject-related skills and expertise (21.7%), professional abilities and competences (24.1%).

5. Conclusion

Efficient development of students' self-education is determined by the quality of IWS in the structure of competence-oriented learning, which ensures efficient transition from academic and cognitive to individual practical professional activity to actualize development, self-development and self-realization of students' personality.

To achieve that quality, we offer IWS organization under COA.

Organization of IWS under COA is based on: a) self-value of students; b) conditioning of professional orientation of the educational content by future teaching activity; c) orientation of professional education to a student's individual experience; d) advanced nature of professional education; e) relation of professional education technology to the dependencies of professional establishment of a teacher's personality.

The result of IWS organization under COA is the following competences of future teachers in connection with the establishment of professional and core competences:

- generalizing, analysis, processing of large information volume;

- creative approach to solve professional teaching tasks;

- adaptation of activity in case of technology/organization/conditions change of individual work;

- individual research work using modern information systems;

- readiness to submit the results of own research activity in the form of reports, articles, abstracts, projects;
- skills of reviewing and analyzing the issues of a particular scientific area;
- ability to improve general cultural and professional level;
- ability to self-development, self-education, innovative activity.

IWS under COA is becoming a leading factor of the development of a student's personality, as in the course of individual activity students' creative motivation is manifested as well as individualization of learning and learning/research activity, reflexive self-positioning as a subject of activity, self-actualization, self-control, self-management and other personal qualities of future specialists.

Possible prospects of further research are related to the development of teaching technologies to form individual style of IWS under the conditions of integration of learning and scientific research activity of students.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

Abdymanapov, S.A. (2009). Sistema kreditnogo obucheniya, vektorno orientirovannaya na formirovanie budushchego spetsialista [System of Credit Education, Vectorially Oriented to Form Future Specialists]. *Doklady Kazakhskoy akademii obrazovaniya, 2*, 16-26.

Avanesov, V.S., Barer, G.M., & Brusenina, N.D. (2005). Novye formy nauchnoy organizatsii samostoyatel'noy raboty studentov [New Forms Of Science-Based Organization of Individual Work of Students]. *Cathedra, 4*, 44-46.

Aimaganbetova, O., Sagnayeva, T., Naurzalina, D., Aimaganbetov, A., & Shneider, V. (2014). Ponyatie i osnovnye determinatsii gotovnosti k professional'noy deyatel'nosti [Notion and Basic Determinants of Readiness to Professional Activity]. *Vestnik KazNU im. Al'-Farabi. Seriya psikhologii i sotsiologii, 3*, 3-13.

Burlakova, I.I. (2013). Osnovnye podkhody k traktovke kachestva obrazovaniya v Rossii i za rubezhom [Basic Approaches to Interpretation of Education Quality in Russia and Abroad]. *Innovatsii v obrazovanii, 1*, 35-39.

Gosudarstvennaya programma razvitiya obrazovaniya i nauki Respubliki Kazakhstan na 2016-2019 gody [State Program for the Development of Education and Science of the Republic of Kazakhstan for 2016-2019]. (2016, March 1). Retrieved June 14, 2016, from http://edu.gov.kz/sites/default/files/proekt_gpron_rus_0.pdf.

Gulyayev, V.N. (2014). Didaktika vysshey voennoy shkoly: postneklassicheskiy etap razvitiya [Didactics of Higher School: Post-Neoclassic Stage of Development]. *Mir obrazovaniya – Obrazovanie v mire, 3*, 10-18.

Guseva, V.Ye. (2008). *Organizatsiya samostoyatel'noy raboty studentov gumanitarnogo vuza po matematike s ispol'zovaniem Internet: avtoref. diss. kand. ped. nauk* [Organization of Individual Work of Students of a Humanitarian Higher School Institution in Mathematics Using Internet (Author's Abstract of PhD Thesis)]. Omsk.

Kazantseva, A.A. (2013). Sub"ektno-orientirovannaya model' organizatsii samostoyatel'noy raboty inostrannykh studentov v vuze [Subject-Oriented Model to Organize Individual Work of Foreign Students in High School]. *Alma mater. Vestnik vysschei shkoly, 6*, 115-117.

Kupavtsev, A.V. (2014). Ob"edinennaya kompetentnostnaya struktura osnovnoy obrazovatel'noy programmy i tekhnologii obucheniya v tekhnicheskom vuze [Uniform Competences Structure of the Basic Educational Program and Educational Technologies in an Engineering Higher School Institution]. *Alma mater. Vestnik vysschei shkoly, 6*, 35-43.

Kutukova, L.T., & Prokhorova, A.Ye. (2010). Organizatsiya samostoyatel'noy raboty studenta i modul'no-reytingovaya sistema otsenki znaniy studenta [Organization of Students' Individual Work and Unit/Rating System to Assess Students' Knowledge]. *Alma mater. Vestnik vysschei shkoly, 1*, 43-46.

Leontieva, Ye.G., & Timkina, K.V. (2014). Innovatsionnye metody obucheniya kak sredstvo povysheniya konkurentosposobnosti vypusknikov vuzov [Innovative Methods as a Means to Improve Competitiveness of Higher School Graduates]. *Innovatsii v obrazovanii, 10*, 75-80.

Mirzakhametov, M.M. (2010). *Formirovanie professional'nykh kompetentsiy budushchikh spetsialistov v usloviyakh realizatsii variativnogo soderzhaniya universitetskogo obrazovaniya: avtoref. diss. kand. ped. nauk* [Formation of Professional Competences of Future Specialists under Conditions of Implementation of Variative Content of University Education (Author's Abstract of PhD Thesis)]. Turkestan.

Mulyavina, E.A., & Omelchenko, I.N. (2014). Samostoyatel'naya rabota studentov kak sredstvo formirovaniya professional'nykh kompetentsiy [Individual Work of Students as a Means to Form Professional Competences]. *Innovatsii v obrazovanii, 3*, 76-82.

Pertseva, O.Yu. (2007). *Formirovanie professional'noy kompetentnosti budushchikh uchiteley tekhnologii i predprinimatel'stva: diss. kand. ped. nauk* [Formation of Professional Competency of Future Teachers of Technology and Business (PhD thesis)]. Novokuznetsk.

Plan natsii "100 konkretnykh shagov: sovremennoe gosudarstvo dlya vsekh [Nation's Plan '100 Concrete Steps: Modern State for Everyone']. (2015, May 20). Retrieved June 14, 2016, from http://edu.gov.kz/ru/100-konkretnyh-shagov.

Moiseev, A.M. (Ed.). (2001). *Proektirovanie sistem vnutrishkol'nogo upravleniya* [Designing Systems of Inter-School Management]. Moscow.

Teslenko, V.I., & Zaleznaya, T.A. (2014). Usloviya effektivnogo upravleniya sistemoy professional'noy podgotovki budushchego uchitelya v pedagogicheskom vuze [Conditions to Efficiently Manage the System of Professional Training Future Teachers in a Pedagogical Higher School]. *Alma mater, Vestnik vysschei shkoly, 9*, 40-44.

Tobagabylova, I.A. (2010). Osobennosti organizatsii samostoyatel'noy raboty studentov v uchebnom protsesse [Specifics of Organization of Individual Work of Students in the Academic Process]. *Pedagogika i psikhologiya, 1*, 158-161.

Ualiyeva, N.T., Murzalinova, **A.Zh.**, & Kucher, **T.P. (2016).** Competence-Oriented Independent Work of Students in Higher Education Institutions: Characteristics, Content and Organization. ***International Review of Management and Marketing, 6(S3)*, 146-155.**

Fyodorova, M.A. (2010). Filosofsko-psikhologicheskie osnovy uchebnoy samostoyatel'noy deyatel'nosti studentov [Philosophical and psychological basics of academic individual activity of students]. *Mir obrazovaniya – Obrazovanie v mire, 2*, 65-75.