LOOK ACADEMIC PUBLISHERS
OPEN ACCESS

INTERNATIONAL JOURNAL OF ENVIRONMENTAL & SCIENCE EDUCATION
2016, VOL. 11, NO. 8, 2197-2206
DOI: 10.12973/ijese.2016.560a

Professional Competence of a Teacher in Higher Educational Institution

Bakytgul Abykanova[a], Gulmira Tashkeyeva[b], Salamat Idrissov[a],

Zhupar Bilyalova[a], and Dinara Sadirbekova[c]

[a]Atyrau State University after Kh. Dosmuhamedov, Atyrau, KAZAKHSTAN; [b]Al-Farabi Kazakh National University, Almaty, KAZAKHSTAN; [c]Kazakh National University named after Abai, Almaty, KAZAKHSTAN

ABSTRACT

Modern reality brings certain corrections to the understanding of forms and methods of teaching various courses in higher educational institution. A special role among the educational techniques and means in the college educational environment is taken by the modern technologies, such as using the techniques, means and ways, which are aimed at student's active participation and involvement in the educational and mentoring process, i.e. using the interactive methods in education process. Educational environment, which is aimed at activation of students' creative activity on the basis of using interactive educational forms, methods and means, facilitates the development of students' knowledge and abilities to work with information sources, communication with the pedagogic process participants and development of problem-solving skills, i.e. leads to the development of the key competencies – informational, communicative and problem-solving competences.

KEYWORDS
Education, society, competence, teacher, technologies, educational and mentoring process

ARTICLE HISTORY
Received 21 August 2015
Revised 10 March 2016
Accepted 14 June 2016

Introduction

One of the most significant goals of education during the post-industrial society period, i.e. during the period of innovations and technologies development, is the transition from the paradigm of teaching (information sharing) to the paradigm of learning (sharing competences – stimuli towards actions). A teacher, no matter how good a specialist and a professional he is, will not be able to teach a student anything, if a student himself does not present initiative, does not strive

CORRESPONDENCE Bakytgul Abykanova ✉ bakitgul@list.ru

towards knowledge and does not want to become a professional, highly qualified specialist.

Modern society develops a social need in a generation, which is able to live and develop in the space of intellectually-intensive, scientifically-intensive and informationally-satiated technologies; it demands the development of a skill for navigating and acting in a constantly changing world of production, business, social and political life. In such society the ultimate meaning belongs not to the computers or machines, but to the knowledge and creative way of thinking.

President of the Republic of Kazakhstan, N.A. Nazarbaev, in his lecture in the Eurasian National University named after L.N. Gumilev, noted that we should aim at getting the quality and standards of life in Kazakhstan closer to the level of 50 most competitive countries. Moreover, the key competitive advantage of Kazakhstan on the global market should be highly qualified and mobile human resources, as well as constant introduction of innovations (Lecture of the President of the Republic of Kazakhstan, N.A. Nazarbaev in the Eurasian National University named after L.N. Gumilev). The President stated that competitive technologies, being the core of innovative economics, do not manifest themselves – it is a long-term process, a product of difficult process of scientific studies, complicated and expensive experiments and insight ideas of the scientists. Due to this, it is necessary to develop our own science and actively integrate its achievements in the production. Therefore, in the near future we will need thousands of highly qualified specialists and certified scientists in the new scientific and technical fields – biotechnologies, nanotechnologies, space activity and informational-communicative technologies.

Methods

Present-day teacher of higher educational institution in the conditions of education modernization has to be prepared and capable of conscious changes of stereotypes in his own behavior and professional actions. And for that the sole urge of the subject to "keep up with the time" is not enough; it is also necessary to have the ability for self-education, professional and personal self-development. It is hard to imagine mastering such skill without corresponding knowledge and abilities, which allow a person to grow professionally, to change behavioral characteristics, professional actions and habits, to be objective and certain in decision-making and to control his mental and emotional states.

Because of this, professional characteristics of college teachers more often begin to include the combination of personal and professional qualities and applied self-regulation skills, which are capable to define the level of personal and professional growth development. Moreover, professional development is inseparable from personal one, because both of them are based on the self-development principle, which determines a person's ability to transform his own life activity into the object of practical transformation. As a result of this, a personality reaches the top form of lifestyle activity – creative self-actualization.

Results

Integrating competence approach into the higher education system, which focuses on the education result in case when the result is considered not as a sum of the acquired information but as a person's ability to act in different situations, is aimed at improving the interaction with human resources market, increase of

specialists' competitiveness and update of the content, methodology and correspondent education environment. The new education paradigm implies the need to provide a student not only with a sum of knowledge, but also with a set of key competencies, which allow flexibly adapting in dynamically changing social and economic conditions and using the knowledge in creating new competitive products and services. Present situation requires the search for special education forms, which are necessary for preparing successful and demanded by the human resources market specialists, who possess certain personal qualities. In conclusion we would like to name a number of prioritized goals for improving professional competence of a college teacher: developing a program for educational and methodical supply of a new generation; defining education content and structure; and studying the nature of teachers' professional competence development in the professionalization process.

Discussion

Modern education analyzes the problem of the key competencies development – informational, communicative and problem-solving competencies.

Informational competence provides a student's abilities to manage information, which is contained in educational subjects, fields and also in the surrounding world. Real objects of information (television, recorder, telephone, fax, computer, printer, modem, copy machine) and information technologies (audio- and video-recording, e-mail, mass media, Internet) help developing the abilities to independently search, analyze and select the necessary information, organize, transform, save and share it.

Competence is a sum of necessary knowledge and personal qualities, which allow professionally approaching and efficiently solving the questions in the correspondent field of knowledge, scientific and practical activity.

Competence approach in education has recently become the object of active comprehension in pedagogic science and practice. Moreover, it is noted that scientific developments of the competence approach essence anticipate the education practice (Korsakova, 1997).

Basic categories of the new approach are the concepts of "competency" and "competence". The concept of "competence" is not only one of the basic pedagogic categories, but also an object of interdisciplinary study. Activation of researchers' focus on the questions of theoretical rationalization of competences and their practical development usually corresponded with the requirements from economics towards education development. During these periods research thought concentrated on revealing specific components in personality structure, which might have allowed it to adapt more comfortably towards social changes, to find internal resources for enriching knowledge potential and modernizing professional abilities and opinion orientations.

Modern pedagogics defines competencies as (Antonov, 1978; Bogdanovich, 2003; Mikhaylova (Aleshina), 2006; Ushakov, 2004; Chaklikova, 2007):

- personal component of the professionalism;
- result and criterion of the quality of specialist's preparation;
- practical representation of education content modernization;
- basic components of a teacher's pedagogic culture;
- a new approach towards constructing educational standards.

At the beginning of the XX century the problems of the content of teacher's professional competences gained the traits, which were not characteristic for them before.

Firstly, it is related to the changes of a teacher's social-professional role; now his goal is not limited to sharing a summary of knowledge. Considering uncharacteristically increased requirements towards a modern specialists' training, a teacher is aiming at creating such educational process conditions, which would facilitate students' awareness of the need for independent acquisition and modernization of the knowledge and for the consistent work on self-development and self-perfection.

Secondly, teacher's own knowledge, professional skills and competencies cannot be sufficient for the whole period of his pedagogic activity.

Thirdly, there are changes in the content of the key competences, which provide not only individual's survival in new social and economic conditions, but also success in his professional activity, its correspondence with the global standards and teacher's competitiveness.

Because of this, currently it is reasonable to talk about not only those competences, which were common for a specialist of a certain area and created a basis for his professional skill, but also about completely new competences, which still have to be mastered and the content of which is not completely defined yet. But the latter will characterize the image of a person of the future, a person of culture and the world.

Currently the concepts of "competence" and "competency" are defined the following way:

Competency is an integration of necessary knowledge and personality qualities, which allow professionally approaching and efficiently solving the problems in a corresponding field of knowledge, scientific or practical activity (Sorokin, 2005).

Competence is 1) a range of authorities and rights, which are provided by the law, decree or agreement to a specific individual or an organization in the solution of corresponding problems; 2) an integration of certain knowledge, abilities and skills, in which a person is an expert and in which he has practical work experience (Evgenyevoy, 1985-1988).

It is necessary to point out that the problem of defining the content and systematizing professional competences of a college teacher is determined not only by the social-economic and social-cultural changes in the society, but also by certain methodologic problems. While the researchers are actively interested in the "competence" concept, there is still no clear definition and mechanism of its development. It is also worth noticing that there is still no widely accepted single definition of the concept of "competence" or "key competence". There is also no single and unanimously accepted classification of competences. In other words, it is possible to evaluate a person's competence only as a result of his activity, according to the criteria that define its success or failure (Kunitsina, 2001).

Thus, one common thing for all of the competence definitions is the understanding it as a personality quality, a potential skill of an individual to cope with various tasks, an integration of knowledge, abilities and skills, which are necessary for performing a certain professional activity.

Communicative competence includes knowledge of the necessary languages, ways of interacting with the surrounding people and events, teamwork skills and ability to master various social roles in a group. A student has to be able to present himself, to conduct a discussion, to grasp the audience attention, etc.

Informational competence development is characterized by the need for solving problems, which require creative understanding and activation of student's cognitive capabilities. Communicative competence requires the creation of such educational environment, in which the students during communication would learn to develop communicative skills and raise the qualities of relationships culture. The problem-solving competence components are aimed at developing student's knowledge and skills for mobile solving of various tasks, which often demand cooperative actions, active thinking and creative approach (Spirkin, 1979).

The aim of modern education is to provide the development of students' skills for cognition, creative use of the acquired knowledge in any educational or life situation and readiness for self-development and self-regulation through the development of key competences. Students' active participation in the pedagogic process is a result of teacher's activity; therefore, activation of students' creative activity is possible upon their systematic integration in various types of educational and extra-curricular activity. Competence approach is oriented at organizing educational and cognitive activity by modelling various situations in different fields of a person's life activity. This approach prioritizes creative lessons, the main goal of which is to organize the productive activity, in contrast with the traditional ones (Bim-Bad, 2002; Guzeev, 2000).

Creative activity is actualized differently in different fields of material or spiritual culture – in the science, technology, production, art or politics. For example, the most significant result of creative activity in life sciences is a discovery. Presence of a contradiction in the content of the exploratory problem is essential for stimulating creative thinking. When the requirements are controversial, they lead to the presence of a problem, which demands creative approach to its solution, related to finding a new (original) constructive principle (Granovskaya&Bereznaya, 1991).

K. Bernard, a French researcher, said: "One should not fear controversies: each controversy contains a hidden sprout of a thought". Creating something new is inevitably related to rejecting the old – this is the essence of thought development dialectics. The majority of discoveries and inventions are the result of overcoming controversies. Discoveries often occur in a situation, in which paradoxes move the science forward faster than strictly sequential statements. The core of creative activity essence is related to the creation of a certain product (material or spiritual), which is characterized by being original, unusual and significantly different in shape and content from other products of the same intention (Zhelunitsyna, 2001).

In order to increase the activity and productivity of the creative activity, it is necessary to gain correct scientific understanding of creative thinking mechanism and its essence.

The process of solving creative tasks ultimately depends on the internal state of the inventor, which might be affected by psycho-heuristic activation, motivation and training of increasing perception, will and memory.

History knows many examples of the cases when people became scientists due to unexpected moments. It is the specific trait of logic and psychology of the creative activity: it instantly grasps the necessary from the random. Ch. Goodyear, author of vulcanized rubber, met a stranger in a dream, who told him to add sulfur into the rubber; D. Mendeleev saw his periodic table of chemical elements in a dream; I. Newton discovered the law of universal gravitation while seating under an apple tree when an apple hit him on the head. Creative discoveries of such nature are commonly attributed to a random chance. But there is no chance; it is the work of an algorithm – an algorithm of conscious work in a certain way. A "chance" will not lead to a desired result without constant creative exploratory activity and without the productive power of imagination. A person cannot explain where and when he gathered, piece by piece, that experience, which became a "starting ground" for his intuition and his creative insight. An important trait of intuition is an ability to notice patterns or something significant by observing hardly evident forms of their manifestation. Probably, an apple fell not only on Newton's head, but only he was able to draw the law of universal gravity from it (Slobodchikov, 1997).

The process of cognition and creative activity demands the mobilization of all mental powers from a person and is impossible without imagination. By its nature, imagination is closely related with thinking. Thinking process is not always performed in an explicit, logically proved way. An ability to understand the truth by directly seeing it, without rationalizing with a discussion, is called intuition. Intuition is not a separate mean of cognition but is solely its specific type, when separate parts of a logical chain remain at an unconscious level. This is a certain kind of an implicit logic of thought. Logic and intuition are equally significant, and both are inevitable. Heuristic power of the unconscious lies in the fact that it is free from stereotypes; it has more freedom for creating associative links, while logical thinking is dominated by historically-developed robust norms and habitual way of thinking, despite the fact that logical thinking possesses a certain amount of freedom. It is necessary to point out that in a creative process conscious and intuitive interact tightly, so that after a certain accumulation of information comes an insight, i.e. a sudden clarification of conscience, sudden realization of something, grasping of the situation elements in those links and relations, which guarantee the problem solution. Creative inspiration is a specific psychological state, which serves as a background for intuition. Inspiration is difficult to reach; in a way, it is an obsession with intensive manifestation of feelings, excitement, intellectual enthusiasm, which is able to anticipate the result of mental work by instantly passing through and jumping through its separate parts. In the words of W.A. Mozart, a composer hears all unwritten music in these moments; and as A.S. Pushkin said, for a poet:

"And thoughts inside the head are agitated in bravery,

And light rhymes are running towards them,

And fingers strive towards the quill, the quill – towards the paper,

One minute, and the poetry will flow freely."

But, as it turns out, no matter how powerful the imagination and intuitive insight are, they are not able to stand against conscious and rational acts in cognition and creative activity. All these spiritual forces of a person act in a unity, and only in each separate creative activity act one or another quality might prevail. Intuition of an experienced instructor, engineer or teacher is not a

miracle, but a result of creative search, information accumulation, experience, his view of the problem, creative actions and various and extensive practice. The solutions, which are suggested by the intuition, only look unexpected, but essentially are a result and a complex consequence of cognitive work and deep thinking (Spirkin, 1988).

Because of this we can suggest that creative activity activation, primarily, has to include a system of techniques, aimed at students' thinking activity in the process of their perception of the material proposed by a teacher. It is also necessary to have a clear idea of the problems, which techniques of material explanation provide the deepest acquisition and facilitate versatile development of students' thinking. Choosing the explanation techniques is defined by the level of students' development and the nature of the proposed material.

The process of activating creative activity can be rightfully considered a way of attracting students into the active creative activity; it might be presented in the form of specially constructed educational situations and tasks, solving which provides the students' upgrade to the following levels of creative activity. By doing various tasks, students understand the aim, structure and content of the task and anticipate the result. Therefore, from task to task a student accumulates experience and develops the skills of creative analysis of a problem.

Mindful cooperation of the pedagogic process subjects implies teacher's knowledge and ability to measure out and direct independence, which is given to the students and which, ultimately, leads to goal-setting and activation of their creative activity. During the education process the highest quality of perception and acquisition of learning material occurs as a result of interpersonal cognitive communication and interaction between all of the subjects in the pedagogic process. Such communication is based on the interaction mechanism, which means education, built on interaction and influence. The essence of interaction consists of direct interpersonal communication, the most significant trait of which is a person's ability to take the role of other, to imagine how the communication partner or a group perceives him.

Interactive learning is learning that is based on interaction of a student with educational environment, which serves as a field of the studied experience. It is based on the direct interaction of students and exchange of experience; new knowledge and ability develops upon such experience, and a student becomes a fully rightful participant of education- and mentoring process, while his experience serves as one of the main sources of cognition. In such learning a teacher does not provide complete knowledge, he stimulates the students towards independent search and development of a skill for analyzing each action and each step (Zhukov, 2005).

Traditional forms, methods and techniques of learning mainly imply teacher's activity in sharing the information. During the analysis of a lesson the main focus is upon the teacher, and the most significant is often missed – that is, successful acquisition of educational material depends on a student's activity. The process of personality-oriented education produces knowledge. Because of this, education is a creative and productive activity, during which a student himself not only acquires knowledge but also creates new knowledge and new subjective experience of creative activity. In comparison with the traditional educational, interactive education shows activation of learning activity in all of the pedagogic

process participants and grants the conditions for demonstrating initiative and creativity.

Interactive methods include the following: method of problematic presentation; discussions; group work; brainstorm method; methods of critical thinking development; mini-studies; business games; roleplaying games; interview, etc. Creating an interactive educational environment is one of the methods of organizing students' creative activity (Luneva, 2008).

The forms of creative activities activation include: problematic lectures and seminars, students' independent work and students' independent work with a teacher with the use of interactive methods of education; educational lessons-excursions; round table; practical and laboratory lessons with the elements of interactive learning. Forms and methods of students' creative activity organization might be different (student-student, teacher-student, work in pairs, group activity, etc.), but it is important that in all cases there is interaction between the pedagogic process participants, their cooperation and mutual assistance.

Creative activity is productive only in the conditions when the ideas can freely compete with each other, stimulating the opposing side and, therefore, facilitating the increase in thinking tension and its exploratory activity and mobilizing emotional and motivational fields of the conscience. Competition of ideas creates a specific creative environment, where "the ideas are flying in the air". Due to the creative activity, a personality develops and shapes. Creativity and personality are unified and inseparable.

Teacher's ability to reveal a student's internal resources by using interactive forms of education might provide constructive changes in the educational process, help the student evaluate his skills and possibilities, correctly define his place in life and open the ways for performing complete professional growth.

The result of students' creative activity mobilization is an independent initiative person, who possesses professional knowledge of his subject, a personality capable of using and implying the newest achievements of science and leading technology, a personality that has positive constructive energy (Bush, 1981).

In conclusion, it is possible to say that students' creative activity mobilization in college educational environment is a specifically organized process where the functioning of "student-student", "student-teacher" and "student-group of students" system is characterized by the interactivity of pedagogic process participants. It facilitates cooperative cognitive activity, responsible attitude towards studying, creative execution of educational tasks, reflectiveness and urge towards reaching positive results in education.

Integrating a complex of interactive learning methods in the pedagogic process promotes increased proportion of students' active independent work in the lessons structure, development of interest and motivation towards active educational activity, as well as increased working efficiency in students, which is characterized by the state of active wakefulness and selective attention. Summarizing the above-said, we would like to point out the following:

1. We mentor creative, i.e. socially active, personality. Active position in a community might be taken only by someone, who experiences emotional well-being. Because of this, it is necessary to constantly remember that

creative imagination works only upon a positive emotional background, and therefore, it is essential to provide favorable atmosphere in the educational environment of interactive learning.

2. Pedagogics of creation, primarily, is pedagogics of relationships. Dialogue of a personality with a personality is defined as successful only in a favorable psychological climate – an atmosphere of trust, cooperative search of truth, susceptibility towards new problems and new ways of solving them.
3. The main goal of the mentor is developing a skill of working in a selected field of activity. The acquired experience is constantly updated and selectively used in correspondence with the new creative tasks.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Bakytgul Abykanova Cand. of Pedagogical sciences . Of ACTING AS ASSOCIATE PROFESSOR at Atyrau State University after Kh. Dosmuhamedov, Atyrau, Kazakhstan.

Gulmira Tashkeyeva Cand. of Pedagogical sciences . Of ACTING AS ASSOCIATE PROFESSOR at Al-Farabi Kazakh National University, Almaty, Kazakhstan;

Salamat Idrissov Cand. of Pedagogical sciences . Of ACTING AS ASSOCIATE PROFESSOR at Atyrau State University after Kh. Dosmuhamedov, Atyrau, Kazakhstan.

Zhupar Bilyalova Cand. of Pedagogical sciences . Of ACTING AS ASSOCIATE PROFESSOR at Atyrau State University after Kh. Dosmuhamedov, Atyrau, Kazakhstan.

Dinara Sadirbekova PhD doktorant at Kazakh National University named after Abai, Almaty, Kazakhstan.

References

Antonov, A.V. (1978). Psikhologiyaizobretatelnogotvorchestva [*Psychology of Inventive Creativity*]. Kiev: Vishashkola.

Bim-Bad, B.M. (2002). Pedagogicheskiyentsiklopedicheskiyslovar [*Pedagogical Encyclopedic Dictionary*]. Moscow, p. 107.

Bogdanovich, N.V. (2003). Kategorialnyypodkhod k istoriipsikhologii. Sovremennayapsikhologiya: Sostoyanieiperspektivyissledovaniy [*Categorical approach to the history of psychology. Contemporary Psychology: Research Status and Prospects*], P. 4. Moscow: Izd-vo In-ta psikhologii RAN, pp. 203-216.

Bush, G.Ya. (1981). Analogiiitekhnicheskoetvorchestvo [*Analogies and technical creativity*]. Riga: Avots.

Chaklikova, A.T. (2007). Kategorii “competentnost” i “kompetentsiya” v sovremennoyobrazovatelnoy paradigm [Categories of "competence" and "competency" in the modern educational paradigm]. VestnikKazNU. *Seriyapedagogicheskienauki*, 2, pp. 9-16.

Evgenyevoy, A.P. (1985-1988). Slovarrusskogoyazyka [*Russian dictionary*], v 4 t. Moscow: Russkiyyazyk, p. 696.

Granovskaya, T.M., Bereznaya, I.Ya. (1991). Intuitsiyaiiskusstvennyy intellect [*Intuition and artificial intelligence*]. Leningrad: IzdatelstvoLeningradskogouniversiteta, p. 272.

Guzeev, V.V. (2000). Planirovanierezultatovobrazovaniyaobrazovatelnayatekhnologiya [*Planning of educational outcomes and educational technology*]. Moscow: Narodnoeobrazovanie, p. 240.

Korsakova, N.K. (1997). Neuspevayuschiedeti: neyropsikhologicheskayadiagnostikatrudnosteyobucheniya u mladshikhshkolnikov [*Underachieving children: neuropsychological diagnosis of learning difficulties in primary school children*]. Moscow.

Kunitsina, V.N. (2001). Mezhlichnostnoeobschenie [Interpersonal communication]. Sankt-Peterburg: Piter.

LektsiyaPrezidentaRespubliki Kazakhstan N.A. Nazarbaeva v EvraziyskomNatsionalnomUniversiteteimeni L.N. Gumileva [Lecture by President of the Republic of Kazakhstan N.A. Nazarbayev in Eurasian National University named after LN Gumilyov].

Luneva, O.V. (2008). Istoriyaissledovaniyasotsialnogointellekta [The history of the study of social intelligence]. Znanie. Ponimanie. Umenie, 4, pp. 177-182.

Mikhaylova (Aleshina), E.S. (1996). Metodikaissledovaniyasotsialnogointellekta. Rukovodstvopoispolzovaniyu [Methods of study of social intelligence. Instructions for use]. Saint-Petersburg: GP Imaton.

Slobodchikov, V.I. (1997). Obrazovatelnayasreda: realizatsiyatseleyobrazovaniya v prostranstvekultury. Novyetsennostiobrazovaniya: kulturnyemodelishkoly [Educational Environment: implementation of the goals of education in the area of culture. The new value of education: cultural school model]. Moscow.

Sorokin, N.D. (2005). Ob innovatsionnykhmetodakh v prepodavaniisotsiologicheskikhkursov [On innovative methods in teaching sociology courses]. Sotsis, 8, pp. 120-125.

Spirkin, A.G. (1979). O tvorcheskoysilechelovecheskogorazuma [On the creative power of the human mind]. Moscow: Progress, p. 352.

Spirkin, A.G. (1988). Osnovyfilosofii. Uchebnoeposobiedlyavuzov [Core philosophy. Textbook for high schools]. Moscow: Politizdat, p. 592.

Ushakov, D.V. (2004). Sotsialnyy intellect kak vid intellekta. Sotsialnyyintelleht: teoriya, izmerenie, issledovaniya [Social intelligence as a kind of intelligence. Social Intelligence: Theory, measurement, research]. Moscow: Institutpsikhologii RAN, pp. 11-29.

Zhelunitsyna, M. (2001). Produktivnayadeyatelnostdeteystarshegodoshkolnogovozrasta [Productive activity of children of the senior preschool age]. Doshkolnoevospitanie, 11, pp. 29-32.

Zhukov, G.N. (2005). Osnovyobscheyprofessionalnoypedagogiki. Uchebnoeposobie [Fundamentals of general vocational education. Tutorial]. Moscow: Gardariki, p. 382.