LOOK ACADEMIC PUBLISHERS
OPEN ACCESS

INTERNATIONAL JOURNAL OF ENVIRONMENTAL & SCIENCE EDUCATION
2016, VOL. 11, NO. 12, 5290-5298

Problems of Pedagogical Creativity Development

Shynar Ibragimkyzy[a], Tolkyn S. Slambekova[a], Yerlan E. Saylaubay[a] and Nazymgul Albytova[a]

[a]L.N. Gumilyov Eurasian National University, Astana, KAZAKHSTAN

ABSTRACT

This article provides analysis of research papers by different scholars, dedicated to topical issues of pedagogical creativity development in the educational process. The authors determined that pedagogical creativity could be considered at five levels: information-reproducing, adaptive-prognostic, innovative, research and creative-prognostic. In addition, this study highlights the main features of teachers' creativity and describes the psychological and pedagogical factors that negatively influence creativity development in students of professional-pedagogical specialties. Practical significance of this paper is determined by the fact that the authors offered a pedagogical model describing creative potential development of the personality in the course of research activities.

KEYWORDS
Educational process, pedagogical creativity, creative potential, research activity of the future teachers, creativity development

ARTICLE HISTORY
Received 7 March 2016
Revised 18 April 2016
Accepted 22 April 2016

Introduction

In today's world, creative ideas, creative activity are the most profitable areas of human activity (Savic, 1923). Therefore, identification of creative individuals, as well as development of creativity fundamentals is an urgent task of psychology and pedagogy (Ismuratova, 2016).

Educational processes in the Republic of Kazakhstan are characterized by permanent dynamics, being responsive to social changes (Turgynbaeva, 2006). However, at the same time, modern education, based on the Law of the Republic of Kazakhstan "On education" (Kazakhstan, 2007), the State Program of Education Development of the Republic of Kazakhstan for 2011-2020 (The State Program for Education Development of the Republic of Kazakhstan for 2011-2020, 2010), requires social activity of teachers and creative activity of students.

CORRESPONDENCE Shynar Ibragimkyzy ✉ shynar-140183@mail.ru

Thus, there is a certain social order to improve social creativity as a basic resource of the state.

One should note that today human labor content is determined not only by the degree of its intensity, but also by the level of creativity (Runco, 2003). Moreover, one can observe an objective trend – social development leads to a decrease in the amount of physical work and to an increase in the intellectual and creative processes. The assessment of work and workers changes as well. Creative work and, therefore, creatively working people become more significant (Ramsky, 2005).

Taking into account individual social status, creativity should be considered in relation to human activities, which transform the natural and social world in accordance with his/her objectives and requirements based on the objective laws of reality in the context of socio-historical practice (Abulkhanova-Slavskaya, 1983; Kaufman, Beghetto & Dilley, 2016).

However, despite a huge amount of research works in the field of creative psychology and pedagogy, one can note lack of a coherent concept that could meet today's requirements of philosophic, art historical, psychological and pedagogical thought. Questions referring to the sources and determinants of creativity, the relationship of personality and creativity were little studied; there is no single vision of the concept related to the creative potential of the personality and to the conditions required for creative self-fulfillment (Uzakbaeva et al., 2013).

Background Paper

Creativity-related studies were most intense in the first third of the XX century. (Ilyin, 2009). For example, V.M. Bekhterev (1924) considered creativity in terms of reflexology. Creative problem was regarded as an irritant. This stimulus gives rise to the concentration reflex. This reflex in turn triggers favorable mimic-somatic reflex. As a result, the rising energy is provided by the action of internal secretion hormones and vasomotor activity, which stimulates brain activity. Focusing combined with mimic-somatic reflexes form the brain dominant. The latter attracts excitement from all other brain areas and suppresses other brain activity processes not related to the stimulus. Actually, creative work is a response to a stimulus. Creativity results in a set of reflexes. Creativity was also studied by the physiologist V.V. Savich (1923), who considered creativity as the emergence of new conditioned reflexes by means of previously formed links (Karpenko, 1985).

Hence, the above works were dedicated to either natural-philosophical reflection of the role of creativity as a mechanism responsible for the development of nature and humankind or to the scientific and technical creativity. In this regard, J.A. Ponomarev (1976) noted that those works were not determined by social needs related to creativity management; they were rather determined by curiosity of individual researchers. Afterwards, until the mid-XX century research creativity was not profoundly studied.

The technological revolution that occurred in the middle of the XX century, gave impetus to the study of creativity patterns, which has become a productive force, having a significant impact on the economy. The question of finding people capable of scientific and technical creativity was high on the agenda. This gave rise In 1950s, primarily in the United States this gave rise to numerous studies

aimed at finding the criteria of creativity, ways of its development and identifying creative individuals (creative ideas). All these aspects can be considered as a problem of creativity management (Ilyin, 2009).

Professional creativity of teachers was studied by a number of Russian and foreign researchers, who considered professional self-determination in terms of individual needs, their regulation and creative activity. Thus, their research findings covered the following issues: development of the concept referring to the teaching and creative activity (Kadirbaeva, 2010; Csikszentmihalyi & Wolfe, 2014); description of pedagogical creativity features (Kan-Kalik, 1976; Kan-Kalik & Nikandrov, 1990, Kuzmina, 1990); justification of creative nature of research activities (Shumilova, 2006; Torgashina, 1999); consideration of creative activity as a reflection system (Andreev, 1988).

One should note that both theoreticians and practitioners of modern pedagogy agree that professional development of the teachers' creativity could be more effective provided the teachers' reflective attitudes are regarded as a necessary condition for the establishment and perfection of his/her creative activity (Giglio, 2015; Koldina, 2009; Kulikova, 2000). This concept became the foundation of guidelines aiming at the creativity development in students of professional-pedagogical specialties (Torgashina, 1999; Kemerova, 2002; Ibryanova, 2003).

Research Purpose

The purpose of this study is to identify problems in the development of pedagogical creativity at the present stage and to describe ways of their solution.

Research questions

This study implied the following research questions:

Which psychological and pedagogical factors have negative impact on creativity development in students of professional-pedagogical specialties? What pedagogical conditions aimed at the development and implementation of student creative potential should be provided for the future teachers during their research activities?

Method

Research methodology was based on the historical and chronological analysis of pedagogical and psychological literature.

Data, Analysis, and Results

Training future professionals aimed at the development of their creative thinking through research activity presents a complex problem. However, despite certain achievements in this area, methodological principles of pedagogical creativity development by means of university-based research activities were insufficiently developed.

Modern teacher often defines himself/herself as a practitioner. His/her work is manifested mainly in the creation of practice-methodical product, which changes the pedagogical technology of training and education. Successful development of teachers' professional creativity is also determined by methodological knowledge (Zagvyazinsky, 1987; Kemerova, 2002; Turgynbaeva, 2006).

Berdyaev (1989) believed that creativity was the only activity that determined people as human beings. According to V.T. Kudryavtsev (1990), "since the time of Aristotle, the nature of the soul, psyche and human consciousness were determined by the ability to freely navigate and act in uncertain situations involving search and development of such modes of action that would be compliant with the logic of the future, i.e., with a special universal human creative activity" (Ilyin, 2009).

Interpretation of creative activity as a productive activity determines its specific features, such as usefulness (value) and novelty (originality). However, it should be clarified that usefulness is not a specific feature of creative activity; it is inherent in reproductive activities as well. However, underestimation of usefulness can negate all creative efforts. Novelty (originality) presents the hallmark of creativity. Nevertheless, it is not an end in itself, and its idealization isolated from its social utility results in fanciful and controversial innovations that cannot be widely used.

The teaching dictionary defines creativity as an activity which results in the creation of new, original and more advanced material and spiritual values, having either objective or subjective significance (Short Pedagogical Dictionary, 1985). In other words, creativity is a measure of the deep and comprehensive knowledge of the teacher and their interpretation; the ability to transform theoretical and methodical positions in educational activities; self-improvement and self-education, development of new techniques, forms, techniques, tools and their original combinations, improvisation abilities based on knowledge and intuition.

Creativity, especially scientific and artistic is connected with the creation of a new product, assessed by the society. Therefore, the creator seeks to create the best possible product for the benefit of society, as well as proceeding from personal satisfaction and prestige. Scientific creativity, as opposed to the artistic one, presents activities aimed at the production of new knowledge along with its subsequent public approbation and scientific implementation. Creativity in science requires, above all, the acquisition of a fundamentally new, socially significant knowledge; this has always been the most important social function of science. Creative activity can be divided into two stages: finding the principle of solutions and the application of relevant solutions (Shumilova, 2006).

In addition, scientific creativity is impossible without highly developed general and professional intelligence, spatial thinking and imagination, learning and business communication abilities, i.e., such creativity is impossible without social activity of the person. Creative work requires autonomy, flexibility; focus on the formulation and solution of problems, imagination, combination abilities and other analytical and synthetic thinking abilities, as well as perseverance, self-confidence, thirst for knowledge, pursuit of inventions and experiments, willingness to take risks (Torgashina, 1999).

In this respect, K.A. Abulkhanova-Slavskaya (1983) considers three types of knowledge acquired by people: discovery of a new empirical fact; deduction of notions and judgments referring to certain theories that empirically have not been established; formation of new concepts and judgments (scientific principles and statements), which require modification of the existing theoretical concepts.

According to N.S. Shumilova (2006), scientific creativity can be expressed in discovering something new that really exists, not known before by the science; in

the finding something that did not exist before and hence it was not known to science; in discovering historical facts and documents; in the new scientific verification of an idea, and so on. Thus, research results are considered new if they significantly broaden and deepen the existing knowledge of objective reality and its properties. Therefore, new material manifests itself in various forms: discovery of the previously unknown objective fact, establishment of a new law, development of a new theory, formation of a particular style of thinking and the emergence of new research paradigms. Creative process should also include the use of scientific discoveries and solution of practical problems using scientific tools.

In addition, scientific work has a special, playful attitude to reality, to itself, the ability to perform dialectical negation, ironic overcoming the established norms, rules, skepticism. The creator needs to go beyond the existing being created both by nature and by people (Ilyin, 2009).

V.I. Andreev (1988), defining creativity as a type of human activity, notes a number of features that characterize it as a holistic process:

- Contradictory nature of a problem situation or a creative task;
- Social and personal importance and progressiveness, which contributes to both social and individual development (antisocial activity, even in its most ingenious form presents barbarism, not creative work);
- Presence of objective (social, material) prerequisites and conditions required to provide creativity;
- Presence of subjective (personal qualities - knowledge, skills, especially positive motivation, personal creative abilities) premises of creativity;
- Novelty and originality of the process or result.

Exclusion of only one of the above-mentioned features will eliminate the creative activity, or such an activity will not be called creative.

Conceptualizing a number of features that characterize creativity as a kind of human activity, one can identify the main features of teacher creativity. These include the following:

- Good command of scientific analysis and synthesis;
- Ability to introduce science into practice;
- Vision of the fundamental ideas related to the implementation;
- Ability to develop scientific and practical methods (tools) aimed at this implementation;
- Ability to distinguish ideas in the experience of other teachers, which were successfully used in gaining professionalism;
- Ability to use the experience of other teachers in relation to one's own working conditions;
- Ability to predict and extrapolate productive teaching activity, creating pedagogical innovations and technology;
- Forecasting optimum performance results by means of visionary movement to the "unknown" ("leap into the unknown");
- Ability to adjust, to reconstruct one's own activities with due regard to the changing social and regional conditions;

- The ability to create the mental image of an optimistic result and to reach most relevant results in practice;
- Flexibility in pedagogical work: the ability to take better decisions in specific situations;
- Going beyond the resulting system of knowledge (examination of phenomena from a different perspective, the ability to restore the connection between the phenomena, the ability to distinguish common features between separate facts, etc.);
- Ability to resist pedagogical conservatism, to overcome unjustified or harmful stereotypes in education;
- Ability to transfer knowledge under various educational situations and conditions;
- Ability to develop the desire for innovative productivity in the student work.

Manifestation of pedagogical creativity is determined by the activity structure and encompasses all its aspects: structural, organizational, communicative and gnostic. However, teaching creativity demands a number of conditions:

- "Time-compressed" creativity: short time intervals between tasks and ways to resolve them;
- Conjugation of teacher's creativity with student creativity and with creativity of other teachers;
- Delay of outcomes and the need for its prediction;
- Public speaking environment;
- Need for constant correlation of standard teaching methods and atypical situations".

Objective character of creativity is assessed by the results of pedagogical activity (depth of student knowledge of their interests and values, the degree of readiness for self-education and self-improvement). The subjective side of the creative process is based on its process (Levko, 2004).

Features of pedagogical creativity include the highest activity of the teacher and his/her spiritual life, sense of new ideas, taste for innovation, search for non-standard solutions of pedagogical problems, continuous professional self-improvement through study and practical application of teaching achievements.

The levels of pedagogical creativity are considered with regard to the developed ability to analyze one's personal work and its quality indicators:

- The first (information reproducing) level: the teacher can use the experience of other teachers, solving simple problems on the way towards the result; he/she is able to analyze the effectiveness of decisions in specific situations. This level describes a teacher without a category.
- The second (adaptive-predictive) level: the teacher is able to transform the information known to him/her, to select techniques, means and methods of interaction with the students based on their personal qualities. This level of teacher activity refers to the second category.

- The third (rationalization) level: the teacher shows the ability of rationalization (high efficiency of his/her experience, the ability to deal with complex, non-standard educational tasks and to find optimal solutions). His/her work includes elements of individuality and originality. This level corresponds to the teacher of the first category.

- The fourth (research) level: the teacher is able to determine conceptual basis of his/her own research, to develop his/her own system of activity based on studying its results. This level corresponds to the highest teachers' category.

- The fifth (creative and predictive) level: the teacher is able to set super-tasks and to justify their solutions; he/she is able to introduce significant changes into the education system, to transform it and mastering diagnostic mechanism to move from the illogical to the logic of fixed stereotypes. This is the level of the extra-class teacher-class" (Ponomarev, 1976).

The essence of a creative approach to teaching is seen in the ability to set problems and solve them by non-traditional methods, producing something qualitatively new, different in uniqueness and originality. Creative approach implies using the apparent experience under new conditions, the ability to improvise, based on knowledge and intuition. The teacher has to set a creative task, which solution lacks a well-developed theory.

In other words, creativity presents the result, and at the same time, the important condition for further development of the individual and his/her creative potential. Activity results of creative teachers are always different by their quality, novelty, originality and uniqueness.

Given current educational requirements, the authors of this paper believe that pedagogical work cannot be uncreative, because children are unique; the circumstances and the teacher personality, any his/her decision should consider these unusual factors. M.A. Runco (2003), M. Csikszentmihalyi & R. Wolfe (2014) note that today "lifelong learning" filled with creative attitude to the chosen activity is required instead of basic education, which served as the basis of all human professional activity. This logic is fully applicable to the professional work of future teachers.

Discussion and Conclusion

There is no single definition of the concept of creativity in academic writings. It can be viewed not only as the process of creating something new, but as a process that occurs in the interaction between the personality (or the person's inner world) and the reality. The changes occur both in reality and in personality (Levko, 2004).

In this regard, V.I. Andreev (1988) notes: "Personality is characterized by the subject's activity, his desire to expand the scope of his activities, to act beyond the required limits of the situation and role requirements; by orientation as a sustainable system of dominant motives - interests, opinions, etc...".

S.L. Rubinshtein describes creativity as "human activity, which creates the new material and spiritual values that have social significance" (Ilyin, 2009). At the same time, N. Kuzmina (1990) considers this concept, emphasizing the importance of creative aspects in teachers' work. She believes that pedagogical work can be considered fruitful provided its focus on the ways to prepare

students for life and future activities, ways of teaching self-education, self-organization and self-control.

In this sense, the concept of teacher productivity is close to the vision expressed by S.I. Ismuratova (2016): categories of pedagogical activity optimization as a purposeful selection of the best teaching and learning option by the teacher, which provides most efficient solutions of education and training challenges and during relevant time.

Therefore, the concept of pedagogical creativity can be defined as self-fulfillment of the individual, psychological, intellectual forces and abilities of each teacher.

Historical and chronological overview of pedagogical and psychological literature showed that self-reflection tool of professional-creative activity of teachers is not implemented in modern educational practice, although it is theoretically substantiated in many scientific papers.

The paper describes the impact of the creative process on the professional development of the future specialists. The authors determined levels of student creativity development in terms of scientific research activities, identified its prerequisites, factors, criteria, laws and principles; suggested productive ways and means aiming at the development of creativity in the course of research activities. The authors also developed a pedagogical model describing the development of personal creative potential in the course of research activities.

Implications and Recommendations

Research findings suggest that many pedagogical creativity challenges remain unsolved. Thus, these findings can become the basis for subsequent studies on the improvement of the existing and creation of new approaches to the development of pedagogical creativity in modern educational process.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Shynar Ibragimkyzy holds a Researcher of Department of Social Pedagogy and Self-knowledge, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan.

Tolkyn S. Slambekova holds a PhD, Associate Professorof Department of Social Pedagogy and Self-knowledge, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan.

Yerlan E. Saylaubay holds a PhD, Associate Professor of Department of History of Kazakhstan, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan.

Nazymgul Albytova holds a PhD at Social pedagogy and self-cognition Department, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan.

References

Abulkhanova-Slavskaya, K. A. (1983). *Personality Activity and Psychology*. Moscow: Nauka, 335 p.

Andreev, V. I. (1988). *The Dialectic of Education and Self-education of Creative Personality. Basics of Pedagogy Work*. Kazan: Kazan University, 229 p.

Bekhterev, V. M. (1924). *Creativity From the Standpoint of Reflexology*. Leningrad: The Genius and Creativity, 280 p.

Csikszentmihalyi, M. & Wolfe, R. (2014). New Conceptions and Research Approaches to Creativity: Implications of a Systems Perspective for Creativity in Education. *In The Systems Model of Creativity*, 161-184. Springer Netherlands.

Giglio, M. (2015). *Flexible and Creative Pedagogical Sequences*. London: Palgrave Macmillan UK, 264 p.

Ibryanova, O. V. (2003). *Preparation of Pedagogical Higher School Students for Research Activity Under the Multilevel System of Higher Education:* PhD Thesis. Barnaul, Russia, 230 p.

Ilyin, E. P. (2009). Psychology of Creative Work, Creativity and Talent. St.Petersburg: Peter, 434 p.

Ismuratova, S. I. (2016). Formation of the Future Specialists' Pedagogical Creativity. *Indian Journal of Science and Technology, 9(22),* 48-56.

Kadirbaeva, R. I. (2010). *Scientific and Pedagogical Bases of Professional Training of the Future Teachers for the Development of Creative Abilities in Schoolchildren:* PhD Thesis. Almary, 315 p.

Kan-Kalik, V. A. (1976). *Educational Activity as a Creative Process*. Grozny: Chechen-Ingush book Publishing, 286 p.

Kan-Kalik, V. A. & Nikandrov, N. D. (1990). *Teacher Creativity*. Moscow: Education, 144 p.

Karpenko, L. A. (1985). *Short Psychological Dictionary*. Moscow: Politizdat, 165 p.

Kaufman, J. C., Beghetto, R. A. & Dilley, A. (2016). *Understanding Creativity in the Schools. In Psychosocial Skills and School Systems in the 21st Century*, New York: Springer International Publishing, 401 p.

Kazakhstan, Z. R. (2007). On Education. *Kazakhstanskaya Pravda, 15,* 8-10.

Kemerova, L. V. (20020. *Development of Teacher Professional Creativity*: PhD Thesis. Ekaterinburg: Russia, 201 p.

Koldina, M. I. (2009). *Preparing for the Research Activity of Future Teachers of Professional Training in Higher School*: PhD Thesis, Nizhny Novgorod, Russia, 156 p.

Kulikova, L. N. (2005). *Pedagogical conditions of creativity development in the future teachers by means of research activities*: PhD Thesis. Moscow, Russia, 201 p.

Kuzmina, N. V. (1990). *Professionalism of the Teacher Personality and the Master of Industrial Training*. Moscow: Higher School, 225 p.

Levko, A. I. (2004). Pedagogical Work and its Socio-cultural Foundations. *Education and Training, 9*, 33- 44.

Ponomarev, J. A. (1976). Psychology of Creativity. *The Science*, *5*, 33-35.

Ramsky, Y. S. (2005). Changes in Professional Activity of Teachers in the Context of Informatization. *Bulletin of Russian Peoples Friendship University*, *3*, 121-133.

Runco, M. A. (2003). Education for Creative Potential. Scandinavian *Journal of Educational Research, 47(3),* 317-324.

Savic, V. V. (1923). Creativity in Terms of Physiology. *Creativity, 1*, 257-264.

Shumilova, N. S. (2006). *Research Activity as Means of Creative Potential Development of the Future Teachers of Technology and Business*: PhD Thesis. Armavir, 213 p.

The State Program for Education Development of the Republic of Kazakhstan for 2011-2020. (2010). *Approved by the decree of the President of the Republic of Kazakhstan dated December 7, No 1118*. Astana, 34 p.

Torgashina, T .I. (1999). *Research Work of Pedagogical High School Students as Means of their Creative Potential Development*: PhD Thesis. Volgograd, Russia, 299 p.

Turgynbaeva, B. A. (2006). *Formation of Creative Potential of Teachers In System of Improvement of Professional Skill* (Doctoral dissertation). Almaty, Kazakhstan, 320 p.

Uzakbaeva, S., Baimukhanbetov, B., Berkimbaev, K., Mukhamedzhanov, B. & Pralieva, R. (2013). To the Problem of Forming Creative Competence of Future Teachers. *Creative Education*, *4(3),* 234.

Zagvyazinsky, V. I. (1987). Pedagogical Work of the Teacher. Moscow. Pedagogy, 317 p.