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## **CURRENT TASKS OF EDUCATION DEVELOPMENT FOR SUSTAINABLE DEVELOPMENT OF PEDAGOGICAL SCIENCES**

This article shows the analysis of educational development of current pedagogical sciences in a sustainable way. Methods of improving and increasing efficiency pedagogical scientific research has been examined. Sustainable educational development is a new, innovative way of changing system that avoids application of current methods, technologies. In this sustainable search, there are couple of questions that needs to be addressed: «What to teach, how to teach, and why to teach?». In order to find answers, theoretical background is required.

**Keywords:** sustainable development, science, education, technological and scientific development, pedagogy.

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## **АКТУАЛЬНЫЕ ЗАДАЧИ РАЗВИТИЯ ОБРАЗОВАНИЯ В ИНТЕРЕСАХ УСТОЙЧИВОГО РАЗВИТИЯ ПЕДАГОГИЧЕСКИХ НАУК**

В статье рассматриваются актуальные проблемы современных педагогических наук, связанные с устойчивым развитием сферы образования. Определяются и выявляются наиболее перспективные направления повышения продуктивности научно-педагогических исследований. Образование в интересах устойчивого развития является глобальной инновацией, изменяющей систему современного образования. Необходима разработка дидактики устойчивого развития, в частности, поиска ответов на основные вопросы дидактики: «Зачем, чему и как учить?». Такие изменения требуют теоретического обоснования, откуда вытекает необходимость последовательного сокращения массовой доли концептуально вторичных и недостаточно практико-ориентированных исследований.

**Ключевые слова:** устойчивое развитие, наука, образование, технологическое и научное развитие, педагогика.

**Introduction.** Sustainable development has been of significant importance in politics, economy, environmental science for past couple of decades. In fact, this first scientific idea has been accepted by wide ally of people [1, p. 13–17].

There are new guidelines in science and education field in Kazakhstan; the new rules are in «Strategy for the scientific and technological development of the Republic of Kazakhstan», confirmed by Decree of the President of the Republic of Kazakhstan on December 1, 2018, № 642. The paperwork states: «...there is very weak relationship between research/development and current, real economical field» [2, p. 5], and that makes evaluating scientific structure's efficacy even more critical; «...national economy and society's development is very important» [2, p. 13]. That requirement has become a sort of guideline to tackle the issues in pedagogical theory and practice, and setting right aims and priorities in pedagogical science [3, p. 2–10]. A natural environment of education's developmental pace is greatly different in

industrial education, as it has varying aspects in methods, approaches, organizational spectra's, contents, etc.

Due to every day changing global, technological, social media trends, educational system is changing also. When humans want to develop both mentally and rationally, they use educational tools. In this context, sustainable education is developing simultaneously with the theoretical and practical sustainability improvements. New sustainable educational system develops with the new cultural type.

Sustainable educational development has been transforming current education system, including its forms, goals, methods of teaching, content. Currently, unfortunately, sustainable education is only being developed in theory and a bit in practice. This type of education. Mainly focuses on integrating many areas, improving life's quality for present and future generations. One thing we have to remember about sustainable education is that it does not have any limits, rather, it is very broad, wide and have no boundaries; meaning, we could use not only current educational technology or subject teaching methods, but also tools outside of these things. Here, maybe we could develop theoretical background for sustainable education, as it is a new trend and has not been explored much, and name it didactic's. There are couple of questions that need to be addressed in didactic: «What to teach, how to teach, and why to teach?». In order to find answers, theoretical background is required.

Let us first answer to these questions: «Whom to teach? Where to teach». Nowadays, only graduating with bachelors' degree is less common, rather pursuing degrees in masters', and doctoral, or even post-doctoral aspects are becoming normal. The Kazakh national strategy of sustainable educational development was written in 2005, and it states 2if we could use sustainable educational system, it would help us improve in the following areas: preschool, primary, secondary, undergraduate, graduate, and postgraduate education 2 [4, p. 55]. However, where to teach place of teaching, and has been explored well. Therefore, the place of study is not only limited

to school, or any other official office area, in fact, educational environment means equal opportunity for all students [5, p. 17]. So teachers could teach at houses, families, through mass media, social media, television, society, etc. Hence, sustainable education is a lifelong learning; and everyone (not limited by age, race, nationality, gender) can study using all educational and informational opportunities.

The next question is «Why teach?». The answer could be obvious to help provide sustainable, intellectual development of our society, nation, environment, and perhaps, economy. As it has been stated in Republic of Kazakhstan's educational sustainable strategy, 2 final aim of this sustainable educational system is to develop a healthy mindset, civic position in people that could be passed from generation to generation in a non-deteriorated state and beginning for entire life of society 2 [5]. D.S. Ermakov investigated a number of pedagogical studies, and concluded what education for sustainable development is. According to him, «it is a process, and a final result should be predicting and changing human qualities (knowledge, skills, and communities), increasing the quality of life within the natural capacity of natural environment» [6, p. 54–61]. However, there should be more work to be done in order to obtain these expected outcomes, and every student should be able to measure, achieve in a specific deadline, these learning objectives. Because these learning aims are personalized for each student, now, students could get results in their own pace, in a way that they understand most, and in a way that is most effective for each individual. This could be an answer for: «How to teach».

In the Report on the state of fundamental sciences of the Republic of Kazakhstan, approved by the General Meeting of Members of the Kazakhstan Academy of Sciences on March 23, 2016 [7, p. 15], it is noted that currently in Kazakhstan science there is not only a decrease in the quality of scientific research, but also their professionalization, which especially noticeable in the social and humanitarian sphere. Therefore, among the most promising areas for the development of social and humanitarian knowledge, including pedagogical sciences, should include a multidimensional assessment of the materialize and measurably of the results of scientific activity, excluding the growth of the number of works that are not

significant for the development of the system of scientific knowledge. It should be noted that various branches of education, for example, pedagogical education, education in the field of culture, and art, medical education, etc., are fundamentally different in their needs for scientific and theoretical support in the form of connection between theory and practice, so if education in the sphere of culture and arts need, first of all, to preserve the accumulated potential and traditions, then pedagogical education, like medical education, on the contrary, requires the closest connection of educational activity with scientific research in the fields of activity provided. At the same time, the realities of modern vocational education, for example, in the pedagogical industry, demonstrate the absolute dominance of scientific research, rather than the introduction of innovative sectorial content, which is undoubtedly counterproductive, given the sophistication of pedagogical practice and the related to stagnation of pedagogical scientific research. For more than a decade in the domestic branch pedagogy of education, there has been an unjustified duplication of topics, petty topics are growing, scientific research increasingly represents an unproductive concretization of long and well-known approaches.

The self-sufficiency of theory, the separation of theory from practice are cross-cutting problems for any sciences, but it is in the humanitarian sphere that they often reach the level of complete autarchy, which determines the existence of a cluster of studies that not only make no contribution to practical activity, but also do not have a pronounced theoretical significance [8, p. 1–6], [9, p. 157]. At the same time, pedagogical sciences are one of the most quantitatively productive groups of sciences, and forms a constantly grown stream of scientific publications, only a small part of which reflects the urgent tasks of improving education and upbringing and can be applied in practice with a real measurable result. This is what determines the need to determine the directions, and means of overcoming the problematic situation in pedagogical sciences, designed to serve the needs of education, in the structure of which industry-specific vocational education is of particular value due to its importance in the innovative development of the country's economy.

One of the main aspects in sustainable education is avoiding knowledge transfer. Even though people nowadays do understand negative consequences of its activities, do understand that they need to follow ethical standards, but people do not really connect this knowledge and understanding with their real actions. Hence, we have to have deeper meaningful understanding of theoretical knowledge with the subsequent actions. And that every action does have consequences, positive or negative [10, p. 122–143]. Therefore, for our current society to know overall meaning of sustainable development, its ideas, and developing necessary skills and abilities that are needed for sustainable development. Currently, even though young generation are more concerned with social media, You tube video contents, sustainable education should be naturally and smooth be involved in this people lives.

Integrity principle has been well-developed, though not fully incorporated in our Kazakh nation's life. In fact, the principle has been developed over more than a century of history. Design thinking ability has been improved, and it means to think ahead, what would happen in the near future. The process of design thinking involves searching information about an object, searching data about its current development, its external and internal connections, and the future state. And among many youths, the one who can develop correct design thinking, who can imagine what happened in the past and in the future, who can reflect, who can separate intermediate and final desired results, who can come up with new ideas, predict results of his activities, as K.V. Sosnovskaya said they are called «Homo projectus» [11, p. 29].

To switch from current educational system into sustainable development, individual has to act and get used to this rapidly changed environment, to take part in the newly formed social development, to kind of predict consequences of his decisions and actions taken to maintain the stability of social structures. One main aspect of sustainable development education is futurization. It is process of modeling the future. The modeling future means not only «challenge-action» response, but also «anticipation of dangers reaction» [12, p. 45].

The «weakest link» of education for sustainable development, which requires urgent development, is the issue of training content. The complexity of the answer to

the question: «What to teach for sustainable development?», – is associated not only with the general uncertainty, over subject of the concept of sustainable development, but also with its «advanced» function.

By now, guidelines for the selection of educational content has been formed:

- an impartial assessment of the prospects of the applied theoretical and methodological foundations of pedagogical research in the order to reduce a duplication of the content of works and reduce the triviality of their conclusions;

- increasing the degree of the integration of pedagogical, psychological research in the order to enrich pedagogical work with the objective measurable material, the development of the interdisciplinarity, which is especially important for improving the quality of the education;

- reduction of specific local research, overcoming small topics and a hypertrophy of research results;

- the choice of essential research objects, as well as the definition of subjects dictated by the needs of a society and the economy, and not individual researchers, a decrease in the proportion of initiative work in a favor of planned: strengthening the role of a state planning of research activities;

- strengthening the methodological component of the work, focusing on the experimental and experimental verification, including not only the selection of evidence of the author's correctness, but also the limits of applicability of the research result.

It is also necessary to outline a range of substantive priorities for the development of pedagogical sciences, determined both by the needs of the educational practice, and by the promising programs of the country's leading scientific institutions. In accordance with the position of the pedagogical sciences in their modern form, it is necessary to radically reduce the share of research that does not has a pronounced socio-economic value, but is characterized by a low level of the novelty. Therefore, the number of a priority thematic areas of a development of pedagogical sciences does not include the currently extremely numerous studies of

local applications of widespread and fully studied approaches, as well as studies of problems that are not suitable for a scaling.

Thus, extremely numerous pedagogical dissertations carried out on topics such as «Application of a personality-oriented approach in the professional training of future teachers», «Axiological approach to teach the discipline», «Teaching Technology» and the like, cannot be considered as having a sufficient novelty, theoretical and practical importance due to the widespread prevalence in the practice of education and the deepest study of the theoretical approaches mentioned in their names, it makes no sense to specify the application of which based on of individual educational programs or disciplines.

In the addition, it is necessary to strengthen the ties of the pedagogical knowledge with psychological, which can significantly increase the effectiveness of the pedagogical activity. Let's summarize the most promising directions of a development of pedagogical sciences in accordance with the position of the Kazakhstan Academy of Sciences:

- the formation of effective methodological foundations of sectoral didactic's, and the theory of the education, corresponding to the modern technological stage of the development of educational infrastructure;
- the psychological and physiological substantiation of promising methods and models of the training and the education, increasing the level of a psychological competence of teachers;
- the scientific support of the education standardization;
- medical-psychological and social-psychological research of the informatization of the education, the introduction of new IT technologies in education and the everyday life;
- the cognitive, and psychological support of promising methods of the teaching and an education;
- a pedagogical regulation of ensuring the social security of children and a youth, modern models of the socialization and a resocialization;

- effective models for identifying and developing gifted children and youth;
- modern methods of correctional pedagogy and pedagogical work in the relation to persons with disabilities;
- a modernization of the content of the education, including a professional pedagogical education;
- ensuring the compliance of the terminology of pedagogical sciences with modern priorities in the development of scientific knowledge, reaching new levels of meaningfulness of the concepts used;
- ensuring that the directions of education correspond to the requirements of the labor market and the characteristics of professional activity in the modern world;
- search, and substantiation of effective innovative methods of teaching and education;
- scientific substantiation of effective criteria for assessing the quality of education, and the productivity of teaching staff;
- designing effective organizational and managerial solutions in the field of education [13, p. 66–79].

**Conclusion.** We have to understand there are so much new information in the field of pedagogical sciences, which we have to be up-to- the date with. Fortunately, as there are new informational technologies available, it is possible to accomplish if one would like to does so. Another aspect to keep in the mind is Kazakhstan the educational sustainable system is just being formed. So perhaps, we could use current existing developments of the design education, general didactic's, project pedagogy to improves upon the sustainable education. As the teacher play a key role in this process, the special focus should be on training teachers and creating opportunities for them to exchange experiences.

These guidelines of pedagogical sciences can now be called urgently necessary for implementation in the domestic scientific and educational infrastructure. Their role is to ensure the effective development of pedagogical sciences in the line with the strengthening of the scientific and technological potential of the Republic of

Kazakhstan and the formation of an effective system of a scientific and theoretical support for the vocational education.

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