ГУМАНИТАРЛЫҚ ЖӘНЕ САЯСИ-ӘЛЕУМЕТТІК ҒЫЛЫМДАР ГУМАНИТАРНЫЕ И СОЦИАЛЬНО-ПОЛИТИЧЕСКИЕ НАУКИ HUMANITIES AND SOCIO-POLITICAL SCIENCES

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WHAT MAKES EDUCATION SO COMPLEX?

The aim of the research is to reveal the factors influencing modern education. The article addresses one major question: What is happening with education in this difficult era? The author draws on the analysis and results of Western studies in order to understand what makes education so complex. At the same time, it is important in the article to identify the totality of various factors that affect the concept of education. The scientific novelty of the work lies both in the approach to the study of scientific articles by Western scientists, and, in the interdisciplinary consideration of the issue itself with the involvement of the classical works of Western philosophers. The study also addresses two main sub-themes: What is education for? Values and attitudes of teaching staff. As a result, the data obtained showed that the variety of factors of modern education is difficult for a number of external and internal factors, where external ones have only an indirect effect on its content, while internal ones have a direct impact. Ultimately, frequent reforms in the education system, a surge in economic integration, a huge flow of information and human relationships through advanced technologies, the movement of a huge number of people around the world, changing of human values and many other factors make education so difficult.

Keywords: education, complexity, values, attitudes, teaching, learning.

Introduction

This study intends to discuss a growing phenomenon regarding numerous complexities in teaching and learning. The study aims to answer on a key question: What is happening with education in this challenging era? Western research suggests that education is experiencing unprecedented difficulties. Educational difficulties are at least partly linked to notions of globalization and competencies, as Machekhina's (2016) analysis shows [16]. Others argue that worldwide educators are now more concerned with actual future of education. They urge us to take up questions about the types of knowledge and skills needed for young learners in the current era. This intends that the scientists are still debating about education and its complexities for those who are teaching and learning (RSA n.d.; Kereluik, Mishra, Fahnoe, & Terry, 2013; Young & Muller, 2010) [20; 15; 25].

Much has been identified regarding the education system of the 21st century, as a century of the educated people, where it can be assumed that only well-educated and skilled individuals will be best adapted for the technological world (RSA, n.d.) [20]. However, the advantages and complexities of current educational methods have provoked considerable debate. It is claimed that the current educational methods have left society unprepared for the demands in the current era (RSA, n.d.; Kereluik et al., 2013) [20; 15]. As a result, there is increased critique regarding both teaching quality and principles (Semel, 2010; Mulgrew, 2013) [22; 17]. Indeed, considering the notable changes in many other fields, it is noteworthy that the approaches taken to teaching have themselves remained essentially unchanged (Kereluik et al., 2013) [15]. In order to education sector be able to effectively adopt the more advanced approaches that the current era seems demanding, Wilson (2010) suggests that for this, it is required an educational 'revolution' (as cited in Braun, 2010) [1]. Thus, acknowledging the complexities of the modern education, it is clear that knowledge is a key aspect in dealing with current educational demand. For this reason, the educational system and appropriate knowledge need to be further developed despite the fact that technologies are developing at unpredictable rates.

It has been suggested that it is vital to evaluate and understand educational complexities through the lens of the arena of worldwide education. For this, society should take into account the recommendations of the world community and educators regarding educational matters. To understand the above mentioned issues, this study addresses two main themes:

- What is education for?

- The values and attitudes of educational staff.

In particular, it will focus on specific aspects of certain features of educational space. The study will end with specific conclusions and recommendations.

What is education for?

Historically, research investigating factors associated with education has focused on the issue of what education is for. To answer to this question, we need to understand the nature of education itself. It is assumed that education consists of the particular aims that people wish to acquire during their lives (Curren, 2007) [7]. The first attempt at understanding the nature of education is rooted in ancient Greece, namely the philosophers Plato and Aristotle, who had sought the understanding of aspects of education. More specifically, they held that, education is "essential to a just and wellrun society" with the context that the process of conveying knowledge is crucial in establishing the "arête", which means virtue, goodness, and excellence (Curren, 2007, p.8) [7].

Developing this idea, knowledge, according to Aristotle, is not an innate virtue by its nature, but it is only acquired through practice. Moreover, the highest ideal is the goal that people seek for their own sake. To achieve this goal, we need to have virtue, which is the ability to navigate our knowledge (Chappell, 2012; Dumitrescu, 2010) [5;10]. Plato argued that knowledge is not for all people. He explained this as that the people must conform to the types, or spheres of existence of a person, where everyone should follow a path of their own development. Overall, according to Plato, education is one of the key methods of conversion of human nature and the state (Phillips, D.C, 2014) [19]. It seems that the Greeks considered knowledge not only as a virtue, but also as phenomenon of morality. In this sense, then, a likely explanation for the nature of education is one that interprets the context of knowledge as an 'ethical' knowledge (Chappell, 2012). Besides, there is another notion which is viewed as a good and useful knowledge, because it reveals the pursuit of justice (Phillips, D.C, 2014) [19]. Therefore, in light of the above, one might suppose that education is a fundamental and deliberate process of development and self-development of the person that can be associated with acquiring a socially significant experience as embodied in knowledge,

skills, creativity and an emotional attitude to the world. Why is this so necessary? This is necessary, because, education develops human values, potential, talent, and expands individual's worldview, as a lack of knowledge marks the loneliness of a person who does not know what is happening around them (Miakhel, 13, from Kabul, Afghanistan, as cited in The Gardian, 2014) [13].

Of course, we can interpret education from different perspectives, and it is almost certain that everyone will have their own understanding about education. Then it would be appropriate to refer to Dewey and Peters's definitions very clear clarifying key aspects of the functions of education.

The concept of education as democracy and initiation

According to Dewey (2010), education is democratic (as cited in Semel, 2010) [22]. It is a process of social communication and development of different groups of individuals in which education has different standards, methods and nature depending on the existed environment (as cited in Curren, 2007) [7]. By developing Dewey's thoughts, education was intended as a construction of own ideals by the direct competition in society itself, although he also stressed that any process involving an individual in given social group cannot be regarded as education. Peter (2007) argues that education is an initiation (as cited in Curren, 2007) [7]. According to Phillips (2014), the concept of initiation assumes mutual interdependence and dynamic relationships between an individual and society [19]. For example, in the context of school, education is a transaction between teacher and pupil. More specifically, education can involve any processes of training, instruction, or teaching. In addition, there is another notion, which is seen as a step towards achieving desirable objectives. This can be expressed in the form of a well-paid job or a prestigious position in a company, as Curren (2007) declaires [7]. However, Curren (2007) is more concerned with the question of what individual is regarded as most valuable in terms of education, rather than the processes or activities within their remit [7]. It can thus be suggested that education may be viewed as one of the instruments towards the practical realization of human potential, hence Dewey and Peter's positions are more appropriate and accurate [19]. To some degree, both positions can be considered close to a notion of 'growth', but their context, of course, consists of the different aims of different individuals. Thus, from this, it is difficult to define what the precise aim of education, because its goals might vary depending on individual needs and their values and attitudes. Dewey (2007) also puts forward that the aim of education in a social context is an understanding of a man's place in the world and in mastering the ways in which the man interact within. This says that communication and socialization are vital in understanding the role in the world by a human being. However, it seems that the quality of life is definitely highly motivating factor in understanding this matter [19].

Taken together, these studies support the notion that education is a process of actively understanding the aspects of communication with people of different cultures, mentalities, cognitive ability. Education is a complex practice, because it takes the form of pedagogy and creative activities. Hence, within this context, the role of a teacher is multifaceted and requires considerable personal efforts.

To summarize, it is assumed that where there is increasing emphasis on increasing adult knowledge worldwide (Nicolaides & Marsick, 2016) [18], existence of numerous complexities within pedagogy (Úcar,2013) [23], noticeable tension in the relationship between the individual and society, education acquires the most precious

of significance, creating the majority of conditions that might allow an individual to realize their lifetime opportunities and preserve their uniqueness and individuality.

Complexities of education in the 21st century

It should be noted that, in the new global economy, debates regarding educational issues have become a central topic (Buck, Bradley, Robb, & Kirzner,2012) [1]. This is because, education, as things cannot stand up to the demands of the current global economy. Firstly, education is evolving under the influence of various economic, political, historical, cultural, and religious forces (RSA, n.d.; Machekhina, 2016; Young & Muller, 2010) [20;16; 25]. Secondly, an evolving labor market is influencing on it (Dalton et al., 2011) [9]. Thus, education requires a permanent development. However, in today's era the situation has changed radically. Firstly, education is seen as a nature of knowledge which has changed significantly and indeed has expanded environment conditions (Wilson, as cited in Braun, 2010) [2]. Figure 1 reveals the main factors which are impacting on education.

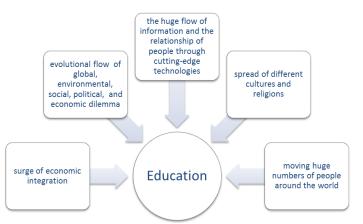


Figure 1. Main factors of globalization affecting education.

Considering this evidence, it seems that, as stated by Machekhina (2016) [16], of the future of educational development will definitely be associated with globalization and competencies, which can be seen within the framework of the relationship between students, schools, society, inclusing the context of history, sociology, politics and philosophy (Semel,2010) [22]. All of these, in turn, depict the structure and organization of education as a complex-social organism. This is why education is complex at its core. According to Bar-Yam, (1997); Gell-Mann, (1994); Holland, (1995); Kauffman, (1993), (1995); Pagels, (1988); Prigogine & Stengers, (1984); Waldrop, (1992); Watts & Strogatz, (1998); Wolfram, (2002), the scrutiny of any complexities always results in a tense atmosphere amongst scientists, politicians, and different social groups (as cited in Jacobson & Wilensky, 2006) [14]. In this sense, the phrase "butterfly effect" as coined by Edward Lorenz, depicts a picture of the world, where any fluctuations ultimately result in a chain of event that induces inequalities in both physically and socially remote locations, including other countries and the lives of adults (Cox, 2002, as cited in Nicolaides & Marsick, 2016) [18]. In this sense, education is not an exception. Therefore, this picture provides some support for the understanding of meridians of complexities in the context of education, which is seen as a worldwide phenomenon (RSA, n.d.) [20]

The Values and attitudes of educational staff

The history of humanity makes it clear that education and society are inseparable. For every individual, education is essentially a pronounced personal value. According to the World Economic Forum (World Economic Forum [WEF], 2014a) education is one of the cornerstones of the development of the of the wellbeing of the individual and of a group of people (as cited in Guevara, 2014) [11] whose activities greatly influence economic sustainability, where a considerable role is played by the well-educated people and an advanced workforce within the labor market (Hausmannet et al., 2005; Author, 2014, as cited in Guevara, 2014) [11]. In addition, it is worth noting that the parameters and aspects of the educational system is also impacting on both the cultural and social spheres of society (Dalton & Crosby, 2010; Glewwe& Jacoby, 2004, as cited in Utyupova et al., 2016) [24]. According to these author's beliefs, education forms not only a person's knowledge, but also their culture, worldview, and social relations.

It can be thus argued that the process of education is endless, since education is a long process of travelling between different perspectives (Curren, 2007) [11]. In doing so, it makes life meaningful and spiritual, affects a variety of emotions, and satisfies the need for knowledge, communication, and assertiveness. On the other hand, the education system is a reflection of the society in which we live. Hence, an understanding of the many interpretations and debates in relation to education is vital, as it paves the way to a deeper analysis of the subjects within its purview. It should be noted that in every part of our global world, society has been undergoing unprecedented changes whose speed makes any predictions regarding the future essentially impossible (Koylu,2007, as cited in Cetin,2016) [3]. In addition, the latest technological achievements may have led to the loss of any recognized system of values, namely; cultural, spiritual, and moral (Çetin,2016) [3]. Utyupova et al. (2016) [24] assert that values are needed for the development of society and to preserve an identity of a nation. Similarly, Kale (2007) states that due to the unprecedented changes across the many fields of the economy and other spheres of our lives, there is a necessity to acquire the strong values, that allow us to develop relationships, communication between different people and to make informed, ethical decisions with regards to life (as cited in Cetin, 2016) [3]. Further, commenting on values from a school perspective, DfE (2011b, as cited in Capel et al., 2013) [4] argues:

> "Value education is a broad term and may carry a particular emphasis on education in civic and wider moral values, or 'character education' and be closely related to other terms in current use, including spiritual, moral, social and cultural development, for example in some of the formulations of the English national Curriculum." (p, 269).

The above quote brings us closer to the question of how educational values are conceptualized and enacted through the educational system. They are differentiated in terms of how school staff and pupils act by identifying their beliefs. Moreover, values are the very basis of whole forms of school life (Capel et al., 2013) [4]. This being the case, it is worth noting how these values are grounded within the context of the

curriculum. Thus, curriculum is the key ingredient in establishing appropriate human values. Curren (2007) [7] maintains that the manners of the teacher and their approach to sharing knowledge with their students are very important as these are linked to the goals and functions of responsibility. Chen (2008) [6] suggests that within a class, a teacher's role is essential, as the teacher controls situations, has authority to make decisions and create a positive microclimate within which effective learning can be achieved. However, some scholars have suggested that in order to enhance teaching practice, it is important to consider teachers' beliefs, as these can significantly effect on the whole teaching process and other academic decision-making (Woods et al., as cited in Chen, 2008) [6]. Values are established in the process of an active life, via children's parents or within the school environment via its staff. In turn, these values reflect on a whole cycle of their life and on the process of acquiring of knowledge, the quality of life. In this process, as a rule, the key role plays a teacher (Utyupova et al., 2016; Cetin, 2016) [3]. However, Mulgrew (2013) [17] asserts that due to the lack of awareness regarding teaching profession within society, as a consequence the majority of people do not understand the horizons of its complexities. Teaching is not purely about delivering knowledge to students, but it is also preparing students as socially and emotionally responsible individuals. Thus, in light of the recent events, such as, a standardization of the teaching profession across the vast majority of countries (Herbst & Strawiński, 2016) [12], the substantial imbalance between educational matters and the changes affecting world society (Young & Muller, 2010) [25], educational matters are high on the agenda of fundamental issues that need to be addressed. Through a close examination of all issues within the sphere of education, it is widely recognized that any evaluation of teacher performance is complex and it requires considerable commitment and effort. Thus, it is very essential to work with such complexities through the prism of different perspectives. Schmoker (2014) [21] maintains that in the pursuit of perfection, complexities do not allow one to see the wider picture, thereby reducing the probability of adequately describing the connection between an applied force and the results thus obtained. This indicates that for enhancing the system of education and the best approaches, it seems that society needs to consider reproduction and creation of adequate moral values and norms. This is an important issue because it will give a sense of self value to everybody in a society. An understanding of morality, in a space in which the relationships between people are viewed, should form the basis for targeted education and training of students.

It is clear, the vast majority of teachers face the complexity of finding their place within the school environment (Semel,2010) [22]. This is because, the key role of a teacher is to make adequate decisions within the context of unique and particular situations (Capel,2013) [4]. However, analysis suggests that despite these complexities, teachers' beliefs are a key in school environment (Chen, 2008) [6]. Indeed, education is complex, as people's beliefs effect on it. However, education, first and foremost, is the cornerstone of culture and morality, and only within it possibly there is development of the new values. Utyupova et al. (2016) [24] argue that values are the fundamental pillars of humanity that take different forms depending on an era and societal vision. However, despite the fact that every person has their own system of values, Ingle hart (2006) claims that their sequences and meridians are the values of the international community as a whole, and may thus be considered 'Global values' (as cited in Utyupova et al., 2016) [24]. Thus, the system of values defining human life becomes the core that forms

the basis of a concrete community. They, in turn, control the individual's behavior within society.

Conclusion

This essay has discussed some of the reasons behind the complexity of the educational system through the prism of understanding the essence of education itself and the system of values and attitudes held by educational stuff. To being with, it is worth summarizing that education is an evolving system that is currently experiencing the significant upheaval as a result of highly dynamic economic, social, historical, cultural, and religious forces; the world does not stand still, and we are constantly forced to adapt to it. Any fluctuations, to a greater or lesser extent, are part of a process, to which education is not exempt. However, the actual reasons for these and many other changes are varied. Thus, it is important to identify these reasons and to realize any opportunities for preventing them. It has been suggested that it is not enough for a modern individual to achieve certain goals in life and beliefs in their own success to achieve this via the 'beaten track'. A person needs the entire 'toolbox' of education, a system of values, aspirations, and beliefs, as formed through culture and life experience. On the other hand, in today's world, for a person to be an image of culture within the framework of their values there is a need of a well-rounded education, where the formed values are the pillars to the structure of personality. Moreover, education is based on the system of values, thus it creates the image of cultural rights, by which, and for which student is brought up. Yet, the image of a 'cultural' human is a broad notion that depends entirely on the boundaries of life experience.

It seems that life defines education and, in turn, education affects life. To understand the system of education, it is important to understand structures of our lives. In other words, this is a way towards understanding of our own essence and opportunities as individuals. Here, it worth noting that the parameters of our personal opportunities and possible success in life are not measured by the presence of good education. Because, it is a complex mix of many other ingredients. Thus, these ideas of culture, it seems, that are formed not only in the image of a cultural human, but also in the image of a cultural citizen. However, within this context, of course, a crucial role is played by the teacher who also establishes our values. The actions of a teacher, it seems are not only those of the preservation and translation of culture in the form of experience, but are also ones of forming responsible values in their students. Thus, in view of the above, one may suppose that education gives the individual the opportunity not only to find a better place in society, but the incentive for self-development and the discovery of their own potential.

References

1 Buck, P.W., Bradley, J., Robb, L., &Kirzner, R. Sh. (2012). Complex and Competing Demandsin Field Education: A Qualitative Study of Field Directors' Experiences. *Field educator, 2,* 1-17.

2 Braun, E. (2010). Knowledge power: interdisciplinary education for a complex world. *Prometheus*, 28(3), 288-291.

3 Çetin, F. (2016). Determination of Value Education Self-Efficacy Beliefs of Prospective Teachers. *International Online Journal of Educational Sciences*, 8(4),88-96.

4 Capel, S.,Leask, M.,& Turner, T. (2013) (6 ed).*Learning to teach in the Secondary school.A companion to school experience*.Great Britain: Routledge.

5 Chappell, T. (2012). Varieties of Knowledge in Plato and Aristotle. *Topoi*, 31(2), 175-190.

6 Chen, C. H. (2008). Why do teachers not practice what they believe regarding technology integration?. *The Journal of Educational Research*, *102*(1),

7 65-75.

8 Curren, R. (2007). *Philosophy of Education*. Oxford. Blackwell Publishing

9 Ltd.

10 Drago-Severson, E. (2016). Teaching, learning and leading in today's complex world:reaching new heights with a developmental approach. *International*

11 Journal of Leadership in Education, 19(1), 56-86.

12 Dalton, B., Stevens, L., & Maas-Brady, J. (2011). "How do you do it?": MSW Field Director Survey. *Advances in Social Work*, *12*(2), 276-288.

13 Dumitrescu, C. A. (2010). Essence of Aristotel's Well-Governing Concept, Part Three: The Moral Dimension. *Cogito: Multidisciplinary Res. J.*, 2, 157.

14 Guevara, P. (2014). Toward a Common Structure in Demographic Educational Modeling and Simulation: A Complex Systems Approach. Complicity: An International Journal Of Complexity & Education, 11(2), 86-101.

15 Herbst, M., & Strawiński, P. (2016). Early effects of an early start: Evidence from lowering the school starting age in Poland. *Journal of Policy Modeling*, *38*(2), 256-271.

16 'I can say that an uneducated girl is worthless'. (2014, May 9). *The Guardian*. London.

17 Jacobson, M. J., &Wilensky, U. (2006). Complex systems in education: Scientific and educational importance and implications for the learning sciences. *The Journal of the learning sciences*, *15*(1), 11-34.

18 Kereluik, K., Mishra, P., Fahnoe, C., & Terry, L. (2013). What knowledge is of most worth: Teacher knowledge for 21st century learning. *Journal of Digital Learning in Teacher Education*, 29(4), 127-140.

19 Machekhina, O. N. (2016, January). Globalization of education: the experience of retrospective complex analysis. In *SHS Web of Conferences* (Vol. EDP

20 Sciences.

21 Mulgrew, M. (2013, February 28). The complex job of teaching. New York Teacher.

22 Nicolaides, A., & Marsick, V. J. (2016). Understanding Adult Learning in the Midst of ComplexSocial "Liquid Modernity". *New Directions for Adult and Continuing Education*, 2016(149), 9-20.

23 Phillips, D.C. (Ed). (2014). Encyclopedia of educational theory and philosophy. SagePublications.

24 RSA, (n.d.). Opening-minds-education-for-the-21st-century.

25 Schmoker, M. (2014, January 14). Why Make Reform So Complicated?

26 Semel, S. F. (Ed.). (2010). Foundations of education: The essential texts. Routledge.

27 Úcar, X. (2013). Exploring different perspectives of Social Pedagogy: towards a complex and integrated approach. *Education Policy Analysis Archives*, 21(36), n36.

28 Utyupova, G.Y., Baiseitova, Z.B., & Mukhamadiyeva, A.A. (2016). Value Forming Education of Prospective Primary School Teachers in Kazakhstan and Germany. *International Journal of Environmental and Science Education*, 11(9), 2607-2618.

29 Young, M., & Muller, J. (2010). Three Educational Scenarios for the Future: lessons from the sociology of knowledge. *European Journal of Education*, 45(1), 11-27.

БІЛІМ БЕРУДІ НЕ КҮРДЕЛЕНДІРЕДІ?

Зерттеу мақсаты - қазіргі білім беру жүйесіне әсер ететін факторларды анықтау. Мақалада басты бір сұрақ қарастылған: Осы киын кезеңде білім берү жүйесінде не болып жатыр? Автор білім беруді қиындататын нәрсені түсіну үшін батыстық зертеулерінің нәтижелері мен талдауларына сүйенеді. Сонымен бірге ең маңыздысы, білім беру тұжырымдамасына әсер ететін әртүрлі факторлардың үйлісімін анықтау. Жұмыстың ғылыми жаңалығы батыстық ғалымдардың ғылыми мақаларарын зерделеуде, батыс философтарының классикалық енбектерін тарта отырып, мәселенің өзін пәнаралық қарастыруында жатыр. Зерттеуде екі негізгі қосалқы тақырыптарда қарастырылған: Білім не үшін керек? ПОҚ құндылықтары мен көзқарастары. Нәтежесінде алынған, мәліметтер қазіргі білім беру жүйесінің факторлары бірқатар сыртқы және ішкі факторларға қиын болатындығын көрсетті, мұндағы сыртқы факторлар оның мазмунына жанама әсер етсе, ал ішкі факторлар оған тікелей әсер етеді. Қортындылай келгенде, білім саласында жиі жүргізілетің реформалар, экономикалық интеграцияның өсуі, қазіргі заманғы технологиялар арқылы үлкен ақпарат ағымы және адамдардың қарым-қатынасы, бүкіл әлем бойынша көптеген адамдардың көшуі, адами құндылықтардың өзгеруі, және басқа факторлар, білім беру жүйесін қиындатады.

Негізгі сөздер: білім, күрделілік, құндылықтар, қатынастар, оқыту, дайындық.

ЧТО ДЕЛАЕТ ОБРАЗОВАНИЕ ТАКИМ СЛОЖНЫМ?

Цель исследования - раскрытие факторов, влияющие на современное образование. В статье рассматривается один главный вопрос: Что происходит с образованием в эту сложную эпоху? Автор опирается на анализ и результаты западных исследований, с тем, чтобы понять, что делает образование сложным. Вместе с тем, важным, в статье, является выявление совокупности факторов, которые влияют на концепт образования. Научная новизна работы различных заключается как в подходе к изучению научных статей западных ученых, так и в междисциплинарном рассмотрении самого вопроса с привлечением классических трудов западных философов. В исследовании рассматриваются две основные подтемы: Для чего нужно образование? Ценности и отношение педагогического персонала. В результате, полученные данные показали, что многообразие факторов современного образования сложно по ряду внешних и внутренних факторов, где внешние, имеют лишь косвенное влияние на его содержание, в то время как внутренние оказывают прямое воздействие. В конечном итоге, частые реформы в системе образования, всплеск экономической интеграции, огромный поток информации и взаимоотношений людей через передовые технологии, перемещение огромного количества людей по всему миру, смена человеческих ценностей и многие другие факторы, делают образование таким сложным.

Ключевые слова: образование, сложность, ценности, отношения, преподавание, обучение.

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