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Contradictions and proposals for education in the knowledge society

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Abstract

Education in today's society is seen as contradictory. On the one hand, as a promoter of the development of skills for lifelong learning, which brings about changes in the way of teaching and learning; that is, in the transit of a teaching centered on the teacher towards a student-centered learning. On the other hand, as a consequence of globalization, it is promoted the design and development of competency-based curricula; the emphasis on academic performance and the search for effectiveness, which lead to control in educational management and its repercussions in the practice of teaching. In this paper, it is reviewed the meaning of the knowledge society and its relationship with globalization as economic-political and ideological processes from sociology and critical pedagogy. The effects produced by these processes are examined, as well as suggestions for dealing with them, particularly in the university education field. Teaching proposals for the development of critical thinking and generation of knowledge are highlighted. Reflection and analysis of their educational beliefs are also proposed for teacher learning, as a way to professional development.

Key words: knowledge society, teaching profession, democratization, teacher beliefs.

Introduction

The purpose of this article is to show how the knowledge society (hereinafter SC, for its initials in Spanish) is influencing the economic, socio-cultural, educational, and particularly the higher education field, regarding the professional development of teachers and teaching in universities; there are also proposals to counteract problematic situations that have been generated in the SC, given its relationship with globalization. In order to achieve this objective, a review and analysis of authors is carried out, who from sociology and critical pedagogy contribute other visions and perspectives to the traditionally proposed functionalist ones.

The so-called SC today's society, which has developed along with globalization, has as its main characteristics: the importance of information and communication technologies in economic processes; knowledge as a source of growth; production based on knowledge and services; the rapid production of knowledge; and the importance of educational processes throughout life (Krüger, 2006). Some authors agree that this need to learn throughout life or permanently is due to the constant generation of knowledge, and the instability of employment and professions (Bauman, 2006, Mateo, 2006).

In this global context, the educational processes and the teaching work have been increasingly adjusted to market requirements and government policy guidelines. In this way, teaching has been oriented towards more functional practices based on educational models and the use of technological resources, often without prior analysis. This, together with the control

of school management, has resulted in contradictions so that teaching is oriented towards the development of skills for lifelong learning, as well as discomfort in teachers. Studies conducted in Mexico on teaching practice seem to coincide with the results of authors who carry out research in other parts of the world, such as Day (2005); Fullan (2016); and Hargreaves (2007), who have reported unfavorable conditions for teacher professional development and teaching, such as: overload, individualism, few opportunities to reflect and investigate the practice, and emphasis on teaching as a technique and results, among others.

Due to the above, various educational theorists and researchers have established proposals; with the intention that education and teacher professional development favor critical and plural thinking, as well as skills to learn and live in and for democracy; and thereby reduce the negative effects produced in the educational environment by the economic system and globalization (Gimeno, 2013, Giroux, 2013, Morín, 2001, Tedesco, 2003, Torres, 2007). In this context, it is worth mentioning that the investigation of teachers' beliefs is a promising way for teacher professional development, given that there is evidence of the relationship between teachers' beliefs and their teaching practices (Ertmer, 2006; Luft and Roehring; 2007; Mansour, 2013). The proposals for the improvement of education and professional teacher development presented in this work could be valuable, since they are inclusive, they contain pedagogical principles so that teaching promote the development of knowledge, skills and attitudes in teachers and students as participatory curricular actors.

Knowledge in the knowledge society

In the SC, knowledge is the structuring principle of changes in the economic system, in labor markets and in education (Krüger, 2006, Mateo, 2006). This means that the SC does not only refer to the growth of certain sectors such as science, technology and education, but it is a phenomenon that permeates all parts of economic life and (that) characterizes the functioning of companies and organizations (Hargreaves, 2007). One of the characteristics of the SC is the leading role that knowledge has in the productive processes; this refers to an economic model of production in which the most important thing is the use of knowledge and information; and not the availability of capital, labor, raw materials or energy (Krüger, 2006, Tünnermann and de Souza, 2003).

Jarvis (2006) and Tünnermann and de Souza (2003) point out that knowledge is not focused on the study of scientific disciplines, but on their application; this refers to the shift from academic to productive business and industrial fields. Knowledge in this way must demonstrate its social relevance and economic efficiency. For obvious reasons, the most developed countries have greater availability of knowledge and technological innovations; this favors competitiveness and the centrality of knowledge as a producer of the wealth and power of these countries, which is why it tends to be considered as a commodity (Mateo, 2006, Tünnermann and de Souza, 2003).

SC, guided by the principles of capitalism, will not only continue to reproduce, but will also produce more social inequalities, taking into account that the basic principles of developed societies continue to be the accumulation of capital; the generation and use of knowledge are also subject to the rules of the market. In this context, the concept of SC as a political and ideological construction has developed along with globalization, whose objective is the establishment of a world market. These political processes have had the support of multilateral organizations, such as the World Trade Organization (WTO), the International Monetary Fund (IMF) and the World Bank (Held and McGrew, 2003, Krüger, 2006).

In the social and cultural scene at world level, Morin (2001) has pointed out that thinking in the current era has propitiated the conditions for plurality and cultural development. However, plural thinking is opposed by neoliberal economics and by globalization, since these

processes lead to homogeneity and to the creation of a social and cultural image based on the market. Bauman (2006) agrees that today's society is a consumer society that values its members, above all, for their abilities and behavior in relation to consumption. In this way, one should not think that SC and globalization suppose the emergence of a harmonious world society derived from a process of global integration in which there is a growing convergence of cultures (Held and McGrew, 2003; Krüger, 2006; Tünnermann and de Souza, 2003). The following section describes the effects produced by these processes.

Problematic situations arising from globalization and the knowledge society

The differences in the economic, social and cultural development of the central (developed) and peripheral dependent (undeveloped or developing) countries means that globalization is not a universal process experienced uniformly in all countries (Held and McGrew, 2003; Krüger, 2006; Tünnermann and de Souza, 2003). Several researchers have pointed out problems that SC presents for contemporary society, in Table 1 they are synthesized.

Table 1. *Problematic situations arising from the knowledge society and globalization*

Areas	Risks
Technology	Inequalities in the access to ICT causes social exclusion
Scientific production and Art	Inequality in the participation of world academy Devaluation in academic titles.
Labor	Growth of unstable employment contracts. Development of individualism. Lack of solidarity and democracy.
Culture and Society	Control of the media by multinational companies. Consumer society. Privatization. Reduction of pedagogy to teaching techniques. Change and innovation without reflection as leadership features in educational institutions.
Education	Emphasis on practical knowledge. Little participation of teachers in the co-creation of the educational model, curriculum and training.

Source: Own elaboration based on Bauman, 2006; Giroux, 2013; Krüger, 2006; Morin, 2001; Tünnermann and de Souza, 2003.

Economic and social inequality in access to information through ICT is known as digital divide. This gap is a form of social exclusion since access to computers, the network and knowing how to use them is increasingly important for participation in social, economic and political life (Krüger, 2006). This situation also affects the scientists and intellectuals of the dependent countries, as they are at a disadvantage regarding the financial and technical resources for the investigations, in the opportunities for the dissemination and application of the results of the works, limiting research to problems, themes and methods defined in the central countries (Tünnermann and de Souza, 2003).

In the work environment, Krüger (2006) points out that the progressive disappearance of stable labor relations (permanent contracts) and the consolidation of part-time, independent and temporary work, as well as mobility in the labor market, both in low positions and high qualifications are becoming more frequent.

In the social sphere, it is observed the disintegration of solidarity in the family and in the communities, as well as the development of individualism as a result of the consumer society in which the identity of the people is equated with the image that the media project to be conditioned by large multinational companies (Bauman, 2006, Morin, 2001).

Regarding education, one of the problems according to Giroux (2013) is the growing privatization that threatens the democratization of education and the role of teachers as critical intellectuals, coupled with the reduction of pedagogy to a series of tools (evaluation, method). Likewise, Unesco (2005) warns that in the market society many people will have to change their profession and school education will not be able to offer training and preparation for all, so that people will have to develop their individual capacity to change their specialty and confront economic and social changes. Particularly in higher education, universities seek to be competitive nationally and internationally, so that change and educational innovation without reflection have been assumed as features of their leadership, or as a way of being well evaluated by the accrediting institutions (Jarvis, 2006).

Paradoxically, the SC (in the words of Hargreaves, 2007) has difficulties in making teaching a profession of learning. Accountability and overregulation, the main concerns of governments, have caused tensions and deteriorated working conditions. Arnau (2008) points out that tensions perceived by teachers from France and

Spain have also emerged in Latin America. Particularly in Mexico, these tensions appear between management for the control of results and professional autonomy, between the idea of teaching as a technique and the new professionalism; and between institutional projects and those generated by the teachers themselves (Flores Fahara, Rodríguez Bulnes and García Quintanilla, 2015).

In this global context, curricula have increasingly adjusted to market requirements and government policy guidelines. In this way, teaching has been oriented towards more functional practices, based on competences and forms of control and business management (Day and Qing Gu, 2012; Hargreaves, 2007). Gimeno (2013) points out that one of the problems faced by teachers with the change to the competency model is that it is understood that the contents are not important but competences; and it is questioned the role of education on knowledge in this current society.

It should be noted that in the university context, the processes of change, particularly in Mexico, by not taking into account the participation of teachers, have omitted to consider the cultural, work and academic conditions; and educational contents and educational resources have often been incorporated into the educational project without critical analysis of their relevance or curricular implications (Cantú, 2011, De la Torre, 2013, Díaz-Barriga, 2010).

Teachers are a fundamental part of the educational process, since they are the ones who carry out the implementation of the model; in this sense, it becomes important to investigate what beliefs about teaching have been built by teachers from the training or continuous training they receive in the university in the context of the SC, given that there is consistent evidence of the relationship between beliefs and the teaching practices that are carried out in the classroom. Beliefs are conceptualized in the literature as knowledge assumed to be true and useful; and they intervene in the interpretation of new knowledge and events, which helps to give meaning to situations that arise in the school and the classroom, and therefore support teachers to make decisions before and during teaching (Mansour, 2013; Woolfolk, Davis and Pape, 2012).

In Mexico, a study conducted by Bailey Moreno (2017) with professors who teach at state and private universities revealed that some notions that there have been incorporated into teachers' beliefs, which the

theorists have documented about the negative effects brought by SC and globalization for the development of teaching; especially those that have to do with teaching some knowledge considered valuable because it is useful or applicable; the emphasis on teaching as a technique that incorporates the know-how as the axis in learning; the belief that the student-centered educational model means that the student achieves learning by applying knowledge through the execution of exercises, projects, problem solving or cases.

In relation to the teaching exercise, it was found the belief that being a facilitator of learning implies keeping the students interested in knowledge, which entails on the part of the teachers the constant planning, supervision and control of the students' learning. This, in addition to increasing their workload, promotes students' lack of control and responsibility for their own learning.

These beliefs indicate a false interpretation of what student-centered learning means; according to teaching models, these beliefs and practices are close to the model of direct instruction (Joyce, Weil and Calhoun, 2006), which is characterized by teaching the academic contents under the direction and supervision of the teachers, being this appropriate for the curricular organization of universities in which the professors work. In any case, the problem lies in the fact that since there are no conditions to implement an educational model centered on the student, the teachers show physical and emotional exhaustion since there is a lack of connection between the educational policy and the curricular structure.

Regarding professional development, in the field of continuous training or training of university teachers, Bailey Moreno (2017) found that they do not participate in the definition of the educational proposal, nor in the definition of the contents or topics of training. The data of the study show that the university emphasizes the procedural knowledge of the teacher by not providing training in the knowledge of academic disciplines, but in teaching skills, use of technology and teaching techniques.

These beliefs influence in some way the definition that teachers have about their performance and responsibilities before teaching, as facilitators so that students are interested and control their learning by applying knowledge. Consequently the university, by emphasizing training with a focus on innovation in teaching skills, use of resources and teaching techniques, seems to have fostered the belief that knowledge is

limited to its application, which conditions the training of students to a practical knowledge, and focusing their attitudes and interests for the fulfillment of the academic program, thus reducing the possibilities of self-learning and of approaching the generation of knowledge, and therefore a comprehensive education, a fundamental part of the general culture that every university student should have.

From what has been described, it is possible to glimpse a complex current situation due to the development of the SC dominated by globalization. However, there are also ideas and proposals to move in a different direction and counterbalance the risks indicated; these proposals are presented in the following section.

Proposals to combat problems in the knowledge society

Fortunately thinkers of sociology and critical pedagogy offer proposals that could be turned into actions (intended) to improve current socio-cultural and educational aspects. It can be seen that these are not innovative proposals (coming) from the consumer society; however, they are because in our days, innovation will consist in the rescue of thought that helps to improve the quality of life of people. They are schematized in table 2, and later described.

Table 2. Proposals to counteract the negative effects produced by the knowledge society and globalization.

Areas	Proposals
Technology	Facilitate access to technology and the internet, raise awareness of their use as a means of communication and education.
Scientific production and Art	Research for the generation of knowledge. Generation of knowledge for the solution of local problems.
Culture and Society	Analysis of social reality and citizen empowerment. Development of self-learning. Expand the vision of pedagogy-based teaching.
Education	Teacher participation for the co-creation of the university model and its training processes. Collegial work. Research of the practice. Review and analysis of teacher beliefs.

Source: Own elaboration based on Bauman, 2006; Hargreaves, 2007; Mateo, 2006; Tünnermann and de Souza (2003); Unesco (2005, 2017).

Nowadays, the notion of knowledge societies (in plural) is still valid as a reaction to the economic model that seeks homogeneity. This implies the development in nations of education for sustainability from the creation of their own knowledge systems, and recognition of the plurality of societies (Unesco, 2005). In terms of research for the generation of knowledge, according to Tünnermann and de Souza (2003), dependent countries, such as Mexico, must define their own issues, issues and methods according to their needs and with theoretical, scientific, technical and artistic traditions that guarantee the permanence of its history.

For social development, knowledge and technology must be considered as elements of culture with the aim of developing human capacities and relationships for the empowerment of citizens; for this, it is necessary that they acquire the ability to choose and act to control the personal, political and social forces that would otherwise control their lives (Bauman, 2006; Krüger, 2006).

In the educational field, it is reiterated the importance of developing enough cognitive abilities, in order to differentiate knowledge information from the large amount of information characteristic of today's society. Regarding university education, Pérez and Castaño (2016) point out that the role of the university in the 21st century is to promote humanistic and integral education in which the development of attitudes and problem solving is the fundamental thing and not the accumulation of knowledge. This has to do with the need to learn throughout life due to the rapid production and generation of knowledge, which requires continuous learning; education throughout life is also an answer to the growing instability of both employment and professions (Bauman, 2006, Hargreaves, 2007, Mateo, 2006, Unesco, 2017).

So, for university teachers to lead teaching and to develop professionally, they need to continuously learn; to research in order to generate knowledge; to acquire pedagogical knowledge and teaching contexts; to use it to analyze and reflect on their practice; to participate in intellectual life of the faculties and of the community in general; to debate critically; and to establish networks between the faculties and disciplines, in order to examine issues that raise the socio-cultural and economic dimensions (Jarauta Borrasca, Medina Moya and Mentado Labao, 2016, Unesco, 2017).

Specifically, there are proposals for teaching and professional teacher development be based on

pedagogical principles and be aimed at social understanding, knowledge generation and self-learning in teachers and students. These proposals have in common the promotion of democracy for personal, social and professional development. Table 3 outlines some of the main proposals.

Table 3. Proposals for teaching and professional teacher development in the knowledge society

Authors	Proposals
Torres (2007)	Democracy that practices
Flecha and Tortajada (2013)	Dialogic learning.
Giroux (2013)	Critical pedagogy.
Gimeno (2013)	Principles for teacher professionalization. Teacher participation.
Unesco (2017)	
Bailey, Flores and González (2016);	
Davis and Andrzejewski (2009);	Reflection and analysis of educational beliefs of teachers
Ertmer (2006);	for teacher professional development.
Luft and Roehring (2007);	
Mansour (2013)	
Woolfolk, Davis and Pape, 2012	

Source: self-made

Torres (2007) points out that it is important to commit to a vision of liberating and optimistic education that leads to the need to provide society with greater powers; and that it should be considered in a political project to strengthen democracy. In this sense, the idea of a dialoguing democracy is to turn the classrooms into spaces where the freedom to express thoughts and convictions be guaranteed in the best possible way.

Flecha y Tortajada (2013) propose that education should facilitate access to knowledge acquisition; and allow the development of skills to live in the SC, such as 1) selection and processing of information: 2) autonomy and ability to take decisions; 3) group work and flexibility. Dialogical learning is based on the following principles: equality of differences, solidarity, creation of meaning, egalitarian dialogue, transformation, cultural intelligence and instrumental dimension. In this sense, dialogical learning for educational progress is based on the development of communication skills, in such a way that one can participate more actively and in a more critical and reflective way in society, if it is

pretended to overcome inequalities and exclusion.

Giroux (2013) develops the proposal of critical pedagogy as a way for education, teachers and students to develop new alliances, relationships and projects (national and transnational). For this author, pedagogy is the result of different struggles and not an *a priori* discourse. In this sense, critical pedagogy is a form of social practice that arises from certain historical conditions, social contexts and cultural relations; it roots an ethical and political vision that seeks to take students beyond the world to know, it cares about the production of knowledge that helps to build a critical citizenship and to be able to negotiate and participate in public life.

The proposal of Gimeno (2013) to improve the quality of education focuses on the development of teachers as classroom researchers, since educational policies have made that teachers have to make changes or introduce 'fashions,' such as multiple intelligences or teaching by competences. Some principles on which teaching professionalization should be based, according to this author, are:

- Teaching practices are actions, and it is from the theory of action that we can understand them better. They do not have as their only base the scientific knowledge, the theory, but also the own and foreign experience, as well as the tact of each one. Nor are they mere techniques that can be applied following a certain procedure.
- Teachers think and act from their cultural background, from the context of an institutional organization that is given to them, and from a professional culture with which they face their work.
- The teaching task is performed by people, in a relationship in which it is projected a way of being, thinking, feeling, wanting and knowing how to do (Gimeno, 2013: 252).

One way to favor teacher development through research is derived from studies about teachers' educational beliefs; these suggest that since there is congruence between teachers' beliefs and their teaching practices, they should be actively involved in reviewing their beliefs and learn from them. It has been found that the effectiveness of teacher development programs is important if it leads teachers to get involved and reflect critically on their beliefs (Davis and Andrzejewski, 2009, Ertmer, 2006, Luft and Roehring, 2007, Woolfolk, Davis and Pape, 2012). It is even known that to favor

the analysis of beliefs, teachers must participate in decision-making and educational policy when they want to implement changes. In addition, they can get involved in the development of the curriculum, so that they can build knowledge regarding teaching and learning during the process (Mansour, 2009).

In this sense, the learning of teachers will be favored if they believe in the educational authorities to be part of the educational processes; they are creators of their development processes by participating and deciding on their organization; they reflect on their practice and organizational practices in networks or learning communities; if they individually and collectively review situations that make them question their beliefs, examine their beliefs and generate new knowledge from them, with this it will be possible to transform their practice and organizational practices for the benefit of the educational community. This process is not simple, and there are no unique and precise procedures; rather, it is about university professors establishing for themselves their training projects and strategies based on their needs and interests, and to be creators of their learning processes (Bailey Moreno, Flores Fahara, González Rivera, 2016).

Conclusions

Based on what is known about current society, what can be expected from teaching and learning in the SC? In principle, to be aware of what happens in the economic, socio-cultural and educational spheres, as a result of their immersion in the SC, in a globalized context that to a large extent is an inevitable reference to understand that there are certain risks, but also ideas to solve or counteract them. In this way, understanding the influence that companies have on the financing of universities and research centers and, therefore, on the definition of knowledge that is valuable in teaching and learning, can favor teachers' critical analysis of resources, techniques, strategies and fashionable devices that at the end of the day are merchandise and are part of the consumer society.

However, despite the complexity and economic and social uncertainties associated to current society, the review of critical analysts offers possibilities to incorporate that creative and humanistic part that can be developed through education. For this, it will be necessary that teaching learning do not be limited to the use of didactic techniques or knowledge of the area of the subject that is taught; it is necessary to incorporate the review and analysis of theoretical aspects that

explain what happens in the global, regional and national context; that is, to return to philosophy, to sociology, to pedagogy from their various positions, as disciplines that lay the foundations for the understanding of educational theory and practice; therefore, to adopt critical-analytical tools to examine and interpret the practice, as well as to generate valuable learning, pedagogical innovation and educational transformation for a better society.

If the university is configured as an institution in which the educational policy and teacher training is carried out in a unidirectional manner, the processes of dissemination of information and knowledge without feedback from teachers about what happens in the classroom are conditioning factors, so that the same teaching-learning patterns are repeated and reproduced. Instead, the university can also learn by taking advantage of the knowledge, experiences, commitments and initiatives of teachers to generate a culture of organizational learning. It is not possible that the prestige of a university be based on the concern for innovation, indicators, accreditation and ranking; all of which have replaced academic life and social responsibility; it is time for the university as a center of culture to approach the circumstances that deserve attention; particularly in Mexico, the increase in poverty, unemployment, crime, social insecurity, lack of empathy and political and citizen commitment.

It should be reiterated that fostering in teachers the research, reflection and self-criticism of their beliefs and educational practice may favor their approach to a more complete view of it, as it allows to become aware of situations that for being common, are not usually questioned. Investigating, in this sense, leads to the conceptual reconstruction of the experiences of the educational practice, of the teacher-student-knowledge-university-society interactions; in this way, it is possible to adopt a vision of empowerment of the profession to be generators of knowledge.

The pedagogical and educational development proposals summarized in this work can be applicable, functional and provocative of critical thinking and encounter with the human. They reaffirm the idea that education today, more than ever, should be providing conceptual and methodological tools so that students, teachers and managers can coexist in an uncertain, risky and complex society, in which critical thinking and joint action can be the key to solving problems and thereby improve the quality of life for everyone.

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