

Rethinking Teacher Training According to 21st Century Competences

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Abstract

One of the demands of our educational system is the orientation towards sustainability. To prepare people for future we need teachers who are able to develop the 21st century competences – the six macro-level competences are considered universally relevant: life-long learning, multi-literatenes, trans-disciplinarity, self-agency, interacting with others and interacting in and with the world. (Marope, 2018). This article focuses on researching the way in which pedagogical practices are changed and on studying the factors which are involved in educational changes. A longitudinally study on ten years (2008-2018) was set up. Our purpose was to look for and describe how the educational practice has changed. The changes in educational practices are produced when they are sustained by educational politics and environmental factors as well as the teacher's abilities and traits: reflections, novelty, openness, learning, critical thinking. The gap between present educational practice and future demands can be reduced if system teacher training is rethought according to 21st century competences. Transformative learning in teacher training is an adequate way of developing teacher's competences.

Keywords: teacher training; future competences; transformative learning

1. Introduction

It is a common idea that schools must be changed according to the new 21st century demands. All educational researchers, educators and parents underline the need for a new strategy of education focussed on competences for the future: life-long learning, multi-literateness, trans-disciplinarity, self-agency, interacting with others and interacting in and with the world. (Marope, 2018). It is important to underline that changing times are transforming the nature and the role of competencies in every day people's lives as it was demonstrated by a lot of international education documents (Marope, Griffin, Gallanher, 2017; Marope, 2018). For example the cognitive competences are redefined from 21st century perspective not only critical thinking and problem resolving, but as a metha-cognitive competences which involve design thinking. Also, the communication and collaboration, social and civic competences are defined according to new future social trends.

Among these future competences, critical thinking and social-emotional skills are always mentioned. These competences are necessary more today, because our world is changing every day, it is complex and demanding.

The major challenge for the educational system is: What type of changes have to make the teachers in their educational practice? What can the teachers do for a sustainable education? How must training the teachers for new digital generation who will work and live in the future be? This article underlines the idea that even though the educational changes are present in schools nowadays, there are not enough to produce a significant change, if the teachers do not possess the 21st century skills.

2. (Are) The Teachers - agents of educational changes?

Even in digitalized society, when some voices speak about "the end of work" (Harari, 2018) the teaching profession remains a necessary one for society (people, in general), because, despite the fact that artificial intelligence will be used to replace people, some characteristics such as creativity or decision taking, human sensitivity cannot be modeled by robots or computers.

In the future, in an uncertain world, people (who are students now) need mental flexibility and emotional balance. The development of deep human feelings and awareness, responsibility and empathy becomes a priority of any educational system in the world, because we wouldn't be "downgraded" people who use wrong upgraded computers with devastating effects on themselves and the world" (Harari, 2018:82)

In other words, the evolution of technology must be accompanied by moral and emotional development. Students have to learn how to use technology as an useful instrument for human development, to promote a new 21st century ethic based on responsibility, self-agency, while interacting with others and interacting in and with the world.

According to Hargreaves (2000), the development of teacher professionalism passing through four ages and the most challenging ages is the 4th which is a postmodern or post-professional one. The main characteristic of teaching and teacher professionalism, outside of new technology communications skills, is a new type of relationships with parents (as a consequence of changing family structures, dynamic of workplace), colleagues and community. "Teachers have to learn to work within a more diverse community, to see parents as sources of learning and support rather than interference, to communicate more to social workers and second language teachers" (Hargreaves,2000:172).

The teacher's responsibilities must be redefined according to the social movement. They must be more than educational actors, agents of social changes, promoters of new social ethic, digital citizenship etc. Therefore, teachers need to change their mind set and practices according to the new social responsibilities in order to become promoters of social change and psycho-social competences.

Some studies (Hattie, 2014; Voinea, Palasan, 2014; Voinea, Bota, 2015; Senge et al 2016) on teachers' beliefs and teacher identity demonstrated that it is necessary to know the teacher's mental structure in order to change the educational system. Moreover, there are studies which underline the links between teachers' beliefs, knowledge, confidence and openness for technology (Ermet & Ottenbreit-Lefwich, 2010; Ermet & colab, 2012).

The teachers must be helped to change their beliefs, through a transformative training. In that way, they become 21st century teachers, agents of sustainable education.

The analysis of the emergence of the concept of transformative learning highlights its strong foundation: pedagogical, philosophical, practical (experiential) and last, but not least, social. The author of the transformative learning theory, J. Mezirow, launched the concept of transformative learning in 1978 in the article *Transforming Perspectives*, inspired by Paulo Freire's critical pedagogy (the concept of critical consciousness), by Jurgen Habermas' philosophy and even by the observations of his wife's transforming experience, who returned to complete her studies as an adult.

Mezirow defines transformative learning as "the process by which we transform problematic reference frameworks (mentalities, mental habits, perspectives on meanings) - sets of assumptions and expectations - to make them more comprehensive, lighter, more reflexive and more capable of affective change" (Mezirow, 2014:168).

Generally, transformative learning occurs when a person encounters a perspective that is at odds with his or her current perspective. (Kroth, Cranton, 2014:3). For this, there are necessary, in Mezirow's opinion, the ten steps of perspective transformation:

- Experiencing a disorienting dilemma;
- Undergoing a self-examination ;
- Feeling a sense of alienation from traditional social expectations;
- Relating their discontent to similar experiences of others;
- Exploring options for new ways of acting;
- Building competence and self-confidence in new roles;
- Planning a course of action;
- Acquiring the knowledge and skills for implementing a new course of action ;
- Trying out new roles and assessing them ;

- Reintegrating into society with the new perspective (Kroth, Cranton, 2014:3).

Analyzing the ten steps described by Mezirow and referring to teachers' work, we can better understand why transformative learning is a adequate strategy for teacher training.

Transformative learning is a comprehensive theory of adult learning, based on social constructivism. It is the type of learning that suits the adults' characteristics (Stolovitch, Keeps 2017:94-95), meaning that it is the one that takes into account the learners' experience, the fact that they can monitor their learning process, they are responsible and autonomous, but also have vulnerable spots, such as fear of failure and loss of reputation. Although it has its limitations, the transformative learning theory has been used in adult and teacher training successfully Kostoulas-Makrakis (2010). For example Kennedy (2005) presents the nine models of continuous training (training; award-bearing; deficit; cascade; standard-based; coaching/mentoring; community of practice; action research; transformative) organised into three broad categories – transmission, transitional and transformative and argue that the transformative learning is an adequate model for teacher because the professional autonomy is greater.

Our own study about the role of transformative learning in support teacher training (Voinea, Topala, 2018) shows that the impact of transformative learning is visible when learning is based on teachers' experiences, they are free to express their feelings and they choose to practice what is proper for the context provided by their classroom.

Indeed, the teachers need autonomy, responsibility, innovation etc, and this features cannot be transmitted or learned. These must be experienced, felt and understood so that they could be put in practice.

3. Research questions, goals and methods

This study addresses two research questions study: What kind of educational changes are necessary for a sustainable education?

How could the teachers be agents of educational changes in the 21st century ?

The goal of this study is to analyse and describe how the educational practice has changed and identify the characteristics of 21st century teachers.

The present study was conducted in a mixt methods structure, which employed both qualitative and quantitative methods for data collection, embedded in a constructivist-interpretivist research paradigm. We are interested in deeply understanding specific cases within a particular context. (Patton, 2002).

This study involved a longitudinal research for a period of ten years (2008-2018) and included a number of 100 participants, (99 female and 1 male) teachers from the continuous training system who are practitioners in preschool (40 teachers) and primary educational (60 teachers) system, from several urban (69) and rural (31) schools, from Brasov county, Romania.

In Romanian continuous teacher training system, for the first degree (the superior level of teaching career), the teachers have to elaborate a didactical research under the supervision of a university specialist and they have to teach four lessons for their professional competences to be assessed. A team formed of 3 members (university supervisor, manager of the school and manager of didactical strategies) participated as assessors and observers at four lesson.

In this context, of teacher's assessment, we observed 400 lessons and analyzed lessons plans, official curricula, self and teachers' portfolios. We conducted interviews with the teacher after they had taught (self-assessments).

We recorded information regarding the following aspects of teaching profession according to a previously established set of criteria: the teacher's for issues related to educational research, teaching and evaluation strategy, relationship with students, parents, colleagues and community, professional training and self-assessment.

Data analysis methods included: transcribing interview and observation data; interview and document analysis

4. Results and Discussion

The teacher's interest for educational issue research reflects the dynamic of educational and social problems. For a period of ten years we found a shift in the interest from the didactical strategy topic to emotional intelligence, partnership as you can see in the table below.

Table no.1- Topic of educational research

Topic of educational research	Preschool teachers (40)	Primary teachers (60)
Methodology (the role of critical thinkink methods, learning project, learning strategies)	45%	61,6%
Social – competences (intercultural education, socio-emotional development)	37,5%	20%
Partnership (Partnership with parents or community, incusion)	17,5%	18,3%

On one hand, this fact can be explained by the changes imposed by the educational policy at national and international level. These changes imply promoting the education centred on competences, inclusive education, integrated learning and focus on social-emotional learning. For example, the teacher's interest for didactical activities centred on social-emotional competences have risen in the last five years (2013-2018) as a result of national curriculum changes (the *Personal Development* from the primary level, as a new subject matter introduced in the national curriculum in 2013). The "*Personal Development*" subject matter promotes learning activities aimed at developing the learner's ability of self-knowledge and at expressing, in a positive way, his / her interests, skills, personal experiences, relationships and communication skills, reflections on learning. (Personal Development Syllabi no. 3418 / 19.03.2013). A novelty of this subject matter, *Personal Development*, is given by the particular emphasis on the students' emotional, social and professional development. Capitalizing on pupils' actual life experiences underpins the authenticity of learning. There is a permanent reporting to what they think and feel, as well as to how students behave. The contents of the curriculum provide the opportunity for creating learning situations that enable students to become aware of who they are, to analyse their own emotions, to relate to others (diversity), to be motivated to learn successfully, to explore what professions / jobs they would like to have. Also, another novelty of the curriculum is the possibility to implement integrated activities or diversifying/expanding extracurricular activities. The skills and attitudes developed in *Personal Development* are those transferable acquisitions needed to achieve school, career and personal success. The complex register of didactic strategies, suggested by the curriculum, stimulates the active involvement of pupils, individually or in teams. It is recommended to stimulate students' creativity by using interactive teaching and learning as well as assessment methods. In other word, the teachers are forced to change the pedagogical vision about learning, education and competences.

In preschool educational system, where the changes have been wider, the didactical activities after 2013 were focus on holistic development, cognitive, social and emotional. The interest of educators for intercultural education, ecological education, partnership with parents and community has risen.

On the other hand the shift of interest towards new educational changes is the result of the need for professional development. All teachers who choose a new educational topic for research declared that they "want to make a change in their daily practice and students` lives".

Regarding **teaching and evaluation strategies**, we found that in this area there are most of the visibile changes.

Interactive learning strategies and critical thinking methods as well as cooperative learning are frequently used.

TIC is widely used, too, even in schools from rural areas. We can observe a rise in the interest for personal development lesson, after 2013, and in the same time a decrease in the interest for Math and Romanian language lessons. Even if the cognitive competences are still dominant, the social competences begin to be present in educational practice at preschool and primary school level.

Table no.2 - The frequency of type of lesson in a decade (2008-2018)

Type of lesson	Primary school		Total
	2008-2013 (120 lessons)	2014-2018 (120 lessons)	
Math	40,83%	33,33%	37,08%

Romanina language	39.16%	33.33%	36.25%
Natural Sciences	8.33%	8.33%	8.33%
Music	0.83%	1.66%	1.25%
History/ geography	1.66%	2.5%	2.08%
Physical education	0.83%	1.66%	1.25%
Personal development		10%	5%
Practical abilities/ Technogical education	8.33%	9.16%	8.75%

A limitation of didactical strategies used by the teacher is the low degree of individualization, adjustment to students` needs.

The differentiated learning was obvious when students with special educational needs were concerned.

The relationship with the students, parents, colleagues and community represents another aspect of educational change which must be redefined for the teachers according to the new meaning of collaboration in the 21st century. Most partnerships are with other schools or kindergartens, museums, libraries or churches (in general other state institutions) and less with ONG, parents associations etc.

In what professional development is concerned, all teachers have participated in the last five years at different continuous teacher training courses (inclusive education, health, assessment, emotional intelligence), conferences, teachers` meetings.

In **self assessment** discussion with educators we have identified the need to share their teaching experiences with colleagues and other specialists. The teachers need to have some trainer-model (model of critical thinker or designer thinker, model of pedagogical innovator). The reflections about their own didactical behavior are poor (surface reflections). These refer to pedagogical objectives, methods and children/students behaviors and less to their own creativity, pedagogical beliefs and professional objectives or their impact on students. The teaching professionalism is frequently associated with students` results (maths and sciences school contests and competitions) and less with the well-being of students or with the educational progress of students.

The interview with all teachers who elaborated new educational topics regarding emotional intelligence, social competences, critical thinking, partnership with community etc. has found some personal feature:

- Interes for novelty (new educational theory, new methods, new didactical materials),
- Openness for reflection (these teachers were objective and positive in self evaluation. They had a realistic image of their competences and weaknesses),
- Critical thinking,
- Openness for human being (all these teachers were interested in their relationship with students and parents)
- Collaboration, cooperation with colleagues, manager and other specialists. These teachers are open to changes, even at a personal level. A teacher in preschool declared "I decided to change all my life. I changed my hometown, I learned more to access a good kindergarten, I changed my style. Now I think the changes are best things, because they force you develop",
- A good self-image.

These features can be converted into a model of 21st century teachers which can be developed during continuous teacher training system based on different models of training and using the principles of transformative learning.

The major changes must be in teachers mindset, in a new image of teachers as social promoters of values who possess the 21st century competences.

4. Conclusions

Although the research carried out has the constraints specific to the constructivist-interpretative approach, where the truth is built through the dialogue between the participants and the researchers, from the adjustment of the perspectives and the

impossibility of generalizing the conclusions, we can state that there is a number of teachers who implemented the educational changes. They are still just a minority, but they have got the power of change.

The way in which the changes were adopted depend on a several factors: the educational political factors, the levels of educational system (preschool, primary or secondary school), the culture of schools, the environmental factors (urban/rural; a "good school" with a great tradition or marginal school), the collegial atmosphere, the leadership of school manager etc. These kinds of changes met with resistance at the beginning until the teachers understood and accepted the role of changes.

Beyond all mentioned factors, the teachers training system must be rethought according to 21st century competences. We need a training system which develops life-long learning, multi-literateness, trans-disciplinarity, self-agency, interacting with others and interacting in and with the world through different teachers' training programs (transformative), through collaboration with colleagues and experts.

Any educational change must be accompanied by "human change" (teachers' vision about their role in school and society, teacher practice and teacher personal development)

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