

QUANTUM MODEL OF CHANGE MANAGEMENT FOR UNDERGRADUATE EDUCATION – EUROPEAN PERSPECTIVE

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ABSTRACT

The education is a top priority of any government being on of the socio-economic fundamental pillar. Having an education system with high performance in terms of programs offering and skills developed to the graduates is the main goal of any change and reorganization implemented. Romania passed from 1990 to present a period of deep change of the education system. The paper presents a change model based on the physics laws of energy transfer and preservation that shows the mechanism of change implementation. The model is a result of previous studies briefly presented (methodology and part of the results) conducted to find out if we can speak about "change scheduling", "shareholders involvement in change", "planed change", "institutional performance through change". Finding out "What?", "When?", "How?", "Who?", "How much?" to change to reach "Success" and "Excellency" are usual question that not only managers of the education institution have to post, but first of all the decision makers should ask and find the answers. The studies were conducted for the undergraduate education system in Romania and the model was developed mainly for school managers, but it could be extended if same finding are get for academic education or other areas. It answers to the questions by giving a way of change approach by a manager that anticipates the meaning and rhythm of change as considers Alvin Toffler.

KEYWORDS: *change management, education, efficacy, quantum model, performance,*

JEL CLASSIFICATION: *C90, D83, I21, M00*

1. INTRODUCTION

Starting from Alvin Toffler that refers to change only in terms of to the future and is committed to the change process analysis, he believes that the man of today is not important to know the past or the present, but "must learn to anticipate meaning and rhythm changes" (Toffler, 1970):

The result of the continuing socio-economic changes, educational institution is obliged to permanent change to succeed in a competitive environment being in perpetual transformation and to have performance in its mission to provide skilled labor. The manager, as a vector of strategic guidance, is what determines the strategy this institution will adopt in the change process. The conclusion drawn from the panoramic analysis of the changes in education and the analysis of respondents' answers on Romanian education change is that any school that wants to be successful must be open to change.

A first feature would be swift and intelligent reaction at the change of the educational services beneficiaries' needs. Monitoring changes by individual employees, as well as the economic and social of the external environment, determines the organization to speculate any economic or labor market opportunity.

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The corroborating of internal and external factors, a pro-active approach makes the school to remain among the best institutions on the level of educational services which it operates.

Two legitimate questions can be formulated:

- 1- What are the reasons for which some schools are succeeding to change and take advantage of opportunities while others do not?
- 2- What key factors that differentiates the schools while implementing the same type of change, using the same human resources? Some of them successfully achieved significant changes that facilitate the development, others do not?

2. STATE OF ARTS CHANGE MANAGEMENT MODELS

A. Toffler said that "the only certainty is that tomorrow will surprise us all" (Toffler, 1990). Charles Darwin's theories confirm that only those who quickly and effectively adapt to changes can survive. These theories have demonstrated the more so as the socio-economic development has a fast growing, higher rate of changes determined by the explosion of information technology is sufficient to produce a wave of individual and organizational changes.

In education, the germs concerns change of perspective educational theorizing developed in the early 1970s, applied according to the conception of A.M. Huberman (1978).

Hafsi, T. and Fabi, B. (1997) define change as "a process of radical transformation or marginal structures and powers that emphasizes development organizations", while Eugen Burduş (Burduş et al., 2008) considers change as "replacement, modification, transformation, shape and / or content of an object, process or phenomenon".

We appreciate that change is not an end in itself but an opportunity, a means of adapting the organization to the external environment through a continuous process of identification, assessment and transformation, in the form or content of structures and competences that powers the development in order to improve performance. In other words, change in organizations can be regarded as a necessary process of transition from one equilibrium state to another.

Over time, research in this area revealed several levels of which can be regarded the change (Petrescu et al., 2010) as follows: model of organization and development; organization form of adaptation to the environment; permanent and dynamic process; the ability to adapt continuously.

Druker, P. (1993) requires entrepreneurial thinking as the capacity of a person to put their ideas into practice, through management based on creativity, flexibility, adaptability and risk-taking as a way to cope with change but also to cause them.

To highlight the many issues involved in the change process is sufficient to recall some of their forms of classification (Duică, 2008): 1) planned changes, unplanned changes; 2) ameliorative changes / improvement, strategic change; 3) reactive changes, changes-looking; 4) micro-changes, macro-changes; 5) technological, structural, behavioral changes; 6) harmonization changes, adaptive changes, shift changes, redesigning changes (reengineering).

Organizational development requires permanent changes planned and adapting the organization to the new conditions. F. Mahler believes, with more than 25 years ago that the company "cannot afford to wait for change to occur spontaneously and randomly" (Mahler, 1989).

Most researchers recognize that the definition of organizational development is a difficult process. The term itself encompasses the whole of planned interventions based on human and democratic values (Petrescu et al., 2010) by which the organization is more efficient, and stakeholders get the expected satisfaction. Therefore we understand that organizational development is a long process in which contributes one or more changes planned to improve the "management system components" (Burduş & Androniceanu, 2000).

Jenny Reeves quote Fullan, M. referring to "the transformation of subjective reality is the essence of change" when he argue that between organizational development and change is interrelated (Reeves et al., 2002).

When people feel a threat produced as a result of changes in the external or internal environment, they operate a number of barriers to preserve security. It is interesting to analyze the extent determined by Hellriegel, D. (1997) issues as causes of resistance to change (selective attention and memory, habits, security, economic reasons, fear of the unknown, the dependence of power / to some people or the need for balance) are perceived by stakeholders as defining elements for the process of change that can occur in undergraduate organizations.

By Adams, J. and Carnall, C. (quoted in Nedelcu et al., 2009), perceiving change as a threat may be caused by a number of obstacles/barriers, most are applicable to employees of the undergraduate education system: habit, excessive conformism, authoritative tendencies, emotional dependence, attitude risk to others.

Burduş, E. et al., (2008) identifies some organizational and individual factors that constitute a resistance to change. Resistance to change is important because overcoming this opposition is the key in the installation of change.

Kottler, J. and Schelesing, L. (1979) say that change management is focused on "identifying sources of resistance to change and providing ways to overcome them". Thus Kotter, J. and Schelesing, L. define management as a way of overcoming resistance to change, and Burduş, E. considers in its analysis on the management functions.

In time many models of change have been developed we consider relevant of these the following:

- Harold Leavin (quoted in Tripon & Dodu, 2012) builds a model where the organization is a diamond of four variables: the structure, actors, technology and order / tasks - binding element of the entire structure. Leavit notes that due to systemic interdependence, changing one of the variables involves changing one or all the other variables;
- The systemic approach (Burduş et al, 2008), is an extension of the Leavit model by adding strategy, managerial element that can help managers in carrying out planned changes;
- German psychologist Kurt Lewin built his theory on the model of physical systems whose equilibrium is maintained by the contrary action of two types of force, in the case of organizational system pressure forces of change and resistance to change. Breaking this balance in favor of one of two categories can cause change or, conversely, can maintain the old state system. He created a model that the planned change process is conducted in three stages: Softening, Changing, Recrystallization

Other models of change, like those of Edgar Schein, J. R. Lippitt - Watsonn - B. Westley, Larry Greiner, Burke-Litwin detail, in one way or another, detail stages of change, specifying steps, actions and process methods of change or emphasize certain elements and features that can make the difference between success and failure of change.

According to the Colins and Ackermann (1998) definition stakeholders are "people or small groups with the power to respond, to negotiate and to change the strategic future of the organization". Based on this definition, we can define the main categories of stakeholders for school education. They may be divided on two levels depending on the belonging environment:

- organizational internal environment - internal or primary stakeholders (employees of the institution and students);
- organizational external environment - external or secondary stakeholders (students' families, local communities, businesses, NGOs, media, trade unions, etc.).

A change model applicable to undergraduate level should contain five methods of stakeholder involvement (Figure 1) („Stakeholder Engagement" 2nd Part, <http://www.responsabilitatesociala.ro> on 12.05.2015).

- correct, complete and clear awareness;
- consultation in all cases where competence;
- involvement in all stages of change;
- permanent cooperation in solving problems that may occur;
- power of decision-making and accountability for decisions taken.

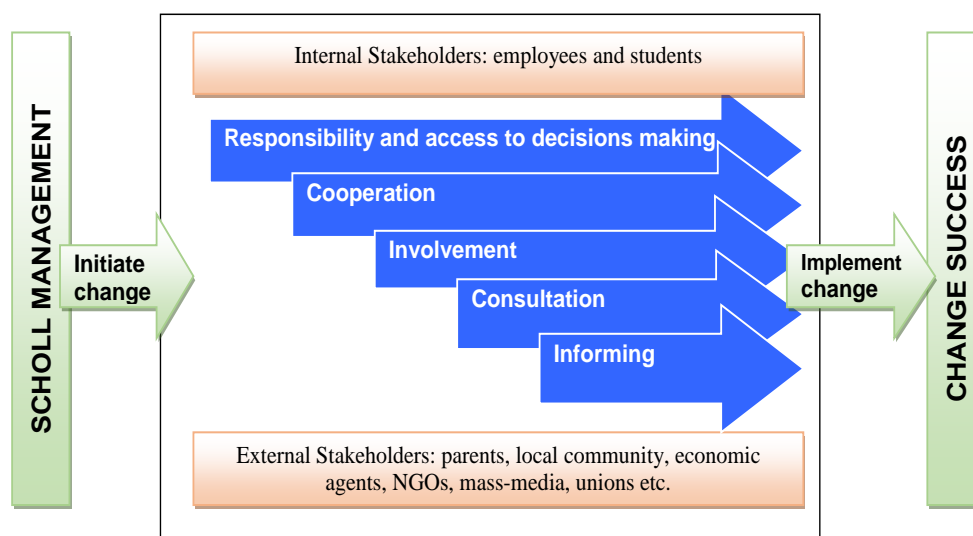


Figure 1. Educational stakeholders' involvement in change process
 Source: adapted from „Stakeholder Engagement” (2009)

Solomon Marcus in March 2015 (www.MichaelFullan.ca) welcome the views of Michael Fullan that the school manager can lead the organization towards progress if, as the agent of change, finds a balance between the factors of “have no choice” to those in category “how to develop leadership skills” to internal stakeholders.

3. RESEARCH METHODOLOGY

In an attempt to get answers to previous questions were found three aspects:

1. there are schools which have a reactive attitude to environmental changes and their attitude is reflected in the actions aimed at already produced changes in the external environment. These schools did not change strategy and any outcomes that enable the development;
2. there are schools in the system of education which have a long tradition of proactive actions based on changes in internal and external environment, forecasting and preparing new changes through intelligent strategies for change;
3. in any educational institution of over 800 schools and universities visited, there are not managerial documents refer to the use of any model of change, most of the changes, even the most successful, are achieving based on previous positive experiences which have been adapted to the concrete situations of the moment.

There have been several researches conducted to allow the construction of a specific change model of undergraduate education system, model enabling placement of the education organization on a high level of performance.

3.1. Desk research – Romanian education system 1990 - 2015

Studying documents, regulations, papers and statistical data changes in the Romanian educational system mapping was carried out from XIX century to the present. A special emphasis was placed on the last 25 years, were also the period of alignment to European standards.

We have an image of change since the reform of Spiru Haret, *Law of Secondary and Higher Education 1898*, to the *Law of National Education no. 1/2011*. If in 1898 the foundation of Romanian modern education was laid, in 2011 the law mission, as per art. 2 paragraph 2 is: the “... building, through education, the mental infrastructure of Romanian society in line with the new requirements derived from Romania's status as a member of the European Union and the

functioning in the context of globalization and sustainable generation of a highly competitive national human resources able to work effectively in current and future society (Law of National Education 1/2011).

3.2. Desk research – European models (German and Finnish)

European policies were analyzed for education and training in the 2000-2010 period known as the Lisbon strategy from 2000. At the same time the European Council in Barcelona (2002) set the objective "to make European education and training a world quality reference by 2010"⁹, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2007:311:0013:0015:RO:PDF>).

Europe 2020 strategy document called the European Commission Communication Europe 2020 is a European strategy for smart, sustainable and inclusive Europe (Brussels 03.03.2010) for the period 2010-2020(<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:fin:ro:pdf>). It draws the core lines of the strategy for the undergraduate and academic education.

Project Europe 2030 - Challenges and Opportunities is (May 2010) one of the most important documents of global analysis, in which the signatories trigger an alarm signal on the economic and social problems faced by EU citizens.

One of the solutions is considered to be "human capital" – "key strategic instrument for ensuring success in the global economy"(www.consilium.europa.eu/uedocs/cms_data/.../QC3210249ROC.pdf) and, in this respect, under *Chapter Growth through knowledge*: individual empowerment - states that "intelligence, creativity and innovation is a Europe's insurance for future prosperity" and if "the EU wants to fulfill the promise of the knowledge society, it should ensure educational excellence in all stages". The solution recommended to Member States for achieving this was "constantly updated skills base of the population according to needs and to create a social, economic and regulatory framework that can stimulate research, creativity and innovation" (Proiectul Europa 2030 - provocări și oportunități, p.21).

One study analyzes the German education system - example of good practice in dual vocational education in Baden-Württemberg land³ The German dual vocational education in Baden-Württemberg is reputed to be the most successful alternative education offer in vocational education VET in Europe, because it facilitates the insertion of graduates almost complete and efficient on labor market. A first conclusion "the high level of skills of graduates is the basis for innovative strength and performance of Baden-Württemberg economy" (<http://www.km-bw.de/>).

The second study analyses the stability and change in the Finnish education system - examples of good practice. Finnish education system is one of the world's most performing. Ministry of Education and Culture emphasizes that "the welfare of Finnish society is built on education, culture and knowledge" (<http://www.minedu.fi/OPM/Koulutus/koulutusjaerjestelmae/?lang=en>), and the results reflected in European statistics support it: GDP/capita in the year 2014 is EUR 37400 (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_10_pc&lang=en) and the unemployment rate was only 8.7% in 2012/2013.

3.3. Field research – stakeholders' perception

There were developed and administered two questionnaires that targeted:

- to determine stakeholder perception on the characteristics of the change process that has undergone secondary education system,
- to test the perception on proposed mechanisms of change model to refine them.

They used closed questions, with pre-coded answers, and to be granted the same number of alternative subjects pro and con, we used scales with five possibilities (from strongly disagree (1) to strongly agree (5), the at all important (1) to very important (5) or nonexistent (1) to very strong (5)) and were also requested information about socio-demographic variables (gender, age, type of institution, status the institution and area of origin).

³<https://www.baden-wuerttemberg.de/de/service/alle-meldungen/meldung/pid/der-strommix-in-baden-wuerttemberg-wird-gruener/>

Data recorded by application of the research instrument were statistically processed using Statistical Package for Social Science software - SPSS for Windows, version 17.0.

The sample was determined to have 384 subjects that should be representative for the studied population (Spătaru and Cădăriu, 2003). The size was reconfirmed by Taro Yamane (<http://www.seap.usv.ro/~valentinh/capitol%203.pdf>) formula for a population of 10,000 and for 100,000 subjects the subjects sample should have 398 respondents.

Quantitative research, conducted through two questionnaires, was conducted on a total of approximately 1,700 people (550 + 1150). A total of 1410 questionnaires were returned (456 + 954; return rate of 83% is approximately equal to the estimated response rate of 80%) and 1316 (405 + 941) questionnaires were processed, respondents covering all 41 counties and Bucharest. The amount of error of expected representativeness was 5% and the results were of $e = 4.86\%$ and 3.24%

4. RESULTS

4.1. Desk research - Romanian education system 1990 - 2015

In the period 1990 - 2015 were highlighted four stages of educational change:

- 1990 - 1995 - minor changes, legal vacuum, germs private education
- 1995 - 2003 - the Law of Education no. 84/1995 and the beginning of *Romanian Education Reform Project* promoted by the Romanian Government and the World Bank and it was completed in 2003. It was supplemented by Law no. 128/1997 regarding the status of teachers.
- 2003-2011 - implementing tools and mechanisms for quality assurance at school level supported by various EU projects
- 2011-present – Law of National Education 1/2011. A controversial law with loopholes, self-contradictory, confusing, disjointed, with extremely high number of subsequent documents combines unfortunate (after some authors) educational philosophy located at opposite poles. It created a strong rebound in the schools.

The effects of these numerous changes are reflected in the multitude of aspects of which we are presenting some examples of impact:

- the educational process is inefficient: a) baccalaureate results in decline; b) results in national valuation eighth graders to decline; c) high school dropout rate;
- syllabuses heavy with information, do not prove the existence of a clear, coherent and interdisciplinary vision;
- the infrastructure partially modernized, shrinking especially in rural areas;
- reduced number of teachers and their low level of training following a wage policy more than austere.

4.2. Desk research – European directives and models (German and Finish)

Romania are taken all necessary steps to align to European requirements and develop a series of strategic and methodological documents so that they can implement multiple quality evaluation systems, staff training, curriculum adaptation, etc. It seems there isn't a long-term strategy of changing the Romanian educational system with implementation stages, indicators to evaluate the results change etc.

A first conclusion of the study on the German model of dual vocational education in Baden-Württemberg is as German officials estimated "the preparedness of graduates is the basis for innovative strength and performance of Baden-Württemberg economy" (<http://www.km-bw.de/>). However, a limitation of the German model could be the intra-connected strong structure, which causes a slowly systemic reaction to changing.

It seems that the Finnish system efficiency is due to a complex system of factors: the structure of modern human resource competence continuously formed, openness to change, financing as

needed, the existence of the welfare of students, students' personal interests compatible with the requirements of the labor market, extracurricular activities, pedagogical and curricular architecture.

4.3. Field research – stakeholders' perception

From the results of relevant investigations are a few conclusions about the opinion of stakeholders about the planned changes, influencing factors, the frequency of changes etc.

Hypothesis no. 1 - Planned change is a necessary reality, a way of evolving / organization development and is determined by the changes taking place inside and outside the educational institution. In the education system, change is mainly due to an external medium changes. The hypothesis has been confirmed.

Moreover, the variable reaction of educational institution to changing is positively correlated significantly with the following external sources of pressure to change: legislative reforms/policy frameworks ($r = .314$, $p < .01$); discrepancies between market requirements and educational offer ($r = .204$, $p < .01$); economic changes ($r = .101$, $p < .05$) different views between the local community and academic community ($r = .105$, $p < .05$); frequent change of managers/management changes ($r = .168$, $p < .01$); mobility of human resources ($r = .107$, $p < .05$).

Other arguments that support the hypothesis are the stakeholders' importance they attach to other external sources of pressure such as: population dynamics ($M = 4.10$, $AS = .80$) and differences of opinion between the family/guardians and school ($M = 3.92$, $AS = .87$) and expressed agreement on the hypothesis high frequency change negatively affected the quality of the educational process.

Hypothesis no. 4 Change in undergraduate education is based on the correlation between the model change systems and methods of structural change, objectives, technological or strategy change. It is confirmed.

Of all the subjects' answers show that systemic model is the respondents' option as the type of change model. For example, analysis of average values provided by stakeholders structural change method and strategy ($M_t = 4.13$, $AS = .91$) (17c) respectively centered methods on objectives and technology changes ($M_t = 4.00$, $AS = .80$) (17b) environments that allow their position as the most effective ways to change educational institution, it is clear that institutional strategy must take into account changes made to an element that spreads to the entire organizational system.

Hypothesis no. 5 To achieve an effective intervention, the process of change should be completed by evaluation after the system went through a period of balance / stability in the new state (ex. a period of at least 4 years).

Regarding the mechanism for implementing the change 60.74% of respondents believe that the process of change should be followed by a long period of stability/ balance (a cycle of at least 4 years) before being measured/assessed. A substantial percentage of the respondents (32.59%) believe that the change must be announced at least one year before initiating legislative levers and legislative provisions regarding the change should be applied one year after their enactment.

Referring to sub-item 15 III a ensure a period of stability of the new balance in the freezing stage of the change process, to which stakeholders have been asked to rule on the important aspects in the process of change, the result was ($M_t = 4.48$, $AS = .66$), implying a value of between important and very important.

5. PROPOSED MODEL - QUANTUM MODEL OF CHANGE MANAGEMENT

Educational organization may be defined as a system composed of a plurality of elements (entities) between which there are linkages. In turn, this system is permanently in close connection with other elements of the education system and under the effect of changes in the external environment.

Modeling and enforcing the process of change started from the idea that like any system and education organization is subject to the laws of physics. Thus, the organization can be considered a system that reacts to external stimulus entering an imbalance phase and continuously strives to

achieve a steady state. The process of change can be easily compared and interpreted as an energy flow using energy conservation theories.

Based on these observations, we assume the "risk" to propose a possible *Quantum Model of Change* and to present its operating mechanism for two types of changes, unplanned (1) and planned (2), from the laws of physics perspective.

Between the institution and its external environment, there is always a two-way flow of influence factors which generate changes. Changes may occur in education organization, due to internal and external influences - sometimes caused even by the actions outputs of the institution. For example, changes in the external environment, the level of demand for labor, leading to changes in the school's educational offer, and this has the effect of east flow in reverse, from the organization to the external environment, determined by the quality of graduates skills that produce variations in the structure of the labor market.

For a better understanding, we can shape earlier observations using atomic model considering the school as a throbbing nucleus, separated through permeable membranes by other media, which are in turn in a continuous dynamic (Figure 2).

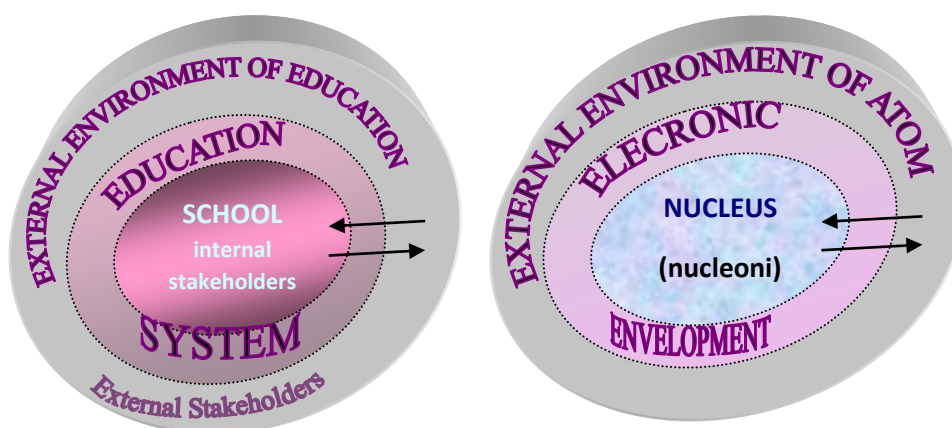


Figure 2. Undergraduate education organization – as atom

Source: authors' representation and transposition

Such a physical model of interdependence between the three elements that define it: organization, education system and the external environment, explains that nuclear type of forces such as organizational culture, some legal aspects related to the centralization of the decision, the bureaucracy, curriculum, mobility, organizational structure or financial resources tend to maintain steady structure may be associated with the forces of resistance to change. This equilibrium status corresponds to the system positioning on an initial level of quality that can meet the fundamental physical level of minimal energy.

The shutter of the majority of changes in a school is caused by the dynamic external environment which sends positive impulses to the organization through the pressure forces for change such as: deficiencies between labor demand and graduates skills, political strategies of decentralization, market competitive repositioning of educational services, economic and demographic changes etc. They are joined by the impulses generated of the internal pressure forces as: impaired communication, motivational system dysfunction, imbalances between the existing skills/training obtained by the need organizational skills, managerial failures, failure of programs etc.

For either type of change analyzed, following the action positive of impulse with a certain intensity, the energy of the entire system increases (what we call generic "excited") and is distributed at its elements (stakeholders, compartments, committees and working teams, boards of directors etc.) generating at every level an increased intensity of the pressure forces and/or breaking of the links

between the resistance elements. When this energy reaches a critical value, it triggers the change, a process defined as a qualitative transition between two states: for unplanned change (change 1) between the *initial state 1* (lower quality) and *excited state 3A* (top quality) and for planned change (change 2), between the *state 3A* and *state 6A*, as shown in Figure 3.

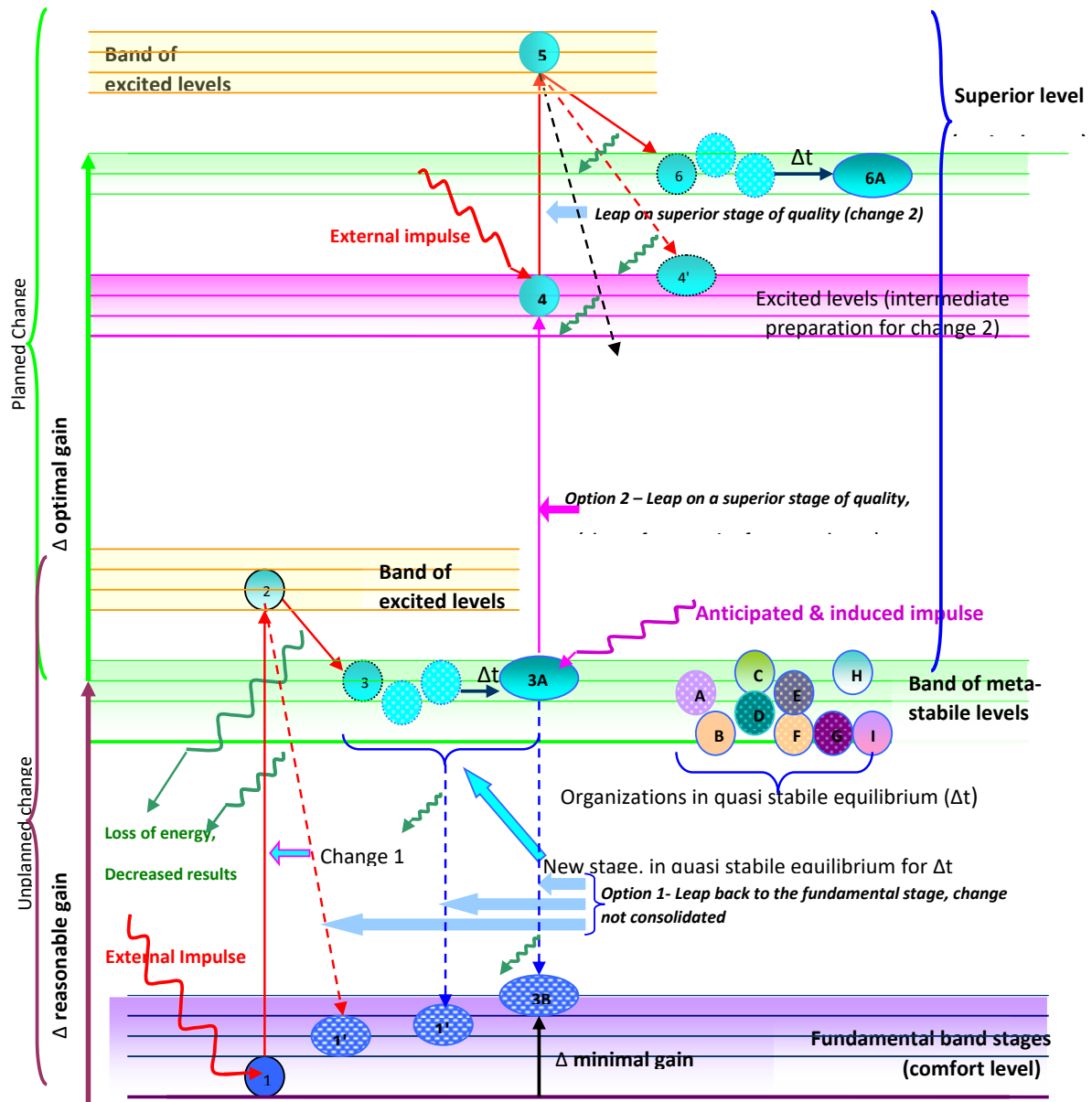


Figure 3. Quantum model of organizational change

Source: authors concept

Unplanned change (1-3A)

As we discussed above, under the action of internal factors, but mainly external, the system performs transition (the change) between *ground state 1* (steady or comfort) a perfect condition to a desired one *excited state 2*.

In fact, within the same physical logic conservation, on completion of the implementation process of change, the organization from the *excited state 2*:

- records failure of change and "falls" on a fundamental level band (1'), receiving, at most, a minor increase results (*minimum gain* ΔG);
- begins a process of transition "compliance with new state" to, ultimately, reposition the *meta-stable level band*, in a *state 3* located close by the theoretical results of the intermediate *state 2*.

Repositioning movement will continue for a period of time Δt , the organization transits via successive states 3-3A as a process of the new status optimization.

We believe that, at this stage of optimization and compliance to the new *final state 3A* (plotted by the transition from the *excited state 2* on a *intermediate state 3* and meta-stable band transitions between levels *meta-stable states 3-3A*), in education organization can be produce variations of initial results obtained through change, and this variation is due to the action of the resistance elements (elements that cannot be completely removed, even if there is a well-developed plan of change). It is one of the reasons for which the evaluation process must be carried out only when the system is stabilized.

Quantum physics has shown that the system cannot stay indefinitely on meta-stable band levels. After a period of time any physical system energy tends to minimum energy state, called the *ground state of equilibrium*, and the organization that has just undergone a change will behave the same way. As long as the organization deals with the *meta-stable states* depends on the intensity of external and internal impulses which, as presented above, are generated and act permanently and also with the resistance forces. Their impact undertakes to leave the state system, sometimes before the completion period Δt . If jumps on lower levels, the system always registers large energy losses and results, which can sometimes lead to a organization dissolution on educational services market (either merging into another organization or their transformation into structures of better organization).

The maximum time interval Δt the system is in meta-stable band differs depending on the type of change. In our opinion it falls within the range of one year (for small amplitude changes such as reorganizations of departments, commissions, extracurricular activities, etc.) and 4-12 years (for depth changes, like the curriculum and organizational structure of the system).

Therefore, since the entry into *state 3*, the manager can adopt one of two behavior options:

Option 1: Manager do not reinforce the status and do not plan other changes: "enjoy" the results, not considering systemic model, do not proceed system analysis, is not concerned that the results of the internal process of change, whether positive or negative, cause effects that reverberate in other elements of the system and sometimes external environment, creating conditions for new changes.

Option 2: The manager is concerned about the institutional development strategy, anticipates and rethinking plan of change with the input measurements of the system located in one of the quasi-equilibrium states 3-3A. Such a manager knows it is a *meta-stable zone* and during Δt , focuses on two directions: 1 - to consolidate state organization (3-3A) by applying measures to improve and 2 - proactive response – anticipate and induce external impulses, develop strategies for change, preparing the organization for future changes and responses to external impulses (3A-6A).

In the first option, the organization permanently under the influence of changes in the external environment, the physical postulates "back jump" on a lower level and at this time the organization goes into a state of lower quality (meta-stable level jump on the fundamental level 3B), obtaining Δ only a minimal gain.

In the second option, the organization under the action of internal and external factors prepares and makes the transition to a qualitatively new state top (6A), at which change mechanism can be resumed, preferably by planned changes.

The vast majority of schools are content with a reasonable gain, positioning itself in a meta-stable state to the maximum allowed time by means of levers, like keeping tuition plan of reorganization method teachers in the CDS rules, keeping duties responsible of departments and commissions, use of their experience etc.

Planned change (3A – 6A)

Leap between states 3A and 6A graphically shows the complex process of planned change that can only be achieved by expert organizations that have effective instruments of change and are led by smart competent and dedicated managers.

In reality, the lack of managerial training those appointed to leadership positions, by analogy with Pareto law, we can advance the hypothesis that from the planned change 80% end as unplanned and 20% are successfully implemented.

The diagram in Figure 3 we proposed that this route of planned change to go into four steps:

a) Jump 3A - 4 in which the agent of change based on the model known by all stakeholders, anticipates and induces an internal and/or external impulse to activate the "seed" of change. By "seeds of change" we are assuming elements of probable cases, existing dysfunctions but lacking visible, stakeholders' innovative and incipient ideas for reform, the results of benchmarking analysis etc. To reach state 4, the system must undergo the problem determination phase (diagnosis, identify failures and problem definition) and more action from the stage of identifying the desired condition (determination of systemic correlations, consultations, analyzes, setup data bases, proposals etc.). In state 4, the organization allocates time to set limits of optimal gain, goals and to plan the change from the superior results they already hold and the analysis of existing force field. This condition is characterized by accumulation of energy, so it is shown on a higher energy level. This energy at a minimal external pulse will be emitted and will place the organization on an excited level 5.

Leap 4-5 correspond to a new implementation phase of change. The organizations are obliged to set up part of the system according with new regulations.

b) Transition 5-6 is the usual decreased results, slightly due to the influence of the resistance forces to change. We specify that, in theory, is not excluded an unrealistic planning that ends "back fall" 5-4' or below, similar stage as unplanned change. In terms of a particular concern for planning assumption we have made this is unlikely in reality.

c) Transitions 6-6A between levels of meta-stable band has the role of the organization, stabilization and can be achieved evaluation phase change.

What differentiates the two types of change, unplanned and planned, is the magnitude and sustainability of gains, appreciable elements in the second case.

In conclusion, we can say that the pattern of change supports the hypothesis that quantum organization leap into a new equilibrium stage, qualitatively superior to previous and larger amplitude can only take place if change is well planned and designed to produce results in line with requirements of external environment. Such an approach to change education organization, based on interdependence with the environment, creates prerequisites for institutional development categories based on involving all stakeholders (internal and external).

In this context, a change model built on the classical models of change, with integrated mechanisms and based on the participation of all categories of stakeholders can be an important starting point in implementing such a process. For this, the school and all its partners must complete two steps:

- to obtain, through training, relevant information about personal and institutional development and change;
- to internalize beliefs about the necessity and importance of the planned change.

Subsequently, success will depend on changes in school quality development tools used, the involvement of stakeholders in all stages depending on the jurisdiction and the responsibility they have, the seriousness and professionalism exhibited during the implementation of each stage.

6. CONCLUSIONS

Starting from the idea that in a school, with managerial performance, is already accomplished the change education of the actors, the solution that we are proposing to improve the process of change is a model that allows a better understanding of the processes of change and to ensure the unity of education theory with practice of change.

The proposed model has a modular architecture durable, but flexible enough to leave room for innovation. It can be made available to school managers concerned by institution development and stakeholders willing to get involved in the change process. Also it is a quality resource management

to transform the traditional development model in a new one based on transparency, diagnosis, planning, involvement, collaboration, evaluation, improvement.

The model can provide answers to questions stakeholders are posting when deciding whether involves in change, such as: "Why?", "Where?", "How?", "When?", "Who?", "Which?"

To achieve change processes and to maximize impact should be considered the following arguments:

- education for change facilitates stakeholder engagement in change, but to fully accept change, they need to know long before initiating the process, how it should be involved. We could say that the pattern of change can answer the question "How do I get involved?"
- managers role, as agent of change, is to ensure cohesion of stakeholders teams collaborating at various stages. Together with the team currently dealing with the stage of *problem determination*, the manager will answer the questions "Why?"
- coherence can be assured of the pattern of change we propose. Therefore, the model can answer the question "When you get involved, at what time and at what level?"
- model mechanisms may organize logically the inputs, outputs and responsibilities. The model answers to the questions "What are my responsibilities?", "What are the methods work?"
- The model can be built upon good governance, with the involvement and collaboration of all stakeholders, as they result in the first stage of research findings. The model answers to the questions "Who collaborate?", "Who is with me in the team and contribute to systemic analysis of change?"
- Existing and knowing the model, with clear procedural mechanisms, ensure achieving good results in short time, with low energy consumption at all stages of change. An answer to the question "Why?" could be formulate.
- The model creates an image of the "whole". Stakeholders can have an overview of the entire process mechanism can think systemically, which help them to efficiently organize actions and corresponding output stage elements are involved, so that they can easily be used as entries for next steps.

Without considering that proposed model of change as universal solution, we believe that any group of stakeholders participates in the change of its own stock of knowledge, skills, experience, desire for improvement and innovation. We are convinced that depending on the implemented change size and institution specific, innovations differ in terms of the type of general or team leadership, promoted values, resources involvement, the order of steps etc. The aim was to present a conceptual model that can be used as a base from which school to create its own model of change, improved and adapted to its specific features.

Further developments

In light of the model can be further detailed and analyzed the mode of action so as to provide a better picture of the processes that may occur.

A particular challenge is the possibility for further research to identify potential mathematical expressions of presented phenomena, able to provide useful information to managers and stakeholders about the change. The interest for all decision makers, but also for the scientific world, but a very big challenge, is designing mathematical models and forms to collect information that enables sizing the energy levels of the state that can be for the organization, the amount of external energy (minimum levels) to determine the activation of the organization, evaluation of results, internal energy intensity which can be achieved.

Also, it could be conducted an analysis of the synergy effects that can be obtained in a planned process of change and sizing them.

Last but not least, measuring external factors change needed in generating the change and internal and/or external factors of resistance to change can be another focus of future research.

REFERENCES

- Aston, J. (2009). „Stakeholder Engagement” Partea a II-a <http://www.responsabilitatesociala.ro> (12.05.2015)
- Burduș, E., Căprărescu, G., & Androniceanu, A. (2008). *Managementul schimbării organizaționale*, Editura Economică, București, p 14; 40.
- Burduș, E., & Androniceanu A. (2000). *Managementul schimbării*, Editura Economică, București, p. 16.
- Druker, P. (1993). *Inovație și sistemul antreprenorial*, Editura Enciclopedică, București.
- Duică, A. (2008). *Management*, Editura Bibliotheca, Târgoviște.
- Colins, E. & Ackermann, F. (1998). *Making Strategy: The Journey of Strategic management*, Sage Publications, London, p.117.
- Hafsi, I., & Fabi, B. (1997). *Les Fondements du changement stratégique*, Transcontinental, Montreal.
- Hellriegel, D., Slocum, J.W., & Woodman, R.W. (1997). *Management des organizations*, De Boek Université, Paris, quoted by Duică, A. (2008), *Management*, Editura Bibliotheca, Târgoviște, p. 219.
- Huberman, A.M. (1978). *Cum se produc schimbările în educație: Contribuții la studiul inovației*, Editura Didactică și Pedagogică, București, 1978, p.30.
- Kottler, J., & Schelesing, L. (1979). *Choosing Strategies for Change* Harvard Business Review 57 R. Ricardo-Overcoming Resistance to Change, National Productivity Review (1995), in Burduș, E., Căprărescu, G., & Androniceanu, A. (2008): *Managementul schimbării organizaționale*, Editura Economică, București, p. 58.
- Mahler, F. (1989). *Generația anului 2000*, Editura Politică, București, p.88.
- Nedelcu, A., Iosifescu, Ș., & Palade, E. (2009). *Management instituțional și management de proiect*, București, http://proiecte.pmu.ro/c/document_library/get_file?p_l_id=88569&folderId=18026&name=DLFE-1003.pdf.
- Petrescu, M., Stegăroiu, I., Năbârjoiu, N., Duică, A., & Popa, E. (2010). *Managementul schimbării și riscului*, Editura Bibliotheca, Târgoviște, 2010, p.11, 29.
- Reeves, J., Forde C., O'Brien, J., Smith, P., & Tomlinson H. (2002). *Performance management in education: Improving practice*, Paul Chaman Publishing, A SAGE Publication Company, London, p.57.
- Spătaru, L., & Cădăriu, L. (2003). *Introducere în cercetarea educațională*, Editura Economică, București, 2003, p. 46, 244.
- Toffler, A. (1970). *Future Shock*, Bantam Books, Random House New York, USA, translated in Romanian 1973, Editura Politică, Bucharest, Romania, p.233.
- Toffler, A. (1990). *Power Shift*, Bantam Books, Random House New York, USA, translated in Romanian in 1995, Atet Printing House, Bucharest Romania, online edition, <https://archive.org/>, p. 356.
- Tripton, C., & Dodu, M. (2012). *Dezvoltare organizațională și managementul schimbării*, Universitatea Babeș Bolyai, Suport de curs, Cluj - Napoca, an universitar 2012-2013 <http://www.apubb.ro/wp-content/uploads/2011/02/Suport-Curs-DOMS-Zi-2012-2013.pdf>, p.20.
- *** Despre educație și numai – Lecții de la Solomon Marcus, Leadershipul mișcă sistemul înainte, <http://ancatirca.blogspot.ro/> și se referă la interviu cu titlul *Maximising School and System Ledership: a conversation with Professor Michael Fullan* luat în februarie 2015 de Manoj Chandra Handa lui Michel Fullan, postat la adresa <http://www.Michaelfullan.ca>, (20 iunie 2015)

- *** *Comunicarea Comisiei Europene, Europa 2020 - O strategie europeană pentru o creștere inteligentă, ecologică și favorabilă incluziunii*. Bruxelles, 03.03.2010 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:RO:PDF>, p.5.
- *** JO 2007/C 311/10 din 21.12.2007, Concluziile Consiliului din 25 mai 2007 privind un cadru coerent de indicatori și criterii de referință în vederea monitorizării progresului spre realizarea obiectivelor de la Lisabona din domeniul educației și al formării, <http://eur-x.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2007:311:0013:0015:RO:PDF>, p.1
- *** Legea educației naționale nr. 1/2011, cu modificările și completările ulterioare
- *** Minister für Kultus, Jugend und Sport des Landes Baden - Württemberg, <http://www.km-bw.de/>
- *** *Proiectul Europa 2030- provocări și oportunități, Raportul către Consiliul European al Grupului de reflexie privind viitorul UE 2030*, www.consilium.europa.eu/uedocs/cms_data/.../QC3210249ROC.pdf , p.5
- *** Proiectul Europa 2030- provocări și oportunități, p.21
- *** Ministry of Education Finland, <http://www.minedu.fi/OPM/Koulutus/koulutusjaerjestelmae/?lang=en>