



# Effect of chaos theory on millennium education management

**Mahshid Darabeigi<sup>1,2</sup>, Ramezan Jahanian<sup>2\*</sup>**

<sup>1</sup>Ph.D. student, Department of Education, Alborz Science and Research Branch, Islamic Azad University, Karaj, Iran.

<sup>2</sup>Department of Education, Karaj Branch, Islamic Azad University, Karaj, Iran

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## ABSTRACT

**Objective:** Today our look to problems is bringing into existence. In the past scientist didn't interested in phenomena like complexity, uncertainty and inconclusiveness, chaos and turbulence, but today these phenomena are so important and scientist are interested on them. Chaos theory has been created and today is so attractive in scientific world and pay attention to disorder, disturbed and non-linear relation. **Methodology:** Disturbance behavior has two specifications as if in one way they are unexpected but in other world they have hidden model in their self. Paradigm effects in organization and management theory can be observed; also you can see this in analyzing learner organization concentrated in brain metaphor and hologram, attention to autonomies teams and decentralize structure and team. As Alvaneer argued scientific management and human relation, quality and quantity and system management are not forgotten and management of chaos and disorder with special characters created. **Results:** Researchers said "traditional thinking must be change till we can use these changes in our profit when changes are continuous, sudden and constant. We are in illogical age; the age that there is big danger but there is big opportunity also". **Conclusion:** As researchers argued chaos theory helps us to study and analyzing complex systems because we enter illogic era, and we can find best solution by reminding principal of certainty and probability. In this paper we pay attention to effect of chaos theory on teaching organization.

## 1. Introduction

### 1.1 Definition of disorder or disturbance

Chaos means disturbance, disorder and undisciplined it is synonyms with turbulence in dynamic. This word means inexistence of discipline. In 1990 Hils said disorder and disturbance is kind of orderly disorder or discipline in disturbance. Bumbling person has discipline because you can never anticipate him and disciplined person has order because all of his done has certainty. Chewing gum is cause of life's disturbance while habit is a cause of discipline. We must know that disturbance is a long time and non-periodic behavior in certain system that is depended to first condition (Yazdan panah, 2013). Usually in disturbance and indiscipline there is order model that is so beautiful.

### 1.2 History of chaos theory

First person who face with disturbance was Hadamard. He found this system was so sensitive, when he worked on sliding particle on without friction surface with constant bending. After Hadamard, when in 1900 poankare studied on moon and earth mass found that this phenomena cannot solve by Newton's force and move theory or Kepler' theory and they seemed to be disturbance theory. This problem analyzes direction and speed's movement that has mutual influence on each other. Bierkhoff, little Wood and Cartwright also study on non-linear dynamic system after poankare. After 1950 chaos theory has more speed, because behaviors that cannot be solved by linear theory become more, in addition by appearing computers in office and organization calculating repetitive one was easy and so many of chaos problem that have easy mathematic problem was also solved. In 1997 for the first time hundreds of scientist held a conference in Italy about chaos theory and exchanged their information (Voss, 1999; Robins, 2002).

\* Corresponding author: [ramezan.jahanian@kiau.ac.ir](mailto:ramezan.jahanian@kiau.ac.ir)

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## 2. Materials and methods

### 2.1 Specification of chaos theory

Chaos theory that is created in new work place has specification as follow:

#### 1. Butterfly effect

This effect shows there is cause and effect relation between phenomena and systems not linear relation. This effect emphasizes on non-linear relation between phenomena and system. This means that little changes in first condition can result in unexpected result in system, and this was the basic of chaos theory.

In chaos or disturbance theory there is points that little changes on them make a big change in economical, social, political and organizational systems so analyzer must pay attention to these point when wants to analyze and regulate related problems (Alvani, 1999).

#### 2. Self-organization

In today's changing environment disorder systems are as live beings and they must innovative and creator if they want to succeeded. internal changes needs that save dynamic power when organization near to coordinate balance, that resulted in changes in dynamic coordination instead of coordination with environment and all relation between individuals, behavioral models, working model, looking methods and cultures changed. In this case little changes can cause big changes in systematic behavioral, and now you can see butterfly effect beside dynamic coordination. Scientist believe disturbance destroyed all coordination and conformity, this resulted in appearing new discipline that is so necessary and created continual innovation in the shade of destroyed system innovation (Stacy, 2007).

Morgan 1997 believed self-organization has four characteristics:

- First, organization must have ability to sense environment's understanding and getting information.
- Second. System must have ability to connect his information by activities.
- System must have ability to understand any kind of deviation.
- Forth system must have ability to executing reforming activity to solve problems.

When there were relation between these four principals in system and environment, discipline comes and when there is problem system intelligently solve it. (Alvani, 1999).

#### 3. Holography

In chaos theory and its activities there is kind of similarities between parts and whole. It means every part of system has characteristic of whole. This called "Holography". In 1984 Denis Gabor defines it as follow:

- Parts have whole specifications and act as whole.
- System has a learning ability.
- System has a self-organizing ability, even if some part of system deleted it can work properly.

#### 4. Surprising attraction

Surprising attraction has regular model that gained from disturbance. We can see Surprising attraction everywhere and every disorder things has regular model on itself. Intense changes, disorder behaviors, unexpected transformation, critical movement and etc also have discipline in itself. Like moving pencil on the paper with equal radius that create a circle. Briefly disturbance in behavior and physical phenomena in organization, society and human relation shows final discipline; so we can say disturbance is not accidental; and shows discipline in disorder and regulation in irregularity (Alvani, 1997).

#### 5. Collage specification

Collage means compounding one or more pictures by cutting or gluing to each other to have meaningful and new pictures.

## 3. Discussion and results

### 3.1 Chaos theory in learning management

Manager must know that a successful organization has dynamic non-linear discipline that was activate in disturbance era, and make dynamic coordination in external relation, little internal systems and functional parts. As mentioned above manager must use more disturbance culture in organization, in this way organization can be more prepared for self-organizing, innovation, continual learning, process basis team activity, innovative relation and recognizing sensitive and important points. For this purpose following measures can be practical:

#### 1. Thinking again about traditional management definition

What is the place of hierarchy structure that is subjected to changing and continual irregularities?

What is the meaning of planning, in system that accident and events has no disciplined model? Does it mean moving in straight line in a meandering way? What kind of organization we need in an inconsistency condition? In disorder and contradiction condition what kind of strategic leadership is useful? One of scientist said: individual who works in brocratic system and know Newtonian structure need big hierarchy and more energy and control to save their system. Newtonian thinking said: be professional in constant management and think about practical things, but today we need coordination, changeability, complexity and effect of management and changing process. (Tabandeh, 1988). Morgan also said: complex theory send this message to managers that hierarchical goals or anticipated logic cannot be good now, he said you cannot manage an organization like building a bridge but they must learn event and accident appeared in time. Manager is a part of these changes. They must make comfortable changing process and do not control organization in traditional form (Morgan, 1997). Today there is no need to learning manager; in learning organization we need learning leaders who besides their co-workers leads cross action in organizational.

## 2. Creating dynamism in manager's looking

Manager must continually change their mind model according to disturbance model condition and specifications. In this way they can make organization fully different with their past, and organize its activity on dynamic mean knowledge and execute that in best way. Therefore not only quality and quantity of tools and way of working are practical in this organization, but also thinking model's of managers must change past and traditional model on job's condition and make organization successful (Jahanian, 2010). Learning managers must lead youth with considering their environment and creating social network and providing internet access everywhere to attract them, they must also change their looking and paying attention to youths' curiosity.

## 3. Changing art and not resistance in front of changing

Disturbance and complex systems always lost between different attractions, this condition lasted till one of these attractions conquered others. After that system again goes to critical points and again contrast begins, in this way evolution process done. Peter Senge believed, in every system there were two kinds of loops, which called "strengthen loops" and "stabilizer loops". Strengthen loops wants dominant attraction and stabilizer loops wants stabilizing and resists. Senge argued that: leader who wants to change their organization always try to confront balancing process, they feel their organization resist but don't pay attention to source of this resists. When you see any kind of resistance it is show that some stabilizing process activated in hidden form. This resistance is not only transient, constant or surprising, but also they are cause of diffidence of traditional fading process. Conscious leader find best source to replace this resistance instead of using force in doing changes in an organization.

## 4. Using organization's consciousness

Knowledge is one of the important dynamic foregrounds in organization. Organizations which want become a disturbance organization must pay attention to community consciousness to create favourable culture. Culture that recognizes dissimilarities as formal, and by this recognition, making a suitable environment for different perspective, ideas and excited different learning process. (Yazdan panah, 2012).

## 5. Criticism accepting in organization

Full and dynamic changes accordance to knowledge and information need continual innovation. In this case we need suitable organizational culture that always review all rules and edited them (Jahanian, 2010). Shampitter well-known economist believed that if an organization wants to be successful in every activity it must be innovative. Organization must destroy past innovation and builds new one, if not other organization did that. Some managers in new and dynamic organization create changes voluntarily and aggravate inconsistency in their organization, Ikko Jiro and Nonako showed in their studies. For example Hyundai and Cannon companies use disturbance and inconsistency as a self-organization (Haji Karimi 2010).

## 6. Little changes, big effect and creating fields for conquering on new attraction

Nonlinear systems in disturbance condition are so sensitive to small changes and little vibration creates big disorder. This effect called butterfly effect. This effect has message for managers it said: not only we need for wide and long system but also should find sensitive and fixed points then with small changes organization move to big changes. Key role of the managers made by complexity and disorder, forming and making field that create suitable figure based upon self-organization. In condition that dominant attraction make an unfavourable condition, must open limitation on disturbance and inconsistency, or even you can create inconsistency .this resulted to creation of new behavioural model. To braking dominant attraction managers must find a new way to innovate new field. For example, they must involved counsellors and professional's mind in unfavourable things like financial and ability and innovation in organization they must pay attention to competitor's condition. Making coalition between key principals that can change exist condition is another way. These strategies make close systems disturbance and they have to move to critical points. In this case if changing force has enough energy can conquer dominant attraction and new attraction replaced. If new activities formed new forming and new fields creates. For example by changing reward model, staff changing and their rules or by making financial problem, human resources regulation and other events system can move to open model (Niaz Azari et al., 2013). We must keep in mind that in complex and non-linear system manger didn't control on any changing. They cannot define "replaceable attraction model". But by changing key principals and by opening system limitation "dominant attraction" can make new fields. In fact changing in organization can create conflict between dominant attraction and new attraction (same source).

Tending to process and team working:

Knowledge and information growing and innovation is Depended on interaction of space and freedom of thought and thinking, in this case relation between thinking can arise in little group. Therefore in any organization in inconsistent condition and in disturbance system must pay attention to pilot process. In this organization that called process oriented, different process made by creating suitable team. In this organization staffs have a information and ability to decide they can use these staffs to making team, so that they become so flexible to forming and changing. Process oriented in organization can be a answer to disturbance condition in management science. In this case process oriented condition must be key part of organization and all system structures and behaviors and activities affected by that (Yazdan Panah. 2013).

## 7. Creating learning organization

Learning that specification of disturbance system is center activity in self organizing, it seems important role of managers in this organization is constructing and creating continual scientific learning fields. Systematic and dynamic thinking can have effective role in individual and organizing learning.

## 8. Recognizing indicator's points

In butterfly effect system is so sensitive to first condition and little changes can create big changes in results, managers must recognize sensitive supports by expanding their conceptual ability, completely distinguish environment and building agents, structure recognize, process, ability and inability of organization and important points, in this way with butterfly effect and little changes and low expense can increases organization's ability.

## 9. Simultaneous stability and instability management

Self-organizing principal cause this mistake that management in disturbance organization is not important. Managing these contradictory principal that are high level of discipline and disorder, simplicity and complexity, be anticipated and unanticipated, stability and instability needs extraordinary policy.

## 10. Management and art of blending

Manager or leader must act as an actor he blends art to make strong sense in viewer. This idea or sense is different from habitual sense of viewer. Manager must know how to manage organization and he must keep in mind that he cannot lead organization by single dimension (Morgan, 1997). Today managers face with nonlinear and complex system that has complexity and dynamism. To leading this kind of organization we cannot use one method, one perspective, one structure or one technology. Because of that they must always match appropriate form of organization. Form of organization has evolutionary nature and change from one attraction to another one. Principals of organization must blend as if every attraction seems new, attractive and productive.

#### 11. Learning new management principal and metaphor

Exact anticipation and planning in complex and non-linear system is not possible, and you cannot impose any condition. Managers only can provide best field for favourable attraction or can change some of parameter that have effect on system (Niaz Azari et al., 2013). Managers must recognize principals as follow: self-organization, learner organization, self-turn teams, self-strength, intelligent organization and metaphors as live organism and hologram that enter into managing document. They must encourage any kind of innovation and practices.

### 3.2 Chaos theory and education

Education has close relation with chaos and disturbance. Recognizing for any student or any class is not possible in first condition or all conditions that will exist later. Disturbance in education may consider in two ways. Teaching is not easy thing. Teacher faces different variables in teaching. He tries to change different variable to teach lesson to student and they learn. Identifying and controlling all the involved factors and variables is no easy task or somehow impossible. Without doubt in learning environment factors like teachers and student specification, constructing learning system, learning containing and so many other variables are effective. Evidently teacher cannot control all of these things. It may questionable that how teacher can provide best condition by all of these different variables. We can say: teacher cannot control all variables but knowing these variable help teacher to decide consciously and regulate his teaching activities (Shaabani, 2005). In their life and in school's world student experience different disturbance, these disturbances affect results and goals of the learning. Teachers and coaches always are in unreliable condition and didn't know the exact way of teaching (Niaz Azari et al., 2013). So, the important point about this point is that teachers must find a way to faces unreliable condition and surrounded all teaching curriculum and educational system (internet.....). Because individuals (like managers and staff) gain information in the past but by passing time and entering new information and technology that information now are old. It means individual involved in new non- literacy, this problem has unfavorable results for organization and individuals (Mohammadi, 2007). Here manager by creating untrue critical condition should encourage his staff to gain new information and technology. One of the characteristic of chaos and disturbance theory is its naturalness, which is so important, although disturbance may create mistrust but make a opportunity to change and hope to future (Niaz Azari et al., 2013). It is natural that in every class there is time that is unpredictable and inconclusive. In spite of existence of advanced teaching technology and class management, in every class there are so many events that may cause advance in students or society. Teachers must ready for disturbance and accept this unpredictable and inconclusiveness. Teachers can not affect all worlds, but can influence on small part of the world. World is full of disturbance and mistrust. Hardly can you anticipate events. In education activities there are also mistrust. Not only anticipating events in class is hard but also recognizing suitable course for individual is somehow impossible and this has simple cause. Education related to fixed world, in this world there are so many disturbance and complex problem (Niaz Azari et al., 2013). Teacher is the key element of chaos in class. Every decision of teacher resulted to unlimited cases. Relation between teaching and learning is so nice and create more misgiving (Niaz Azari et al., 2013). Bochman and Feldown argued that place of life affected stimulation and recognition response and student's behavior. School is the only place that they live. Child who suddenly starts to writing gains his innovation from his teacher and his parents. Student who always did his work flawed write a full complex essay. Lessons which always stimulate one student sometimes may be unsuccessful in stimulating him or her. On the whole, although teachers can anticipate students reactions but it is not permanent. (Niaz Azari et al., 2013).

## 4. Conclusion

Evolution of human body has so many simplicity and complexity. Human being becomes complex and his thinking era, information and technology and social system also become complex. In this evolution every things move together; therefore when individual understand Newtonian thinking, social systems also become complex and understand disturbance and chaos. Today is changing time and there are so many complexities. Managing complex organization, complex goals and complex world, need complex human. Complex human trained in complex organization. Social systems which take their limitations to this fast changes, can understand these complexities, and create a opportunity for themselves. Close systems remain simple and in result their staffs cannot learn how to manage this complex world. Our country as a part of the world needs managers who can lead complex and disturbance condition; so this kind of organization must open their limitation to changes and external exchanges, by this their staff can enter to complexities. Last talk is that without complex human we cannot manage complex system, and without complex field we cannot train complex human. Everyone knows that educational manager and staff cannot control all the world, but they can train small parts of world that are students and affect them, and make big effect on future world. Einstein said: imagination is so important than knowledge.

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