

## **Futurology: A New Possibility in Education**

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### **Abstract**

Being worried about encountering an unclear future has motivated humans to think of travel in time. Therefore, from a long time ago, human beings have been interested in being informed about future. As a result, based on their capacity and abilities, they have utilized common devices to speculate the future. In the era of educational science, the advent of modern social education, changing cultural values, pace of change resulted from improvement in communication technology, the rise in influence rate of newfound media locally and internationally, etc. has made futurology an obligation in this system; hence, creating a structural opportunity to look toward the future and investigate the effective factors in formation of future, future studies make it possible to provide new capacities and abilities and using the chances in future. The method of research used in this study is review, from the descriptive type and is formed by going through related sources, documents and studies.

**Key words:** Education, Research Method, Futurology.

### **Introduction**

Education, or better call it, education and training system, is potentially one of the most vital and significant social entities in development of our country. One of the most significant roles of each educational society is presenting a clear image of an ideal human and the most illustrative witness to necessity of an educational system is taking future into consideration. Pre-school to university education should be necessarily futuristic, as its most function is to equip the students and pupils with the required knowledge and skills to effectively participate both at present or future time (Hemmati, et al., 2015). Taking this system into account would result in development. Based on their education, developed societies are called knowledge-based ones. A knowledge-based society is one where its survival depends on creating knowledge using research and study and technological breakthroughs guarantee it's flourishing. In a knowledge-based society, creating knowledge and providing scientific innovation, with the ability to create science and turning it into innovation, are some criteria for educational systems. In other words, the educational system can have an effective role in forming the future of science and technology. In educational systems, research and scientific entities are formed, which as well as their main duty to creating knowledge and knowledge-based innovations, would

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lead to national pride. Economic and social systems believe that educational ministry should train some citizens, not just residents, as residents ask what society has given us and done for use, while citizens would usually ask what we have done for the society and how we have contributed to society excellence (Hernandez & Mayer, 2011), having said that, educational system is a key to future provided that it educates knowledge-based people, so, a comprehensive awareness should be injected to society and its meaning has to be deepened.

Providence and an endeavor to plan and design for it seriously affect people's lives and has the potential to alter their current behavior and environment; therefore, lack of equipment and technique to help the designers in a near future has been recognized as a demand in designation process (Dash, 2019). When dealing with the term "futures study", the meaning can be comprehended by dividing it into parts and judge about future and the topic being studied using their own mental impression. Being a recently-created terms, futures study is gaining more popularity in different fields and sciences. Kreibich (2006) writes that, "futures study is done using few criteria and its nature is different with that of pseudoscientific proceedings like prediction or science-fiction. Communication, logical coherence, simplicity, testability, vocabulary clarity, domain definition, specifying limitations and borders, practical management and practicality are all among the features of futures study." Futures study consists of providence or divination, philosophy, science, art and the practice of forming likely, possible, and preferred future and their worldview (McHale & McHale, 1975, cited by Nobakht, 2014).

Generally, futures study is an interdisciplinary field, providing us with the ability to recognize the effective events and trends in formation of future changes and achieving future images (Khalili, Heydari, & Yari, 2016). These studies aim to realize what goes on, what is likely to change and what is new (Heinonen & Karjalainen, 2019). However, this is of such importance that some scientists are making an attempt to understand the future pattern based on past and present ones instead of making guesses about the future; in this way, they investigate the probability of future trends and events (Brown & Rappert, 2017). In previous years, future studies have been able to develop appropriately as a distinct analytical tool and takes into account the future of beneficiary fields and facilitates the decision procedure in different levels (Salami et al., 2012). To know more about futures study, the concepts close to which are close in meaning should be identified. Distinguishing divination from futures study can be beneficial in this way.

*Divination:* it means prediction and talking about the unseen. In divination, we are more likely to understand about the future. This knowledge can be achieved using different tools. Sometimes, the tool is inspiration, used by prophets and sometimes supernatural sciences might be used, such as astrolabe, palmistry, and dream interpretation, which some people can achieve using skills and austerity. In these methods, intuitive methods are utilized.

*Futures study:* many educational centers in the world have been founded for this field and known as a scientific field, it aims to gather, analyze and utilize data and scientific approaches to find a way to the future. Therefore, futures study researcher tries to identify and discover future events using scientific, intuitive and experimental methods and then, using scientific approaches suitable for a society's culture, play a role in creating ideal futures. The images futures study provide us with are classified into three distinct categories likely future, possible future, and ideal future.

The main difference between futures study and divination is their viewpoint toward future. Diviner is certain about an unchangeable future, while futures study researcher talks about likely or possible futures based on the evidence. As for the difference between providence with fortune-telling and

divination, it can be said that the common belief with regard to fortune-telling is that it is not based on scientific or experimental fundamentals, while providence suggests the optimum ways of achieving futures which can be experienced in future (Manteghi, 2011).

Long-term plans and approaches which want to speculate future events are a subfield of futures study, which are called strategic providence. Futures study also avoid people who want to pursue supernatural ways to predict future, but tries to understand and apprehend the methods and patterns used by them (Kreibich, 2006). In essence, futures study has changed its way from prediction approaches to heuristic ones and rather than following studies done in a limited time, it mainly aims to follow continuous studies to predict the challenges and future possibilities. Therefore, it mainly focuses on processes so as to involve the learners with the studying procedure and avoids presenting a perspective or a set of future perspectives. To some extent, the reason for such emphasis is that futurologists have realized that it is necessary for their studies message to be absorbed in policy-making systematically (Network, 2001).

### **Futures study epistemological and methodological approaches**

There are four different epistemological and methodological approaches, each having its own independent idea, notable work, and distinct methods and experts, such as:

Futures study is positivist and experimental. In this model which is based on prediction, language is neutral and play no role in creating the real world. Language merely depicts the reality and there is an invisible link between the theory and data. Prediction is based on the hypothesis that the world is run by determinism and the future can be recognized. Anyway, this viewpoint has some advantages for experts (political planners and analyzers, and also futures study researchers who deal with prognostication), economists, and astrologists. Future turns into a technical field and a place to simulate. Generally, strategic conversation in this framework mostly deal with valuable information, as it provides suitable time and a range of possibilities to face the enemy (a rival company or a country). Linear prognostication is technique often used more than others. Rather being seen as suggesting ideas and novice worldviews, the scenarios are used as minute deviation of the norms.

The second type is interpretive futures study. Here, the aim is not prognostication, but finding insight. Truth is relative and language and culture are both crucial in creating a real world. We gather some insights by comparing and assessing different national, gender or racial images about the future. This type is less technical and mythology is as important as mathematics. The main aim of this epistemological approach is learning from each model in the context searching for global stories which are able to present human's basic pivotal value. While viewpoints are mostly in the center of this interpretive approach, structure is also important, being classified according to social class, gender or other social interactions. Political analysis and planning rarely acts as a cultural interpretation of targeting or work analysis.

The third type is critical. The aim of critical futures study is neither prognostication nor comparison; it mainly looks for the problematic units of analysis and not defining future. We are not predicting the population, but mostly deal with the reason of discussing the population factor in conversations. For instance, we ask: why population rather than society or people? The role of government and other forms of power is pivotal in creating dictatorship and authoritarian conversations and in having a certain future. Critical futures study asserts that the current condition is fragile and is merely the victory of a certain conversation or superiority over others. The aim of critical research is to disturb the current relations of power by creating questions about the classifications and reminding other fields.

The fourth type, founded by Soheil Enayat-Allah, deals with learning while doing is the key of developing likely, probable and ideal futures according to the beneficiaries' classification. Learning the content will help facilitate the learning. As a result, future belongs to those who are interested in it. Apart from this, there is no flawless, perfect view. Future is continuously assessed and questioned. Not only the product, delivery system, or procedure is being asked, but the image of future is also put into question. Who is the owner? How is it distributed in the organization? Is it making a view? Is it technical? Is there an official statement about the view, and if there is, does it lead the decision or it is just a supplementary one? (Keramatzade, 2016).

### **Futures study literature background**

Historical studies and analyzing future events go back to 2500 years ago. As the historical documents show, they were primarily common in the Middle East and China. However, analyzing events to be prepared for the future events have evolved to a great extent throughout all these years. In the past, astrology and movement of stars were of utmost significance in predicting future events; however, these days, they aim for making an appropriate future by scientifically analyzing the events.

A part of works written by philosophers and scientists in the ancient time illustrates their concern about the future; hence, they were designing the "ideal society in future". Based on their philosophical framework and affected by the political, cultural, economic and social conditions of their own time, they designed their own eutopia (Manteghi, 2011P).

Saying in other words, those believing in providence have existed from the very early days, but what we mean by providence is rather a recent one. With regard to ordinary people who look into future and aims at understanding the changes, the domain and background of futures study (which tends to investigate mutual affiliation) dates back to the previous century. This text, "prognosticating the effect of scientific and mechanical development on people's life and thought", is so obvious in Mr. Wells' book. He, known as the pioneer of futures study, has dealt with both imaginary and non-imaginary aspects of future, including scenario-writing. It should be admitted that in fact, futures study is a phenomenon finding significance after the Second World War. At the time, the US army had to gather data about the future phenomena unknown at that time. The most significant example is the alarm for nuclear war, which could have turned into the most catastrophic human disaster. At that time in the US, the experts and politicians realized that all the plans should be designed and performed so as to react quickly, as it would be too late to decide upon what to do when the missiles are launched. Furthermore, there was a great need to know more about state-of-the-art knowledge and technology, as in the long-term plans, different parts of army not only should know the available technologies, but also know which is able to use in future and also at that time. This would lead to prognostication in technology.

A research organization founded for this purpose was RAND. In this institute, providence experts like Ted Gordon invented providence methods and expanded them. In 1960s, he published the method using Delphi method with fluent speech. It should also be noted that 1960s was full of political and social turbulences and changes; thus, people tended to know more about providence. The first academic field about futures study was established in Yale University, followed by different research groups and associations in futures study in the late 60s and early 70s. At that time, Department of political science was also involved in this plan and the master's degree of providence was donated at University of Houston (Mahmoudi, 2006).

The primary attempts in this filed was based on the hypothesis that for each choice made today, there can be a future, though cannot be prognosticated confidently and it is often unknown to us;

however, there are always topics which are predictable. From 1980s onwards, providence surpassed its pure military functions and went through policy-making. For the first time in 1980s, the Japanese used providence as tool for policy-making and then other countries used it according to their national requirements. These days, both private and public sectors have involved providence in sectional, regional, and national scale in different fields such as science, technology, culture, environment, etc. Without relying on these procedures in policy-making and executive levels, all attempts for planning and policy-making are considered flawed and unreliable (Heydari, 2012). Japan's aim was to present suggestions to decision-makers in both private and public sectors for analyzing the long-term trends deeply (NYIRI, 2003).

In Europe, in 1980s, France started the first providence schemes, followed by Sweden and Norway and in 1990, the vast majority of European countries like Germany, Netherland and Ireland started using (assessing and experimenting) the tool. The 90s saw a great development in technological providence procedures all over the world, especially in industrialized developed countries. As for the changes occurred in Iran's government due more than anything to Islamic Revolution and the 8-year war, in 2001, there were efficient helpful procedures to make ready for this plan. At the beginning, novice department center of ministry of industry and mine was responsible for this essential action, accompanied by technological cooperation center, and other public entities started their activities after a while. Effective and appropriate implementation of a providence project is needs awareness with regard to aspects of the project. The aspects should be known well so as to create a clear vision for the possible types for each aspect. Choosing a certain type of providence depends on different parameters and factors. These parameters would lead to different performance of providence projects in different countries. The future of futures study is the result of accomplishing the futures study and looks for globalization of a utopia (Soleymani, 2017).

### **Basics of futures study methods**

In the following sections, we deal with some important technics in futures study; however, we should be familiar with the notion of thought in systems.

Thinking about the system is the process of understanding the fact that how policies, procedures or local changes affect the whole world. The process is a way to solve the problem in which problems are part of the system. Systems thought is a framework based on the fact that elements of each system can be understood efficiently when put in environment and in touch with other devices, rather than dealing with them separately. Systems thought goes through the system by investigating the relationships and interaction between elements forming the whole system. Systems thought reveal that events are separated with regard to time and place and a small event can cause big changes in complex systems. This method has some principles:

- Reliance of elements to a system: all the elements are in touch;
- Similar goals: in spite of being formed of different elements and having different behaviors, they all have the same goals;
- Input and output: each system consists of input and output;
- Changing input to output: after entering the system and going through a process, the inputs are changed into outputs;
- Feedback: each system can be controllable by its feedback;
- Environment: each system consists of an environment;
- System hierarchies: each system has the potential to have some higher, similar or lower systems.

Understanding the interaction of internal elements of a system and the relations between each system with other higher, lower or similar systems and the way inputs are changed into outputs and the feedback would enable us to prognosticate the future behavior; hence, system thought is a basis for different methods of futures study.

### **Data gathering method**

In futures study, gathering data is usually done through library and in the case of interview or questionnaire, field study is used as well.

### **Different methods of futures study:**

Futurologists apply different methods to prognosticate; McHale (1975), Nagel and Wellington (2000), and Kerry Beach suggested 17, 6 and 16 methods for providence, respectively. Some experts even came up with 21 methods for futures study (Nobakht, 2009). In the following part, 14 methods suggested by Beach would be presented.

#### **1. Causal Layered Analysis (CLA)**

This method is used as a tool to find the reasons of social phenomena and prognosticating the future paths. As a theory, CLA combines experimental, interpretative, critical and educational methods. As a method, its function is not to prognosticate the future, but creating a revolutionary space to create alternative future. This method is useful in compiling more effective, deeper, more comprehensive and long-term policies (Govahi, 2017). CLA consists of four levels:

Level one is debate: in this level, a hypothesis is discussed based on the current realities with regard to future.

Level two is social causes and systematic view: after presenting a theory about the future, the theory would be assessed according to systematic thought.

Level three is world view: in this level, the presented theory about the ideological and world view ideas and hypothesis are compared.

Level four is causal analysis: in this level, a variety of sciences would be used academically so as to understand the main cause of the phenomena (Heinonen et al., 2017).

To perform CLA, expert groups of different levels can be used. In order to do so, a group consisting of 5 to 20 experts take part in discussion and reasoning (Markridaskis and Wheelwright, 1989, cited by Nobakht, 2015).

#### **2. Phasal TOPSIS Technic**

Phasal TOPSIS technic is one of the commonest technics in making decisions about the multi-criteria MADM, which has significant capabilities. To use this method, we need a decision-making matrix, the rows of which are options and the columns are criteria. With an organized approach, TOPSIS decision-making technic can be generalized to phasal space. Based on the method presented by Hoang and Young (1981), every question type of MADM with  $m$  options assessed by  $n$  criteria can be considered as a geometric system consisting of  $m$  dots in  $n$ -dimension space. TOPSIS technic is based on the concept that the chosen option has the smallest distance with the negative ideal solution (worst condition possible). The significant point in classifying the elements is that in a situation where little information is needed, it is presented numerically, while when the research is done in a qualitative way and the knowledge has some ambiguities, the data cannot be represented

accurately. Hence, a realistic approach would be to use lingual and phasal data rather than numbers. This lingual model has been useful for many issues, such as data recovery, medical diagnosis, education, providers' selection and decision-making (Sayadi, 2008).

### **3. *Environmental Scanning***

Environmental scanning of data collection and distribution is for strategic approaches. This process includes gaining concrete and abstract information in an environment where the company operates or intends to operate. There are three ways to scan a commercial environment:

- Random scanning: it is short-term and done after the crisis;
- Regular scanning: conducted studies are done based on a regular schedule (e.g. annually);
- Continuous scanning: structural data collecting and their process with environmental elements are done continuously.

Most experts believe that in today's turbulent world, continuous assessment is the best way to scan the environment. This method is used in these cases:

Huge environment, economy (GDP, economic growth, unemployment rate, inflation rate, balance of payments, future trends), government (governmental operation, political stability, government debt, budget surplus or deficit, import tariffs, international financial limitations), legal (law of minimal income, unions rules, anti-monopoly rules, municipality licenses), technological (substructure efficiency, industrial efficiency, cost and availability of power), ecology, socio-cultural (population, age distribution, literacy rate, income rate, ethnic), potential suppliers (supplying workforce, materials, services), beneficiaries (lobby-involvers, shareholders, employees, partners); and when a topic is recognized, there are six ways to deal with that (Kreibich, 2006).

- Disagreement strategy: it affects environmental elements so as to neutralize them. This is particularly useful when the environmental variable is under control;
- Compatibility strategy: plans are adapted with new environmental conditions;
- Attacking strategy: the new condition is turned into an advantage;
- Rearrangement strategy: in this condition, aims would change;
- Random strategy: another strategy is chosen randomly;
- Inactive strategy: there will not be any response and the condition is double-checked (Amuna et al, 2017).

### **4. *Scenario method***

A scenario is not an exact and précised prediction of future world, rather it is a description of possible and multiple events that might occur in future (Cairns & Wright, 2018). In another world, scenarios are mixture of imaginary predictions yet realistic views of probable events in future .by using scenarios we can think seriously about what we are going to do later on. In some cases we may want to think about preparations so that it would happen or we might want to make it happen quicker.

Futurologists make a plot by gathering possible and different relatable subjects. this plot or better say scenarios should be plausible ,logical and probable , not just a simple fantasy .futurologist are successful when they represent some different plots and scenarios about future and in codification. After studding readers categorize them as possible and probable. To be more exact writing a scenario is a process with different steps:

First the long-term effective decisions of organization are recognized realistically. Then there is a question about factor that can have impact on these decisions. And after that gathering a long list of

these factors, they start thinking about them to see which one is unavoidable and which one is indefinite (Rahimnia and Haj Agha Memar, 2013)

### **Delphi system**

Delphi system is an organized way which solely depends on expert's ideas. the chosen experts one or two times answer the questionnaire, after each time one person gathers summaries of the predictions and reasons without mentioning the name. in this way technicians will be encouraged to revise their ideas by observing other members' answers .in this process the range of the answers are shorten and the whole group is led toward the proper answer and finally after gathering the factors that has been defined before (e.g. number of rounds , agreements , stability of results) the process will be stopped and average score and average of final rounds will be discussed as result .

### **Key factors of Delphi system**

The following key factors of Delphi system will help contestants to concentrate on the subject. These factors make Delphi system unique in comparison to other systems Structure of information: the early participation of experts as people who answered the questioner and their ideas will be seen.

Unknown contestants: the identity of contestants will not be revealed even after the final report. In this way they will not be using their power to control and dominate others (Nobakht, 2015).

### **Future history**

Future history is a hypothetical and rational history and science fiction writers use it to build a common back ground. Sometimes the writer represents a time table of events and sometimes the reader can recreate the order of the plot base on given information

The word future history was coined by John. W. Compbell in 1941. At first it was use in history concepts and for decades and centuries individuals like jack London and Andre Maurois used it to talk about developing nations and societies. This was followed by people like Asimov in later on works.

### **Future workshops**

Future workshop is a future study technique which was coined in 1970 by Robert Jong and Nobert Mueller. This method makes a group of people to express their new idea and solutions about society issues.

Future study is especially good for those who are less experienced (teens and preteens) in making creative decisions. But this method needs preparations and support by trained individuals (Forsler, 2018).

Stages:

- Preparation stage : method , rules and timetable of workshop will be introduced
- Criticism stage : the problem will be discussed fully and critically
- Fantasy stage all contestants are asked to think about a utopia and make an exaggerated picture of a possible future
- Running stage :comments will be evaluated based on functionality

In this method all contestant will be in a situation that they can express their idea about selected subject limitlessly. This is also called brainstorming (slaughter 1996, quoted by Nobakht, 2013)



### **Failure mode and impact analysis**

Failure mode and impact analysis is a process in executive management that is used in major failure in system, sorting them base on importance and evaluating the impacts on system. This method is mostly use in manufacturing industries and different stages of the products life cycle but these days it has made its way in service industry as well. Any kinds of errors and mistake in process of designing or producing that affects the customer in failure mode will be studied. Analysis of effects studies the results of these failures

It is expensive and time consuming to learn from your failures, while failing and analyzing its effects is a way to survey the breakdowns. This method was first used in 1940 for military purposes and later in aerospace industry to prevent the errors. This method is currently used in different industries like semiconductor processors, food service, plastic, soft wars and health cares. In failure mode and impact analysis failures are documented base on importance of result, frequency of receptions, ease of priority recognition, knowledge and actions which are taken to face the danger

This method is used in designing stages and to avoid future failures and then in controlling stage before and during consumption. This means that it starts from conceptual designing and continues during life cycle of product or service. The purpose of the method is to take some actions in order to decrease the mentioned priorities

Stages:

- **Importance:** in this stage all possible failures are determined based on functional requirements and their impacts. it should be noted that any kind of failure is a component that can cause failure in another component therefore each possible failure should be written as technical words each impact should be numbered from 1 (safe) to 10 (critical)
- **Occurrence:** In this stage the cause of failure and frequency of occurring failure is studied. It can be done through observing failure is process and similar products. all possible and major causes of failure should be recognized and documented
- **Recognition:** When the proper actions are taken their functionality should be checked. Each combination of stage 1 and 2 is given a recognition number. the upper numbers show that possibility of not recognizing the failure is high
- **Risk priority number:** After sorting the occurrence and detectability priority number can be obtained by multiplication of these 3 numbers. With this calculation the areas that are more crucial will be recognized. the highest number should have the most priority in corrective actions (Liu et al., 2015 )

### **Future wheel**

It is a tool that shows direct or indirect results of a change or specific development. This method was invented by Jerome C. Glenn in 1971. Future wheel is a method for organization of thought used to question future and it is kind of a brainstorming. To start the future wheel method the main word that describes the change is placed in center and results that directly and indirectly come from it are sorted around it. We can connect these spots like a tie and show them as concentric circles.

Future wheel is used to organize the thought about future process. With this method all possible impacts are gathered and structured. By using internal connection lines it will be possible to show connection between internal causes and results. Therefore, future wheel can help to extend the multiple concepts about future. This will be done through an aware vision toward future and brainstorming

### **Social network analysis**

A social work is a social structure which consists of individuals (organization) called groups and they are related based on one or two internal links like friendship, relatives, financial deals, hatred, ideological transaction and etc. Social network analysis examines social interactions based on network theory about groups and strings. Groups are actors of the network and strings are relations between them. The reached graphic structure can be very complex and stands among different types of strings. University research has shown that social network operates in several levels from families to nations and plays an important role in solving problems, managing organizations and people's success. Its simplest role is that social network is the final map of majors among all surveying groups. This method can be used to measure social value capital which is the value a person gets from social networks.

These concepts are mostly shown in social network graphs in which nodes and strings are considered as lines. The social network analysis is an eminent technique in modern social studies. This analysis plays a crucial role in anthropology, biology, social studies, economy, geography, science, social psychology and social linguistics and has been an important subject about speculation and study. Social network analysis currently uses a proposed metaphor in an analytical way and it has been changed to a system that continues its basic concepts software and researchers. Analysis obtains from general to detail, structure to reaction and from behavior to perspective. They study either the whole network which means the whole links in a defined population or a personal network which means a relation that specific people have. In social network study the focus is not on individuals, organizations or government but rather on how the structure of a link can affect individuals and their reactions. This method examines the extent in which the structure and composition of strings of norms are affected to be more successful; it's better to have more interaction between networks instead of having more individual relations. In a similar way, individuals can make connections between two irrelevant networks so that they can be effective for their own network. The power of social network analysis is that it distinguishes itself from the traditional social scientific study which assumes that the characteristics of the actors are important. Social network analysis provides other perspectives in which the characteristics of individuals are less important than the relationships between them and the disciplines between actors in the network. This method is useful for explaining many phenomena in the real world, but leaves less room for individual firms and individuals' ability to influence their own success. Social networks are used to examine how organizations interact with one another, to describe informal relationships that connect executives, as well as relationships between employees across different organizations (Freeman, 2017).

### **System Engineering**

Systems engineering techniques are used in complex projects such as spacecraft design, robots and bridge construction. This technique uses various tools such as modeling and simulation, requirements analysis and time planning to manage complexities. System engineering, also called system design engineering, is one of the subdivisions of engineering that describes how to design and manage complex engineering projects. In large and complex projects, issues such as support, coordination of different groups, and automatic control of devices are difficult. This approach deals with business processes and tools for executing these projects, overlaps with technical and human issues such as project engineering and management, and systems engineering is a holistic approach. This approach

covers the whole issue and direct life cycle and on the other hand requires the involvement of different technology disciplines. The need for systems engineering has increased with the complexity of systems. The complexity lies not only in systems engineering but also in the logical organization of data. As the size, data, variables, and number of related fields increase, the system becomes more complex. So in this way the models play a key role. Models represent specific questions about the real world and its process or structure and provide conceptual and mathematical tools for decision makers (Blackburn, 2017).

The term analytics is referred to as the process of gathering information and trying to discover a pattern or procedure. In project management, procedural analysis is a mathematical technique that uses historical survey results to predict future results. This is done by tracking price developments and performance schedules. Although trend analysis is used to predict future events, it can also be used to estimate past obscure events. For example, it may be speculated that some kings may have ruled between the two dates. Today, the method of analytical practice is to study changes in social patterns including fashion, technology and behavioral consumers (Chapman, 2018)

### **Morphological Analysis**

Problem solving etymology is a method by Fritz Zweicki. Non-quantitative solutions to a multi-dimensional problem were invented to explore different solutions. This method derives its name from the science of word rooting in linguistics, in which the structure of vocabulary is studied and the relationship between the form and depth of the words is discovered (Straka et al., 2016).

### **Technology Forecasting**

Technology forecasting technology addresses technological features such as technical performance levels such as military aircraft speed, future engine power, accuracy of a measuring instrument, number of transistors per unit in the coming years. This method does not tell how these properties are obtained. Technology prediction is a logical approach and argues that logical methods have the following advantages:

- They can be learned and taught;
- they can be described and explained;
- they provide steps that can be followed by any trained learner;
- These methods produce the same result, although they have different users

Common techniques of technology prediction include the Delphi method, analogy prediction and growth curves. The combination of different technologies' predictions is one of the most important technologies because the technologies are somehow interconnected; So in the technology prediction method, the scientific combination of predictions comes first (Huang, et al 2018). Almost all manufacturing companies use technology prediction services. Although technology prediction is a scientific discipline, many experts still believe that the only thing that is certain in any prediction is that there will be a percentage of error (Kreibich, 2006).

From perspective of the paradigm of modern futurism that has emerged in scientific societies over the past the past decades within the frame work of the theory school of positivism evaluate the empirical reductionist view of known limitation from this school of thought and its historical developments over the decades. The past shows that postmodernist positivist approaches are more completed images of science that have tried past limitations of the approaches. Accordingly, futurology in new faces has also benefited from interpretive and critical epistemological schools and

new generation of the future has organized a study of cross –cultural knowledge .ideally one should try to use all kinds of future research (Keramat Zadeh, 2016).

### ***Future studies in education system***

Futurism in the education system with an approach to meet future needs of society and educate future generations based on teachings and valuing national and religious in all areas can be used in many ways. according to the principles and principles of future research and its impact on decision making and policy making in determining how and on what educational activities to work, on the other hand, as well as on technology inspiration. Future research methods and their impact on better learning on the other hand can be two main aspects to consider for future research in education. The factors of Future studies in education system are:

- Defining desirable and preferred futures in education;
- An over view of future state of learning technology and its impact on educational and research activities;
- Discovering new opportunities in the field of education due to environmental changes;
- Predicting social and cultural damages caused by new educational conditions;
- Flexibility in the structure and mission of the education institution with the aim of controlling future injuries;
- Reviewing the educational institutions strategies and goals;
- Estimate and determine the future requirements of future education system;
- Visualizing the economic future of the business education market;
- Defining possession of authorities and decision makers in education system in the face of future crises;
- Improving the learning proses influenced by future research methods.

Those who have learned future research techniques and methods can improve the quality of peoples learning .learning future research methods can improve the quality of peoples learning .in other words , not just helps to unconsciously improve its learning quality but also it helps to learn more in other subjects, science and specialties (Hemmati et al., 2015). Familiarizing and learning future research techniques and methods in training of learners can be categorized as:

- Increasing the effective role of educators in discovering the information they and others need;
- Increasing the engagement and interaction of trainers and trainees;
- Increasing the relevance and understanding of curricula with related topics;
- Introduce learners to learning styles;
- Increasing the use of all 5 senses in process;
- Improving learning time in education.

### **Discussion and Conclusion**

What we saw was a brief introduction to futures research and its related methods. Certainly, our country is in dire need, especially in the field of education to deal with this new knowledge. This will not be achieved unless it is with the national determination to advance the country and above all to institutionalize it. Thinking and contemplating in educational decision making and planning so that the benefits can be seen in the form of a long term sustainable program. In the end it can be said at the present the country 20 year outlook is a great starting point for institutionalizing contemplating.

However, it is in the future, but more importantly it is proper implementation and the way it is implanted. We have a clear horizon of implementation of outlook document but it is hoped that the authorities will take immediate action in this regard and lead the Iranian Islamic community to the ultimate goal. In this way the important role of people of country and the cultivation of their thoughts and behavior should not be overlooked. Now let's plan carefully on education of future generation.

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