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Providence and futures study: A approach to curriculum development

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ABSTRACT

Rapid social changes and transformations and expeditious growth of new technologies will confront humanity with challenges in the future. Preparing people to deal with these challenges is one of the most fundamental goals of education and higher education. In this educational systems, the role of curriculum developers is also determinative. Curriculum designers with the help of futurists should always study and explore the future. One of the approaches to studying the future is futures study. They should forecast possible future events through futures study and identify future needs using certain techniques and then form the futures-based curriculum development. In general, in this article, the role of providence and futures study in the development of futures-based curriculum has been discussed. In this article, the probable challenges facing society in various fields; functions of the educational system to meet the challenges; providence and it position in the curriculum; the study of future through futures study approach; future-based curriculum and its requirements; appropriate research approaches for identifying these requirements; and the steps of developing a futures-based curriculum have been taken into account.

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Keywords: Future, futures study, future curriculum.

Introduction

We live in a society, which is changing day by day. According to Silver, Alexander, & Lewis (1981) translated by Khoyi Nejad (1998), we need to prepare and make plan to deal with new events in order to live in a complex and rapidly changing society (p. 531). Societies pay special attention to education in order to pre plan and deal with new events. Therefore, all countries around the world constantly reorganize their education systems. Nowadays, all societies have changed their economic and social structures. They believe that education is the key to make these changes. Everyone expects that educational system prepare people for the world of work and economic independence (NACCCE[1], 1999).

Now the question is how educational systems can respond to all these needs. What approaches should be adopted by the education systems to meet these needs. Another issue lies in how society deals with major challenges. Education prepares the society to deal with these challenges. Knowledge globalization and specialization are addressed as these challenges. Globalization process leads to extensive changes in economic, political and social context as well as development of information and communication. Thus, society has high expectations from the government and the policy-makers may undertake new responsibilities. It should also be noted that human knowledge becomes deeper day by day regarding knowledge specialization. Thus, people should be able to establish proper relationship between their deep professions. Multidimensional view toward various issues and inefficiency of one-dimensional view and

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increased interdisciplinary technologies, complexity of the technologies and human dependence on the technologies has increased the importance of expertise among public people. Individual skills would develop as gaining experience (TDF[1], 2005, p. 13). According to above-mentioned materials, it should be noted that education systems, such as department of education and higher education, should adopt such approach by which future needs are met and ongoing challenges are dealt with. Therefore, the present study sought to answer the following questions:

1. What are future challenges in various areas and educational system how can deal with challenges?
2. What is futurism and its role in planning?
3. How can we study the future through futurism?
4. What is the future-oriented curriculum?
5. What are the needs of future-oriented curriculum?
6. What approaches should be adopted in order to identify the needs of future-oriented curriculum?
7. What are the steps to design future-oriented curriculum?

What are future challenges in various areas and educational system how can deal with challenges?

Every society may face various challenges in the future. The challenges should be anticipated and identified. We can deal with these challenges in the future by recognizing them. Education and higher education are considered as the main departments, which should have developed pre-planned the projects for dealing with various challenges. Future social problems and changes create needs for education. NACCCE (1999) addressed following challenges and responsibilities of for the education systems in order to respond to the challenges:

Economic challenges. Every individual needs a job for living in the future and dealing with economic challenges. He should acquire the skills, which prepare him to accept the next job. In this regard, it is expected that public education prepare people for accepting a proper job in society. Priority programs of the education should be development of reading, writing and counting skills for public people. Without these basic skills, no student can benefit from curriculum. However, future human resources essentially need to acquire creativity, adaptability and communication skills, so that they can deal with the fundamental challenges they encounter in the future.

Nature of job. There is always a growing global demand for the education that develops human resources, especially the ability to communicate and be creative and innovative because these skills are always required to develop new products, services, management styles, and creative individuals in business area in order to meet the business market needs. Creativity is required in various forms of trade in all types of jobs. Therefore, education and higher education should prepare people and design their programs to meet the challenges of nature of the job based on the skills needed in the future.

The need for adaptation. One major challenge is the need to adapt due to massive changes and developments occurred in social life. Some young people expect to change not only their jobs, but also their working schedule. Here self-employment, short contracts, freelancing and entrepreneurship are emphasized. Transnational companies are now employing the workforce based on their skills from anywhere around the world. The youths need high-level skills to adapt with the complex competitive world of global markets. They also need to adapt themselves with new opportunities and changes. Therefore, the educational system should consider this challenge in their future plans and prepare people to deal with the challenges.

Academic inflation. Nowadays, scientific evidence continues to rise. Increasing scientific evidence at various levels has led to academic inflation. It should be noted that scientific evidence alone is not enough in current working fields nowadays. Employers have increasingly focused on creativity, communicational skills, empathy, adaptability and social skills. Therefore, the education system should focus on exploration and creativity and give public people the ability to adapt with rapid and continuous changes in the future.

Technological challenge. Technology changes increasingly and rapidly across the world every day. New technologies have penetrated in all areas of our lives. Young people often prefer facilities of new technologies to their teachers. While these technologies have many advantages, they are also a threat to young people. Given these challenges, the education system should not neglect these threats. The education

[1]. Tomorrow Development Foundation

should also take into account the advantages of new technologies and make proper plans for the future accordingly.

Social challenge. A combination of economic and technological changes modifies the social landscape. In several areas, changing traditional patterns of work has a strong influence on individual social lives and communication. This may also lead to unemployment for several people. This also has several advantages in social sphere regarding other areas of interest. New technologies have made major changes in social and cultural spheres through public access to global culture. As a result, the education system should raise such knowledgeable people who would not be affected by social challenges.

Personal challenge. People spend most of their growing years at school. Their needs would not suffice to academic aspects. They are both social and emotional (they have feelings. They need to communicate. They also should be supported emotionally). People need such education that will help them to find their goals and understand themselves and their lives. This is because young people have many emotional problems in society nowadays. Schools should help the youths to explore and express their emotions and feelings in both positive and constructive ways. Traditional academic curriculum is not designed for this purpose.

Thus, education should be organized according to four basic approaches in order to deal with future challenges, so that the individual can benefit from such education as a basis of knowledge during his life. These four pillars are as follows: learning for knowledge (i.e. to access understanding tools); learning to live together (i.e. collaborating with each other in all human activities); learning to act (i.e. affecting the environment and using what was learned); learning to be (i.e. the fundamental way in combination with three previous approaches) (Delors, 1998). On the other hand, the education system should be futurist (have foresight) in order to deal with future challenges and situations. Prior to discussing future study approaches, futurism should be discussed. This is discussed in the following.

What is futurism and its role in planning?

The Japanese people used futurism concept as a policy tool in the 80s for the first time. Nowadays, futurism is considered as a governmental decision-making tool in political, technological and academic environment. Futurism refers to being prepared for the future and using available resources in the best way possible in line with values. Futurism not only refers to understanding possible future, but also readiness to making decisions for the future. Futurism begins with identification of future options and identifies probability and utility of the options by evaluating them (TDF, 2005, pp.24-26). Futurism aims to help the youths in current years to deal with future crises and capture the opportunities embedded in a changing world (Silver, Alexander and Louise, 1981; translated by Khoyi Nejad, 1998, p. 533). Various goals were considered for futurism in different futurism programs. Several futurism programs have focused on supporting the planning measures. Several other program put more emphasis on education. Several other programs emphasized on trying to motivate the people while others focused on trying to better understand society. The actual position of futurism refers to strategic thinking in organizational planning. Our new decisions and trends are based on the data from futurism. The outcomes of futurism modify our view and perception on future (TDF, 2005, p. 27).

How can we study the future through futurism?

According to Goodman (1984), 100 cases were true among 137 predictions about the future. Accordingly, more attention was paid to future studies based on other more accurate predictions (quoted by Amara & Salancik, 1972). There is no doubt that future uncertainties and opportunities should be identified using appropriate methods of future study. The more reliable these methods, the more important the results of future study. Thus, future study is one appropriate strategies to deal with the challenges previously discussed.

Future study refers to any activity, which enriches understanding of future consequences (Amara & Salancik, 1972). According to Longstreet and Shane (1993), future study refers to a study about the future. Future study is a systematic discipline to explore future possibilities in a given period (Siraj, 2005, 2007). Research on the future is affected by discipline, professions, and various future phenomena, which develop future of the world. Researchers provide information about the future in this way. The information includes the discipline and future profession and phenomena that have shaped the world.

Future studies should have the objectives. be as a minimum strategy to enable societies to plan for their future; used to demonstrate future possibilities and options and help policy makers and planners to design a program for the better future (Ayers, 1969); helps policy makers and curriculum planners to decide on identification of the best preferred future and high likelihood of the future events that might occur; helps policy-makers and curriculum planners to use future study to design an operational programs in order to avoid incorrect assumptions about the future; used to help specific groups to express their opinions and choices about the future; used to express probability of the preferred future (Bell & Ramirez, 1997).

According to above-mentioned materials, it should be noted that future probable events should be predicted in order to deal with future challenges. Plans should be made to deal with possible events and future challenges. The curriculum should be designed for the future. The future curriculum is discussed here.

What is the future-oriented curriculum?

Curriculum should be designed in such a way, so that learners constantly be aware of new changes and situations and always be ready to have a new mission. This preparation cannot be made unless the organization's future is defined (Hamidzadeh & Fathivajargah, 2009). Futurism is considerably important in curriculum planning because our perceptions on future would help to make appropriate changes in the curriculum (Silver, Alexander & Louise, 1981; translated by Khoy Nejad, 1998, p. 531). Long Street and Shane (1993) suggested that future planning does not mean changing what is being decided; however, future planning is mostly focused on proposed possibilities and effects in future planning. According to Snow (1999), future scenario depends on making decisions on the policies made currently.

The importance of future curriculum. 1) The future curriculum is an important element in either designing or planning a curriculum in an institution or country. 2) Predicting the future along with information can help a company or country to be prepared in various fields such as financial resources, infrastructure and human resources in order to accomplish the goals. 3) Other goals relevant to future of a company or a country can be accomplished through modification (change), which is a key element in the future curriculum. 4) Research data on future curriculum can control the pressure imposed on implementing a detrimental curriculum. Research data can also provide the curriculum, which can meet current and future unexpected needs of society through training educated people with open minds. 5) Future curriculum designers and planners equipped with future curriculum expertise can analyze philosophical principles of a country, needs of young people, and the crisis to select the best policy and goals of future education and resolving future problems. 6) Curriculum planners and designers would not have to deal with any crisis in selecting policies and future educational goals through future-oriented approach (Siraj & Abdullah, 2011).

Defining the future curriculum. The curriculum is considered as a plan consisting of a wide range of meanings, which covers a fully designed program (Slaughter, 1997). Future curriculum is considered as a plan or program of education for the future society (Siraj & Abdullah, 2011). Thus, future curriculum is considered as a program designed today for tomorrow based on systematic forecasts. Every aspect of the curriculum covers objectives, content, implementation strategies in addition to empirical data on need assessment obtained through research. Curriculum should be used in the education system based on what implemented in the education system, which presents a clear path to create a better future, regardless of cost of energy and resources (ibid). The future-oriented curriculum should focus on developing such capabilities as job skills, active participation in democratic life, learning to understand, etc. for the learners because these capabilities are needed in the future (Ecclestone & Pryor, 2003).

What are the needs of future-oriented curriculum?

The needs are assessed for curriculum planning prior to development of any curriculum. For example, following needs were determined by futurists during designing a curriculum as follows:

Thinking, evaluation and analysis. these skills are not only related to the capability of the students to learn cognitive materials, but also the ability to analyze and evaluate information. The future curriculum should focus on intellectual skills to suggest creative solutions to solve complex problems.

Identifying the environment. several team projects have focused on designing the academic curriculum, which focuses on environmental needs. The students should be actively involved in the projects, which focus on the environment, conserving energy and recoverable resources.

Accessing information and solving unknown problems. accessing information and solving unknown problems are considered as requirements of future curriculum. The groups in problem-solving teams are directed in a creative manner through team teaching and collaborative learning activities in the curriculum. Most of team activities focus on open-ended questions.

Personal competence through lifelong learning. the students are not only in the transition period from childhood to adulthood, but also at the time when the highest rates of changes have occurred in the world in human history. The curriculum should cover this need.

Social diversity and global citizens. In this regard, several skills are identified for the needs of future curriculum such as the need to recognize the role of individuals and society, understanding the importance of social diversity, and the responsibilities associated with global citizen. Therefore, the curriculum should cover these topics and make the students actively involved in learning these topics through teamwork and cooperative learning activities (Lundt, 2012). The students should be equipped with above-mentioned skills to deal with the 21st century challenges. Based on the assessment, curriculum planners can formulate objectives, methods, resources, implement the curriculum and ultimately develop the future curriculum.

What approaches should be adopted in order to identify the needs of future-oriented curriculum?

To identify and determine future needs, futurists and planners of curriculum use various techniques. Several techniques are mentioned here as follows:

Delphi. Delphi is an approach to reach a consensus of experts' opinion about the future without any personal influence (Siraj, 2007). Delphi technique should be conducted taking five principles into account: Privacy: Samples should be chosen individually with each sample having no knowledge of the identity of the others in an expert panel; Relationship: Samples only know the responses of the others in the second round when the researcher has performed the data analysis; Samples would not face any pressure from any parties or other samples while responding to their questionnaires; Data would be analyzed statistically; and Data which is given by a sample would be free from bias, allowing the panel of experts to carry out their role to come to a decision or build consensus (Linstone and Turoff, 1975)

Trend analysis. Trend analysis is a highly commendable analytical tool and can be quantitative and/or qualitative. It should be always contextualised in the environment that has produced the trend. In foresight work, trends are not the end game, but one input into the development of what I call a change, ecosystem that includes changes at personal, local, national and global levels. Trends should be analyzed whenever possible using both hindsight and foresight. Analyze the connections and path of the trends you are exploring in the past for as long as you want to investigate how they might play out into the future (Conway, 2015).

Morphological analysis. This method implicates mapping options to receive an overall perspective of possible solutions. Morphology refers to the "shapes" of a given "object"; morphological analysis includes identifying all possible combinations of these "shapes" to determine various future possibilities. For example, if the "object" is a goal, such as achieving an effective transport infrastructure, the "shapes" might involve various transport modalities being highly efficient in their own right, or various multi-modal combinations being efficient. Morphological analysis has been used for new product development and in constructing scenarios – and in both cases is a tool for thinking systematically about the topic of concern. The technique allows for a systematic analysis of the topic, and provides a strong stimulus for thinking laterally about alternative ways of meeting challenges (Practical guide to regional foresight in the United Kingdom, 2002).

Futures wheels. A group brainstorming technique to quickly determine what some of the first, second, and third order consequences might be, 'if' some event were to occur in the future--either for the first time, or if something were to either decrease or increase in value in future. Everything follows from this event put in the center of the futures wheel (Smoker & Groff, 2003).

Future scanning and analysis method. Future scanning and analysis method is grounded on a systematic worldview of the future. This systematic worldview refers either to individual process or group network process, but not a group brainstorming method which is not systematic. Findings from this process are not only comments which are motivated, driven or self-expression, but contain elements which can be evaluated. The aim of this method was to develop scenarios which are known as the art of strategic conversation. The conversation in the group may result in individual creativity and new strategic thinking.

These creativities and thinking need to be arranged and realized. The method mainly aimed to develop a system based on individual views on the environment or surveying work frame where changes could happen (Siraj, 2007; Friman, Tufvesson & Woodling, 2000).

Environmental scanning. Glenn and Gordon (2004) emphasized that the term "environmental" here did not refer to the physical environment. It referred to the social, political, technological and economic issues. Today, this method is used by many large companies and higher institutions everywhere in the world as a part of their planning process. Analysis of this method involves systematic data collection in external situations, relating to the companies or institutions to aid them to understand the current development and social trend, technology, economy and future politics which could bring about impact to the future (Siraj, 2005).

Cross impact analysis. Cross impact analysis explicitly explores the mutual impact of events and trends. The events and trends being investigated should be those that have been recognised as the ones that are expected to have the most impact on the futures being considered. This is primarily a quantitative technique, but can also be qualitative if done as a group task – rather than having a computer run the analysis, people in the group discuss the probability and degree of dependencies. Cross impact analysis is frequently used in conjunction with the Delphi method, and is also used as part of scenario development to explore how future trends and issues might play out over time (Conway, 2015).

Technological forecasting. An attempt to forecast what technological breakthroughs and developments are probably to occur in the future and when they are likely to occur. In an age in which technology is a major driving force for change, such as today, keeping on top of the latest developments in technology is essential--particularly if one works in the high technology area today (Smoker & Groff, 2003).

Scenario planning. According to Kahn and Weiner (1967), the method Scenario renders focus on cause process and to aid in difficult decisions. Schwarz, Svedin, and Wittrock (1982) noted that Scenario has several meanings: (1) It may be used for probability or improbability; (2) It can be used as a hypothesis; (3) Development or situation; and (4) Changes which occurred due to the action or responses of several individuals which are needed or not in the development or situation. The advantages of this method are: Be able to show connections among trends and events to illustrate accurate futures; Be able to aid in evaluating inner stability of a set of forecasting; and Be able to display future situations which the public can comprehend well (Martino, 1983).

Seven questions. This technique is used to draw information from very important individuals, such as senior managers and decision makers, regarding the future. The seven open-ended questions cause the interviewee to pause, think out loud and to imagine themselves in the future. The seven questions are designed to explore the information that the interviewee may have about the future, but which they may not have expressed yet. When should I use it in a project? At the beginning of the project, Who should attend/take part? Senior managers or other people who may have a good overview of the subject you are addressing, How do I do it? This technique was pioneered by Shell. Gill Ringland, futures analyst, in her book Scenario planning: Managing for the future, lists the seven questions as follows which are typically asked in an interview format:

1. What would you identify as the critical issue for the future?

2. If things went well, being optimistic, but realistic, talk about what you would see as a desirable outcome.

3. If things went wrong, what factors would you worry about?

4. Looking at internal systems, how might these need to be changed to help bring about the desired outcome?

5. Looking back, what would you identify as the significant events which have produced the current situation?

6. Looking forward, what would you see as priority actions which should be carried out soon? If you were responsible

7. If all constraints were removed and you could direct what is done, what more would you wish to include?

There is always scope to modify or reword the questions to suit the project, but this general outline is kept. The Seven Questions tool has been modified successfully as the basis for roundtable discussions in a number of recent workshops facilitated by GO-Science. What outcomes should I get from it? This is a useful way to engage with major decision-makers that is formal and allows them the opportunity for deep and wide-ranging thought (The Futures Toolkit, 2014).

What are the steps to design future-oriented curriculum?

Designing future curriculum should clearly determine the course of curriculum to direct the curriculum on the path of national goals or next generation progress. Due to the fact that humans are able to determine their own future development, the critical and challenging future position can be better managed provided that future curriculum was designed properly and systematically (Siraj, 2005). Given the above-mentioned materials, a model can be proposed for future-oriented curriculum. According to this model (Figure 1), the steps to design the future curriculum can be addressed as follows:

A. Identifying the future challenges and predicting possible events. Futurists should identify major events that may occur with high probability in the future prior to any other plan and predict the analytical aspects related to education (including socio-economic, political, human resources, energy resources, agricultural, or even military analysis) and national and global trends for the future (Siraj & Abdullah, 2011).

B. Identifying future needs. Prior to identification of future probable challenges and events, futurists can identify future needs through such techniques as Delphi, brainstorming, morphological analysis, trend analysis, scenario planning, environmental surveys, patent analysis, dependency tree, interactions, the next cycle.

C. Designing the future-oriented curriculum. At this stage, curriculum planners design the future curriculum based on future needs.

The process of future-oriented curricula is shown in the following model for better understanding. The result of this process is such program, which meets future needs. The curriculum prepares people for future challenges. Following elements are considered in the curriculum such as objective, content, learning strategies, materials and resources, learning activities, etc. and future needs in all aspects. These elements are set according to future needs.

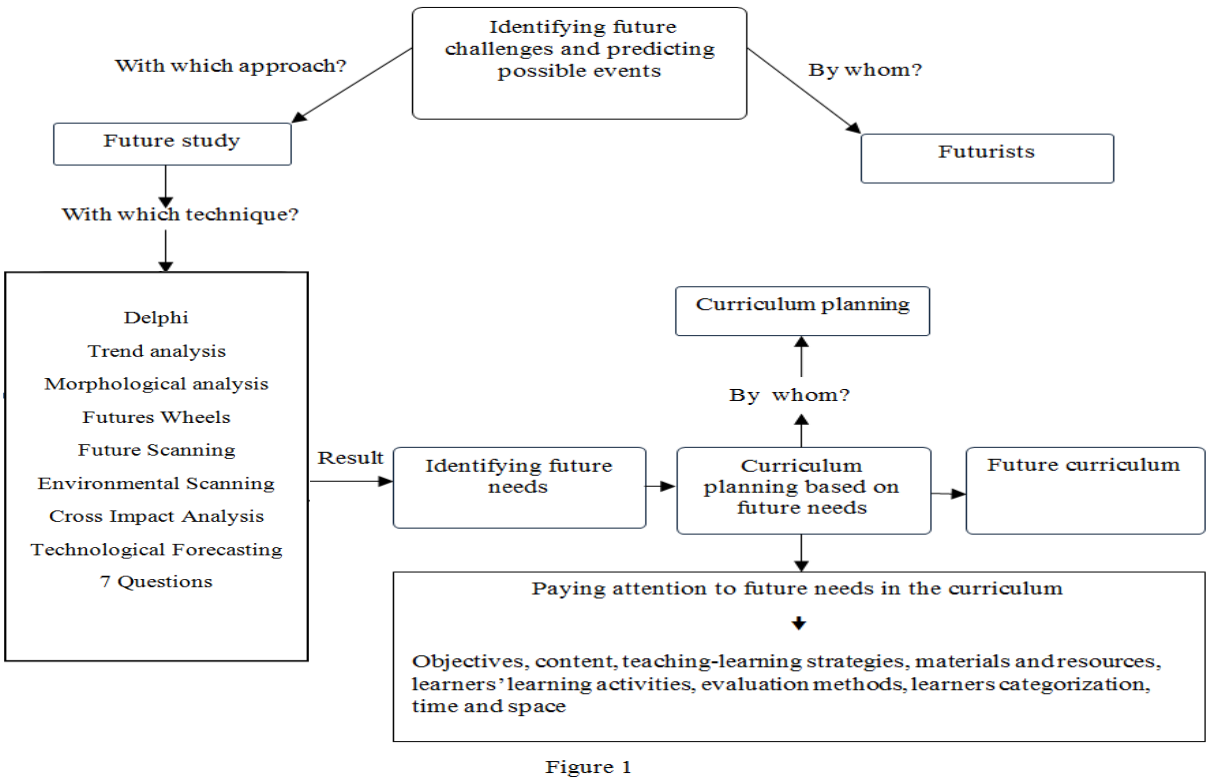


Figure 1. The process of future-oriented curricula

Discussion and Conclusion

Societies are constantly changing and evolving. The rapid growth of technology and development of social life force human beings to encounter future challenges. Although some argue that the future is unpredictable, the future events can somehow be predicted using academic methods. According to the forecasts, the needs can be identified to pre-prepare people to meet the future challenges. This requires prior planning to deal with new events. Education and Higher Education are such departments, which prepare people to encounter the challenges. The education system looks forward to curriculum planners for resolving this problem and seeks help from curriculum designers. Curriculum designers study the future with the help of futurists through future study approach. The futurists can predict the future probable events using appropriate methods. Then, they identify and determine future needs of the curriculum based on predicted events. Curriculum designers can plan and develop the future curriculum by identifying basic needs of the future curriculum. This curriculum prepares individuals to deal with various challenges and teaches him the skills needed to live in the future. The future curriculum helps people to be prepared to deal with future challenges. Future curriculum can teach people the knowledge and skills needed for the future. Nowadays, entry into the digital era and predicting future of the digital world require a responsive curriculum. Future curriculum should satisfy cultural, economic, social, political needs, etc. Due to rapid changes in technology, it should be noted that the curriculum responsive to future needs should be designed so as to include a special position for technology. A future-oriented curriculum should focus on the learners' capabilities for developing occupational skills, active participation in democratic life, and learning to understand.

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