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Research Paper

Developing a dynamic system model of Islamic education for the Islamic Republic of Iran

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Abstract

Aim: The dynamic components of the philosophy of education should be identified for developing a dynamic system of Islamic education. The main purpose of this study was to develop a dynamic system of Islamic education using the dynamic components of education. The Delphi qualitative survey method was used. These components were considered as independent variables. To enumerate the dynamic components of the philosophy of education, 54 default high dynamic subcomponents were initially categorized into nine more general components. A community of 151 experts in the field of Philosophy of Education was considered nationwide, of whom 20 people completed the validated Tuckman semantic differentiation questionnaire. Convenience sampling was used to select samples by controlling the variables of teaching experience and higher academic qualifications. Kendall's W test was used for a measure of agreement among experts in the SPSS software using descriptive statistics. The results showed that all nine hypothesized components and their sub-components were approved by the samples, and a dynamic system of Islamic education can be designed consisting of these nine components. The components were foresight, use of advanced technology, exchange of information and communication, harmony with nature, security, flexibility, reliance on revelation, the constructive role of humans in education, and being

systemic. As a result, a dynamic system of Islamic education consisting of these nine components was designed and presented. This model is recommended for use in Iran's education system.

***Keywords**: Education, Islamic Education, Dynamic System*

Introduction

The aim of this study was to develop a dynamic system of Islamic education for the IR of Iran. Existing models were often presented in a system consisting of two or more components. These components are to some extent effective in providing system dynamics, but their quality leaves room for contemplation. A system based on linear logic has defects that are not present in spatial logic. To this end, the three stages of design, implementation, and evaluation are evident in Schwab et al.'s (2017) "An educational system with hierarchical concept designs and dynamic nonlinear educational designs", in system security according to Shukla et al. (2017), system flexibility (Bayley, 2021) components of "Creative thinking outside the box, seeing everything from different perspectives, and quick adaptation and flexibly to changing circumstances" (P206), system integrity (Becher, 2021) and online teaching (Morreale et al., 2021), foresight (Utkin et al., 2014), system reform (Rohrer et al., 2021), Soylu and Yelken's (2014) lifelong learning, Velaswa's (2014) dynamic approach influenced by the learning environment, and Aubusson's and Panizzon's (2016) emphasis on forward-looking education. Teaching design is the distinctive part of this section, but developing a model to educate is by far more extensive. According to structuralists, a whole is different from its set of components. In a study by Yakhchali (2016), a systemic holistic view is cast on the dynamism of factors affecting education, and the role of environmental factors and social entities in educating 7-14-year-old individuals as a subsystem of a larger system called education. Nuhoglu (2020) also discussed quality improvement for education and the need for educational studies to be based on system dynamics. The present study examined the system dynamics for education with a holistic, structural viewpoint, and asked the question: what are the components of a dynamic education system?

Methodology

The Delphi method for a qualitative survey was used in this research with an applied approach. The data collection method was descriptive, including seven stages: 1) Selecting a number of dynamic components in the philosophy of education, 2) Preparing and dispatching the questionnaire to

experts for validation, 3) Revising the questionnaire and redistributing it for data collection, 4) Collecting the questionnaires and preparing tables from the information provided, 5) Analyzing the data in the tables with a computer, 6) Using SPSS software for the statistical interpretation of data and preparation of a dynamic education system model, 7) Reporting the findings of the research. The Tuckman (1988) semantic differentiation questionnaire was used for data collection. The validity of this type of the questionnaire is its frequent use by researchers in their studies. This scale was slightly modified by the researcher. Its validity and reliability were established through test retest and correction by expert recommendations. The research population was composed of graduates of the philosophy of education nationwide (a Telegram® channel with 152 members). Of these, 20 were selected using convenience sampling to complete the questionnaires. Sample demographics included age, gender, experience, and education. The nonparametric statistics of Kendall W test was used to assess agreement among experts. This test was used to measure the degree of consistency in the evaluation of experts.

Results

The 54 coded subcomponents yielded nine core components. One item was generated for every component in the questionnaire.

Table 1: Dynamic components of education

Components/Subcomponents Samples	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Sum	Mean
1. Foresight	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	60	3
2. Advanced technology and tools	1	2	3	3	3	1	2	3	3	3	2	1	3	1	2	3	1	2	3	3	45	2.25
1.2. Advanced tools	2	3	3	3	3	2	3	3	3	3	3	2	3	2	3	3	2	3	3	3	55	2.75
2.2. Advanced facilities: a) up-to-date design and roadmap	2	2	3	3	3	2	2	3	3	3	2	2	3	2	2	3	2	2	3	3	50	2.50
2.3. Advanced facilities: b) up-to-date premises	1	2	2	3	2	1	2	3	3	2	2	1	2	1	2	3	1	2	2	3	40	2
2.3.1. Advanced equipment	0	2	3	3	3	0	2	3	3	3	2	0	3	0	2	3	0	2	3	3	40	2
2.3.2. Adequate lighting in the premises	3	1	3	2	3	3	1	2	2	3	1	3	3	3	1	2	3	1	3	2	45	2.25
2.3.3. Adequate space	1	1	3	3	3	1	1	3	3	3	1	1	3	1	1	3	1	1	3	3	40	2
2.3.4. Cheerful design and colors	-1	2	3	3	3	-1	2	3	3	3	2	-1	3	-1	2	3	-1	2	3	3	35	1.75
2.4. Advanced programming	3	3	1	3	1	3	3	3	3	1	3	3	1	3	3	3	3	3	1	3	50	2.50
3. IT exchange	2	2	2	3	2	2	2	3	3	2	2	2	2	2	2	3	2	2	2	3	45	2.25
3.1. IT exchange and interaction with others	1	1	3	3	3	1	1	3	3	3	1	1	3	1	1	3	1	1	3	3	40	2
3.2. Advanced communication skills	1	2	2	3	2	1	2	3	3	2	2	1	2	1	2	3	1	2	2	3	40	2
3.3. Internet connection	0	2	3	3	3	0	2	3	3	3	2	0	3	0	2	3	0	2	3	3	40	2
4. Harmony with nature	0	1	1	2	1	0	1	2	2	1	1	0	1	0	1	2	0	1	1	2	20	1
4.1. Respect for human nature	1	1	3	2	3	1	1	2	2	3	1	1	3	1	1	2	1	1	3	2	35	1.75
4.2. Respect for animal nature	0	0	3	2	3	0	0	2	2	3	0	0	3	0	0	2	0	0	3	2	25	1.25
4.3. Respect for plant nature	1	-1	3	2	3	1	-1	2	2	3	-1	1	3	1	-1	2	1	-1	3	2	25	1.25
4.4. Respect for the environment	2	1	3	2	3	2	1	2	2	3	1	2	3	2	1	2	2	1	3	2	40	2
4.5. Belief/practice in global/environmental growth	1	1	3	2	3	1	1	2	2	3	1	1	3	1	1	2	1	1	3	2	35	1.75
4.6. Respect for life	2	1	3	2	3	2	1	2	2	3	1	2	3	2	1	2	2	1	3	2	40	2
5. Security	3	2	3	3	3	3	2	3	3	3	2	3	3	3	2	3	3	2	3	3	55	2.75

5.1. Intellectual and cultural Security	3	2	3	3	3	3	2	3	3	3	2	3	3	3	2	3	3	2	3	3	55	2.75
5.2. Social and political security	2	1	3	3	3	2	1	3	3	3	1	2	3	2	1	3	2	1	3	3	45	2.25
5.3. Economic security	0	2	3	3	3	0	2	3	3	3	2	0	3	0	2	3	0	2	3	3	40	2
6. Flexibility	3	1	3	3	3	3	2	3	3	3	1	3	3	3	1	3	3	1	3	3	50	2.50
6.1. Using online education	1	2	1	2	1	1	2	2	2	1	2	1	1	1	2	2	1	2	1	2	30	1.50
6.2. Using technology	0	2	2	3	2	0	2	3	3	2	2	0	2	0	2	3	0	2	2	3	35	1.75
6.3. Professionalism	1	2	1	3	1	1	2	3	3	1	2	1	1	1	2	3	1	2	1	3	35	1.75
6.4. Using public education	2	1	3	3	3	2	1	3	3	3	1	2	3	2	1	3	2	1	3	3	45	2.25
6.5. Lifelong learning	0	1	3	3	3	0	1	3	3	3	1	0	3	0	1	3	0	1	3	3	35	1.75
6.6. Distance learning	0	1	1	2	1	0	1	2	2	1	1	0	1	0	1	2	0	1	1	2	20	1
7. Reliance on revelation	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	40	2
7.1. Human need for growth	1	2	2	3	2	1	2	3	3	2	2	1	2	1	2	3	1	2	2	3	40	2
7.2. Theism to achieve growth	1	2	3	3	3	1	2	3	3	3	2	1	3	1	2	3	1	2	3	3	45	2.25
7.3. Religiosity for closeness to God	1	2	2	3	2	1	2	3	3	2	2	1	2	1	2	3	1	2	2	3	40	2
7.4. Relying on the teachings of the Quran and narrations of the infallible	2	3	0	3	0	2	3	3	3	0	3	2	0	2	3	3	2	3	0	3	40	2
8. Constructive human role in education	2	2	1	3	1	2	2	3	3	1	2	2	1	2	2	3	2	2	1	3	40	2
8.1. Freedom and agency for human dignity	1	3	3	3	3	1	3	3	3	3	3	1	3	1	3	3	1	3	3	3	50	2.50
8.1.1. Choice for human dignity	0	3	3	2	3	0	3	2	2	3	3	0	3	0	3	2	0	3	3	2	40	2
8.1.2. Criticism for human dignity	0	3	3	3	3	0	3	3	3	3	3	0	3	0	3	3	0	3	3	3	45	2.25
8.1.3. Thought and intellect for human Dignity	0	3	3	3	3	0	3	3	3	3	3	0	3	0	3	3	0	3	3	3	45	2.25
8.4. Affection for human dignity	0	2	2	3	2	0	2	3	3	2	2	0	2	0	2	3	0	2	2	3	35	1.75
8.2. Human education through experience and experimentation	3	3	1	3	1	3	3	3	3	1	3	3	1	3	3	3	3	3	1	3	50	2.50
8.2.1. Human education through dynamic science and open-mindedness	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	60	3
8.2.2. Human education using trained teachers	3	3	2	3	2	3	3	3	3	2	3	3	2	3	3	3	3	3	2	3	55	2.75

8.3. Human health with cleanliness is next to godliness	2	2	3	3	3	2	2	3	3	3	2	2	3	2	2	3	2	2	3	3	50	2.50
8.4. Human destiny with belief in the hereafter	1	2	3	3	3	1	2	3	3	3	2	1	3	1	2	3	1	2	3	3	45	2.25
9. Being systemic	0	1	-1	3	-1	0	1	3	3	-1	1	0	-1	0	1	3	0	1	-1	3	15	0.75
9.1. Performance	1	1	1	3	1	1	1	3	3	1	1	1	1	1	1	3	1	1	1	3	30	1.50
9.2. Noticing weaknesses and strengths	0	2	2	3	2	0	2	3	3	2	2	0	2	0	2	3	0	2	2	3	35	1.75
9.3. Strengthening positive points	3	3	2	3	2	3	3	3	3	2	3	3	2	3	3	3	3	3	2	3	55	2.75
9.4. Amending weak points	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	60	3
9.5. Changing the unamendable	0	3	1	3	1	0	3	3	3	1	3	0	1	0	3	3	0	3	1	3	35	1.75

Using Kendall's W test, the values in Table 1 were examined and statistically analyzed in SPSS software:
where j is expert number, m is total number of experts, n is the number of subjects and R_i is the sum of all scores for the ith subject with M = 20 and N=54.

$$R_{i=}\sum_{j=1}^{m}\left(r_{ij}\right)=2240$$

The mean score was calculated using the following formula

$$\overline{R}=\frac{1}{n}\sum_{i=1}^{n}(R_i)=\frac{1}{54}2240=\frac{41}{481}\cong 41$$

to square the variation of each score from the mean and was called S.

$$\boldsymbol{S}=\sum_{i=1}^{n}\left(R_{i-}\,\overline{R}\right)^2=5099$$

Kendall's W statistic was calculated as the formula:

$$W=\frac{12S}{m^2\ (n^3-n)}=\frac{12\times 5099}{20^2\ (54^3-54)}$$
$$=61188\ \div[400\times(167464-54)]=61188\div 6296400$$
$$=0$$

Kendall's W test was used for a measure of agreement among experts. If the experts evaluate the components the same, W is equal to 1. If they do not agree, W is equal to 0. Therefore, W is equal to 0 here, meaning a lack of consensus among the experts for each component.
Analyzing Table 1 shows that most participants tended towards positive numbers, indicating the level of agreement on the relevant components; with a few exceptions where these were 0 and -1, the rest were all positive. The most significant component was "foresight", and the subcomponents were "human education through dynamic science and open-mindedness", and "amending weak points" with means of 3, respectively. The least significant components were "harmony with nature" with a mean of 1, "using online teaching" with a mean of 1, and "being systemic" with a mean of 0.75. Overall, the mean for all suggested components and subcomponents were positive and above 0.75. In Table 2, nine components are shown, including: Foresight, using advanced technology, IT exchange, harmony with nature, security, flexibility, reliance on revelation, constructive role of humans in education, and being systemic.

Table 2: Descriptive statistics of components

Components/Descriptive statistics parameters	Foresight	Advanced technology	IT		Harmony with nature	Security
Answered	20	20	20		2	20
Unanswered	0	0	0		0	0
Mean	3	2.25	2.2	5	1	2.75
Median	3	2.50	2		1	3
Mode	3	3	2		1	3
Standard deviation	0.0	0.957	0.5	0	0.816	0.500
Variance	0	0.917	0	0.250	0.667	0.250
Total	60	45	45		20	55

Table 2 (continued): Descriptive statistics of components

Components/Descriptive statistics parameters	Flexibility	Reliance on relevance	Role of humans in education	Being systemic
Answered	20	20	20	20
Unanswered	0	0	0	0
Mean	2.50	2.25	2	0.75
Median	3	2	2	0.50
Standard deviation	3	2	2	-1
Variance	1	0.250	0.667	2.91
Sum	50	45	40	15

Discussion and conclusion

We developed a dynamic system model of Islamic education for the Islamic Republic of Iran. It has similarities with other models: Sabri (2009), who emphasizes on the global move towards dynamic information given a range of considerations in education, and Nicholas and Petros (2013), and Soylu and Yelken (2014), who emphasize on the theory of dynamic systems and lifelong education, respectively. The findings of Velaswa (2014) on professional education and the component of foresight in the present study are consistent with the findings of Aubusson and Panizzon (2016) emphasizing on forward-looking education. The critical education of Salehi (2015) is consistent with the systemic component and the subcomponent of amending weak points in this research. The holistic approach in the said model is similar to the holistic view of Yakhchali (2016). The present research is consistent with the findings of Nuhoglu's (2020) system dynamics approach to problem solving skills.

Our findings are distinctive in that 54 effective subcomponents are merged into a model which solves the problem of being one-dimensional. In addition to the effective role of human beings in the model, God, environment, animals, plants, instruments, equipment, location, facilities, plans, programs,

security, economy, politics, society, information, communications, cleanliness, health, logic, wisdom, and emotions must also be present for a comprehensive system. The systemic component which oversees, controls, guides, and reviews the performance of the system in the dynamic model of education, is one of the advantages of our findings. Therefore, the dynamism of Islamic education will increase if the quality of the nine components and subcomponents of the Islamic system of education increase.

The limitations included the lack of internal resources and the generality of the subject. The result was a dynamic system model of Islamic education as shown in Figure (1). The researchers recommend the use of this model to the authorities for the national education due to its internal coherence and comprehensiveness.

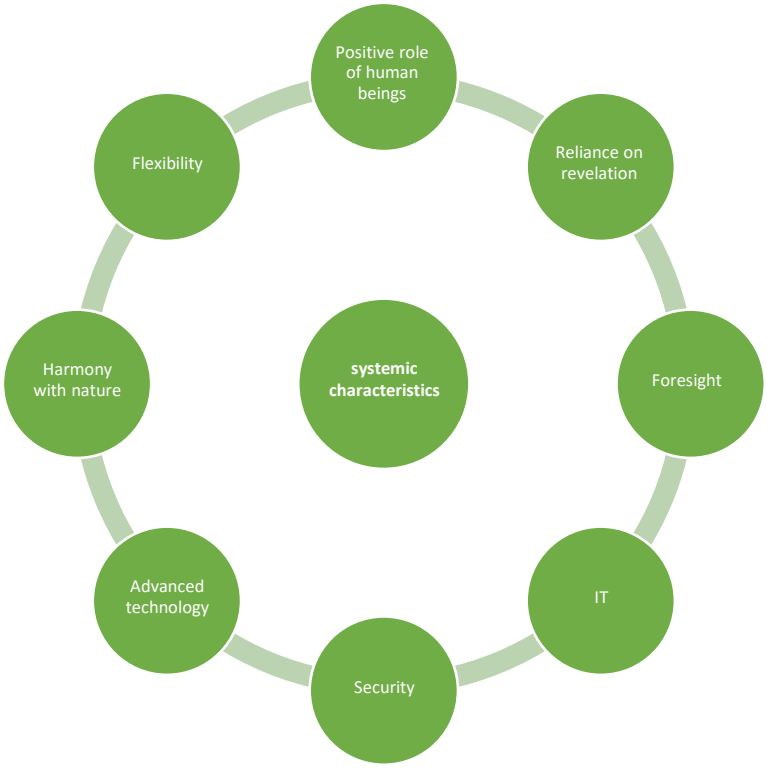

Figure 1: Dynamic system of Islamic education

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