

# The Model of Value-Based Curriculum for Medicine and Surgery Education in Iran

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Received 2017 March 20; Accepted 2017 May 08.

## Abstract

**Background:** The need for internalization of values for professional development in medicine and surgery, and sense of duty linked to the practice of the medical professionalism were recognized in Iran. With regard to the shortcomings currently existed in the curriculum of the medical education, in 2013, the design of an operational model for the curriculum based on values was placed on the agenda through the PhD thesis.

**Objectives:** The aim of this study is to develop the operational model of the value-based curriculum for medicine and surgery education with respect to indigenous values in Shahid Beheshti University of Medical Sciences, Tehran, Iran.

**Methods:** Our value-based curriculum model was developed through qualitative ontology foundations of Hugh McKenna concept analysis. Finally we developed our operational model by comparing our domestic extracted attributes with what is existed and experienced in other countries through systematized searching, determined the process of value curriculum, the sequence of process steps, menu and taxonomy for operationalization of each step, and recommended practices for each step for integration of values in medicine and surgery education in Iran.

**Results:** Ten steps of curriculum model for integration of values in medicine and surgery education include: general need assessment of values, designing hierarchy system of values, need assessment of targeted learners' values, developing value programme statement, determination of value outcomes and objectives, production of value rich content, value based teaching and learning methods, value based settings, value themes management, determination of values evaluation and assessment methods.

**Conclusions:** This Indigenous operational model of value based curriculum proposes the process with exact sequence for the concrete implementation of values education in medicine and surgery, accordance with our country offers. The operational value based curriculum model was prepared in order to develop a practical guideline for value based experiments in medicine and surgery, helps to move from the information level and expressing factual knowledge, to the conceptual and judgment level, understanding the connections and interactions between facts and analysis them.

**Keywords:** Value Based Education, Value Curriculum, Professional Values

## 1. Background

In a period of history, after renaissance, by the advent of scientific methods and the weak performance of the church, scientists focused their activities around rationalism to solve the issues. Then the science without values was developed. But at the peak of development, developed societies confronted moral spiritual crisis. After being faced with many problems, necessity of the development and creation of the concept of values education was introduced again. Nowadays developed people, who set the religion aside before, restored spirituality instead of religion and sought help from it. Since then, attention was given to the spiritual dimension of mankind and values in the curriculum of many universities (1).

At the present time, in medicine of Iran, students have courses such as Ethics, Islamic education, and Islamic

wisdom in their curriculum, which, follow a traditional method for teaching these concepts. In surgery, educational programs have Beliefs and Values at the beginning of the program and expected outcomes in professionalism in curriculum courses, which have not any specific educational strategies for its education and assessment. These kinds of curricula only transfer factual knowledge about values and ethics and do not guarantee the internalization of values. Internalization of values is psychological outcome of conscious mind reasoning about values; that occurred through values curriculum model of education. In Iran, the same as worldwide, the need for providing situations for gaining the value based experience for internalization of values was recognized (2).

## 2. Objectives

Regarding the shortcomings currently existed in the curriculum of the medicine and surgery education in Iran, such as the deficiencies in professional character traits of medicine and surgery graduates; in 2013, the design of a domestic model for the curriculum based on values was placed on the agenda through the PhD thesis. The aim of this article is to develop a curriculum model for values integration in medicine and surgery education through conducting a concept analysis using Hugh Mac Keanu method.

## 3. Methods

Our model developed by qualitative ontology foundations. To develop the model of the value-based curriculum [VBC], we chose the concept analysis. To try to build a [VBC] model having a clear understanding of the conceptual 'building blocks' of its necessity. Therefore, concept analysis is a core activity in the development of a model. Many authors have identified methods of analysing concepts Wilson, 1969; Smith and Medin, 1981; Norris, 1970; Moody, 1990; Rodgers, 1994, Walker and Avant, 1995; Morse, 1995. Then we chose concept analysis of Hugh McKenna, which enables us to refine and define a [VBC] that has originated in model. This method of analysing plan to take cognizance of Rodgers (1994) and Morse (1995), who both berate Wilson's method and suggest a more qualitative approach to concept analysis.

In this method, qualitative approach is used, in which reality and fact is a relative issue and arises from researcher's mind and context values. To extract the underlying and indigenous values, during the concept analysing, we did a thematic content analysing. At the end, we designed operating model according to domestic definitional attributes of [VBC] extracted from concept analysis and thematic content analysis (3).

Brief description about our concept analysis for curriculum model building:

Hugh McKenna's concept analysis method steps starts with step 1: select the concept of interest; since the [VBC] concept, was the concern of medical education authorities in Iran, was selected. In step 2: define the aims of the analysis; the aim of our concept analysis was to define the [VBC] conceptual and domestic components need for final operational model. For this purpose, through our document analysis to clarify the concept of value curriculum in medical education; the related literature was investigated by electronic search strategy to access databases such as CINAHL, Medline, Cochrane library, PsycINFO, Embase, EBMreviews, and Thomson scientific web of science

database. Among 800 articles, 70 articles were about values and values education, but a very few were about value based education components in medicine and surgery. In step 3: identify meanings of the concept in literature such as: (4) UNESCO, Asia-pacific network for international education and values education (5); association for supervision and curriculum development of America (6); the curriculum based on values in Tanzania (7); the curriculum based on values in Australia (8); Values in the New Zealand curriculum (9); values education implementation in Georgia, USA (10); values oriented curriculum in Bangladesh (11); values education in Trinidad and Tobago and etc. (12).

Then, at step 4: determine the defining attributes from reference phrases as primary concept structures, were extracted from the existing documentations, i.e. the exact sentences were quoted. Next, we introduced our interpretation of primary phrases in documentations as the potential definitional attributes that define the [VBC] concept. For recognition and confirmation of sufficient specific attributes, necessity test was done. Then for more clarification of the [VBC] in step 5: identifying a model case which has an example with all the defining attributes of the concept was done. Also in step 6: identifying alternative cases such as: contrary case (the case that does not include the defining attributes of the concept); borderline case (the case is very similar to the concept but some of the attributes and requirement are absent); related case (a case that has none of the defining features of the concept but is similar to it in appearance); invented case (This is a case which is not considered value-oriented teaching, but is labelled as one, and presents the concept of the education program of values out of its normal context); and Illegitimate case (inappropriate employment of the concept of teaching values in real life); for more clarification was done (4).

Besides the attributes of [VBC], in step 7: identifying antecedents which are necessary for [VBC] occurrence and consequences expected from it was done. Since underlying and indigenous values are effective in final operational model, in step 8: we consider context and values through a thematic content analysis of opinions of ethics and education experts and modify the definitional attributes based on the experts' opinions (4). Through this step, we approved the final version of model for Iran.

Finally we developed our operational model by comparing our domestic extracted attributes with what is existed and experienced in other countries through systematized searching, determined the process of [VBC], the sequence of process steps, menu and taxonomy for operationalization of each step, and recommended practices for each step in Iran

## 4. Results

Ten steps of [VBC] operational model including (Figure 1): general need assessment of values, designing hierarchy system of values, need assessment of targeted learners' values, developing program value statement, determination of value outcomes and objectives, production of value rich content, value based teaching and learning methods, value based settings, value themes management, determination of values evaluation and assessment methods.

Step No 1: General need assessment of values in order to determine the community emphasizing values that to be carried out in the curriculum (13).

### Box 1. General Need Assessment of Values, Approaches and Methods

#### General Need Assessment of Values, Approaches and Methods

1. Expert approach
  - Consensus based
  - FGD: focus group discussion
  - Expert panels
  - Non-consensus based
  - Delphi
  - NGT: nominal group technique
2. Participatory approach
  - Community value survey
  - Multi-stakeholder panels
3. Alignment approach
  - Higher order laws, legislations, and mandates survey
  - TCA: thematic content analysis
  - Directional speeches and guidance of community leaders
  - TCA: thematic content analysis
4. Analysis of required profession-specific values and personal characteristics (task analysis)
5. Analysis of value content of current curriculum (current approach)

Step No 2: designing hierarchy system of values through determination of the relative importance, priorities and relationships of the extracted values from step 1. The aim of this step is to reach to a hierarchic value system from a raw list of values (14). For this purpose, each of the value attribute can be achieved at different weight which eventually led to a ranking of the importance of values or hierarchical values can be put in classes that adherence to the values of each class, provided it does not conflict with the values of the higher classes.

Step No 3: Need assessment of targeted learners' values; the purpose of this step is to determine the value sta-

### Box 2. General Need Assessment of Values' Proposed Process for Operationalization

#### General Need Assessment of Values' Proposed Process for Operationalization

1. Formation of committee or working group to determine the value needs of health education programs.
2. Review and analysis of higher order sect oral and cross-sect oral or national value content documents (TCA: thematic content analysis).
3. Qualitative study on moral and ethical patterns of health system in order to explain their emphasized values.
4. Codification of draft list and taxonomy of values.
5. Scrutinizing of values draft list trough review and revision meetings with experts and scholars from the health field.
6. Receipt of wide range of stakeholders and beneficiaries' feedbacks on the values draft by Delphi.

### Box 3. Models and Methods of Design Hierarchy System of Values

#### Models and Methods of Design Hierarchy System of Values

1. Models of weighting (this method leads to compromise relationship between the values)
  - Inductive method
  - Fixed point scoring
  - Paired comparison
  - Analytic hierarchic process
  - Deductive method
  - Judgment analysis (stepwise regression)
  - Discrete choice experiment
2. Scenario based models (this method leads to the sacrifice relationship between the values)
  - Sacrifice scenario analysis

### Box 4. The Proposed Process of Design Hierarchy System of Values

#### The Proposed Process of Design Hierarchy System of Values

1. To determine the initial list of values (according to higher order documents and authorities' comments).
2. To design coping scenarios.
3. To appoint a panel of individuals and entities that their value judgment is the reference judgment.
4. To judge coping scenarios by the panel.
5. To determine position and relationship between the values based on the analysis panel.
6. To develop value ladder.

tus and profile of learners and determine the distance of their moral and ethical situation by the ideal status (15).

Step No 4: developing program value statement: value statement is the manifestation of value based curriculum.

**Box 5. Approaches and Methods of Need Assessment of Targeted Learners' Values**

**Approaches and Methods of Need Assessment of Targeted Learners' Values**

1. Need assessment based on learner's judgment

- Direct

- Value survey studies

- Qualitative studies (ethical analysis) to determine the moral status of a national sample of learners (ethnography)

- Qualitative studies (grounded theory) or a quantitative (factor analysis) to determine the factors that affect the moral status of a national sample of learners

- Indirect

- Value autobiography

- Analysis of learners' judgment about value scenarios

- Preparation of discussions and exchange views on learners' concerns value issues

2. Need assessment based on the others' judgment

- Direct

- Peer value evaluation (value rating scales)

- Value evaluation by teachers (value rating scales)

- Indirect

- Observation of the learners' behavior in real situations and encounters, or dummy

- To study and survey learners' logbooks

- To realize the learners' value needs through discussions and group activities

- To analyze ethical and disciplinary records of learners

**Box 6. The Proposed Process of Value Need Assessment of Targeted Learners**

**The Proposed Process of Value Need Assessment of Targeted Learners**

1. At the national level: the annual national survey of values in learners

2. At the college level: the extraction of value Needs and concerns of learners at universities through the use of forums and informal discussions, formal interviews or focus group discussions by learners or their teachers, and entry exams from the knowledge, attitudes and moral and ethical skills of learners

It is regulated with respect to the ideal value status, and taking into account the current state of learners' values (16).

Step No 5: determination of value outcomes and objectives. At this step, objectives and outcomes set based on value statement. To set them, following taxonomy can be used (17).

Step No 6: Production of value rich content. The development of value rich content and communicate and relevance of the content and objectives takes place at this step (18).

Step No 7: Value based teaching and learning methods

**Box 7. Approaches and Methods of Developing Value Statement**

**To Develop the Draft of Value Statement**

1. To scrutinize the draft statement by experts

- FGD (focus group discussion)

- NGT (nominal group technique)

- RAND method

2. Legitimation and support of statement

- Questionnaire

- Delphi technique

**Box 8. The Proposed Process of Value Statement Developing**

**The Proposed Process of Value Statement Developing**

1. Formation of national values based curriculum committee

2. Codification of draft statement of program in national committee

3. Peer review workshop on the draft statement in the presence of experts in the field of ethics and values

4. Get feedback and opinions from stakeholders on the draft by Delphi

5. Legislation of document in the references related policy officers (supreme council of the cultural revolution or of educational planning)

**Box 9. Taxonomy of Value Outcomes and Objectives**

**Taxonomy of Value Outcomes and Objectives**

1. Objectives related to internal value structure

- Objectives related to the value development

- Toward self

- Toward family

- Toward learning environment

- Toward community, professional and business community

- Toward State (citizens) and people

- Toward creation (spiritual)

- Toward God

- Objectives related to the value explication

2. Objectives related to value Based Competence

- Value Related Knowledge

- Value Sensitivity

- Value reasoning and judgment

- Value decision making

3. Objectives related to value Based Character

(19). At this step the teaching and learning methods are selected according to the following taxonomy:

Step No 8: Value based settings and environments. Ba-

**Box 10.** The Proposed Process of Setting Value Outcomes and Objectives

**The Proposed Process of Setting Value Outcomes and Objectives**

1. Formation a committee to determine value outcomes and objectives
2. Codification of value outcomes and objectives draft in committee
3. Scrutinizing the draft by experts in the field of ethics, values and education
  - FGD (focus group discussion)
  - NGT (nominal group technique)
  - RAND method
4. Legislation of value outcomes and objectives through feedback from a wide range of stakeholders
  - Delphi technique
5. Legislation of document outcomes and objectives in the references related policy officers

**Box 11.** Taxonomy of Value Rich Content

**Taxonomy of Value Rich Content**

1. Standalone value rich content
  - Content related in the field of philosophy and wisdom relevant to the knowledge area (e.g. medicine, surgery, or any medical sciences domain)
  - Content related to religious/spiritual values
  - Content related to ethical values
  - Content related to norms and social values
  - Content related to citizenship values
2. Integrated value content
  - According to the value principles in educational texts
  - Scientific content re-phrased according to accepted value framework
  - Remove the anti-value contents and implications from medical texts
3. Indirect value rich content
  - Value rich stories
  - Value rich poems
  - Value rich topics and tips
  - Value rich music
  - Value rich film and theater
  - Value rich quotations (proverbs)
  - Value rich interviews
  - Value rich biographies

sically, any environment can transfer values. However, environments and settings with high value capacity will have a greater impact on the transmission of values (20).

Step No 9: Value themes management. Recommended that standalone value content modules should be quite limited and most of the value content integrated in the

**Box 12.** The Proposed Process for Developing the Value Rich Content

**The Proposed Process for Developing the Value Rich Content**

1. Formation of committee to select valuable content (consisting of experts in the field of value and artistic value) (As required formation Sub-Committees of literature, history, music and film)
2. To offer value rich content products for each of the value based objectives
3. Screening of offered content, taking into account the following criteria
  - Cultural congruity
  - Cover several value based outcomes with a content
  - Attraction of content (based on the interests of learners)
  - Integration of content in curricular and extracurricular areas
  - To fit with the age and gender of the learners
  - To fit with learners' value level
  - Due to the variety of content for transfer one value message
4. Prioritization of content value
5. To review content validity with regard to the content relevance and content coverage of value objectives
6. To develop attachments or critiques for each unit of content in terms of value
7. To create an archive or a database or repository system for value content metadata properly labeled

curriculum (21).

Step No 10: Determination of values evaluation and assessment methods (22).

**5. Discussion**

Using a qualitative concept analysis, it is shown that the concept of value based curriculum in our context and finally develop an operational model for medicine and surgery and all medical sciences education in Iran. Clarification of the concept of value based curriculum paves the way and solves the challenge of the ambiguity of the meaning of it, especially in the medical sciences education domain (22). The proposed model covers items relating to a value based curriculum. The taxonomy for each step of the model is a useful resource and reference for implementation and conduct value-based education (19). We proposed the operational pathway for each step of the model which is necessary for developing values in our educational system in all medical sciences such as medicine, surgery and etc. This is the first step in the process of moving toward an internalization of values (23). The operational model in order to develop a practical guideline for value based experiments helps to move from the information level, expressing factual knowledge, to the conceptual level, understanding the connections and interactions between facts. In our value based curriculum, medical sci-

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**Box 13.** Taxonomy of Value-Oriented Teaching and Learning Methods

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**Taxonomy of Value-Oriented Teaching and Learning Methods**

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1. Value education

- Passive (lecture)

- Interactive

- Value based arguments

- Value based vignette case discussion

- Value based conflict or dilemma discussion

- Value critiques

- Critique of value content

- Critique of value scenario

- Problem solving

- Role playing

2. Value experience

- Exposure (passive experience)

- Implicit exposure (unconscious)

- Explicit exposure (conscious and planned)

- Simple visit

- Visit with specific scenario

- Active experience

- Volunteer activities and services

3. Project activities

- Research on the value categories

- Production of value content (video clips, short stories)

4. The methods of value framework consolidation

- Value declaration, explication and clarification

- Value framing

5. Value/Moral self-reflection and meditation

6. Opportunities of moral consultation

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**Box 14.** Principles of Selection the Value-Oriented Teaching-Learning Methods

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**During the selection process of teaching learning methods the following principles can help**

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1. To make congruence and proportionality between teaching methods and objectives domain (Cognitive, affective, psychomotor)

2. To emphasis on the use of indirect and implicit approach in transmitting values

3. Using a variety of teaching methods , according to the different learning styles of learners

4. Using learner-centered methods

5. To Choose teaching methods appropriate to the students' level of value maturity

6. Using teachers from different disciplines(Including religious studies, behavioral science, cognitive science, and social science)

7. To emphasis on comprehensive and dynamic interaction between learner and teacher

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ences (medicine, surgery and etc.) learners face situations that help them build value reasoning and judgment (24).

**Box 15. Taxonomy of Values Education Settings and Environments**

**Taxonomy of Values Education Settings and Environments**

1. Social settings

- Family

- Social groups

- Student groups

- Society

- Social interactions and activities

- Areas of service to the community

2. Cultural and artistic settings

- Student Publications

- Student Theatre

- Student clubs and associations

- Ceremonies

- Extracurricular programs of student and cultural deputy of universities

3. Scientific and educational settings

- Classrooms

- Workshops

- Colleges and universities

4. Sports and Recreation settings

- Camps

- Visits

- Clubs

5. Job and career settings

- Hospital

- Department

- Clinic

6. Values and religious settings

- Mosque and church and...

- Charities

- Institutions with humanitarian mission

- Institutions related to the protection of the rights of specific individuals

7. Virtual settings

- Mass/public media

- Social media

- Forums

To achieve this ultimate goal, educational planners should move toward the steps of our proposed operational model.

**5.1. Conclusion**

The suggested taxonomy of our operational model can be an appropriate guide for value based educational pro-

**Box 16. The Proposed Process for Selecting the Environment and Settings for Values Education**

**The Proposed Process for Selecting the Environment and Settings for Values Education**

1. Monitoring and selection of settings that cover the largest potential for value purposes and make a list of them.

2. Using the broadest and most diverse settings (in the range of cultural, social, scientific ...) to transfer value outcomes.

3. Make symmetry between the value outcomes and settings

4. Organization and integration of Value outcomes with specific outcomes of related field

5. Codification of exposure scenarios in related field, step by step

6. Choice of method and media for different exposure scenarios sections

7. Determine prerequisites and preconditions of using field to transfer values and feasibility

8. Determine practices and frameworks of documenting exposure in fields

9. Determine the exposure assessment and evaluation methods

**Box 17. Taxonomy of Value Themes Integration Methods in the Curriculum**

**Taxonomy of Value Themes Integration Methods in the Curriculum**

Synchronized integration: syndicate of moral and ethical issues teaching with related basic, clinical or surgical science

Nested integration: provision of moral and ethical issues merged at related various courses

Networked integration: integration through learners' communication during training with professors and experts of values (counseling or discussion and problem solving)

Webbed integration: integration of value objectives and content besides other educational objectives and contents in problem solving learning or in task based learning

Immersed integration: integration of value outcomes through learners' engagement in problem solving process or in the high-value load challenge

Thread integration: impalpable integration of value outcomes in value content of educational courses and its presentation by professors from different disciplines (no expertise in the field of ethics)

**Box 18. The Proposed Process for Value Themes Management Implementation in Our Current Curriculum**

**The Proposed Process for Value Themes Management Implementation in Our Current Curriculum**

In the integration of the value objectives and content, scaffolding teaching learning method is used. The selection of value objectives and teaching methods were done in accordance with learners' value level and to shape the structure of value.

- In a traditional curriculum, much of the value objectives and contents themes management is by thread integration in educational course.

- In a problem or task based curriculum, value objectives and contents themes can be distributed among the issues or tasks.

- Small value content packages can be embedded in course programs through nested integration.

- Great value content packages can be integrated in synchronized manner with different courses.

- To develop value problem solving competence, immersed integration can be used.

- To provide opportunities to receive value advice all the course helps value integration through networked method.

**Box 19.** Taxonomy of Values Evaluation and Assessment Methods

**Taxonomy of Values Evaluation and Assessment Methods**

1. Assessment of value knowledge

- Basic science - knows

- Applied science - knows how

2. Assessment of value attitude

- Attitude measurement methods

- Psychometric Tools / learner value profile

3. Value cognitive skills assessment

- Value sensitivity

- Value analysis

- Value judgment and reasoning

- Value decision making

4. Value competency assessment

- Recognition of value problem

- Analysis of value problem

- Value reasoning

- Value decision making

5. Value performance (behavior)

- Self-assessment

- Peer assessment

- Associates

- Trainers and instructors

**Box 20.** The Proposed Process for Implementing the Value Evaluation and Assessment

**The Proposed Process for Implementing the Value Evaluation and Assessment**

1. Simultaneous use of summative and formative value evaluation methods.

2. To use direct and indirect approaches in choice of value evaluation and assessment methods.

3. To create congruence between the value objectives and outcomes and evaluation and assessment methods.

grams and curricula in all medical sciences education such as medicine, surgery and etc. in every context. This Indigenous operational model of value based curriculum proposes the process with exact sequence for the concrete implementation of values education in accordance with our country offers. The operational model helps to move to the conceptual level, understanding the connections and interactions between facts in this domain and develop internalization of values.

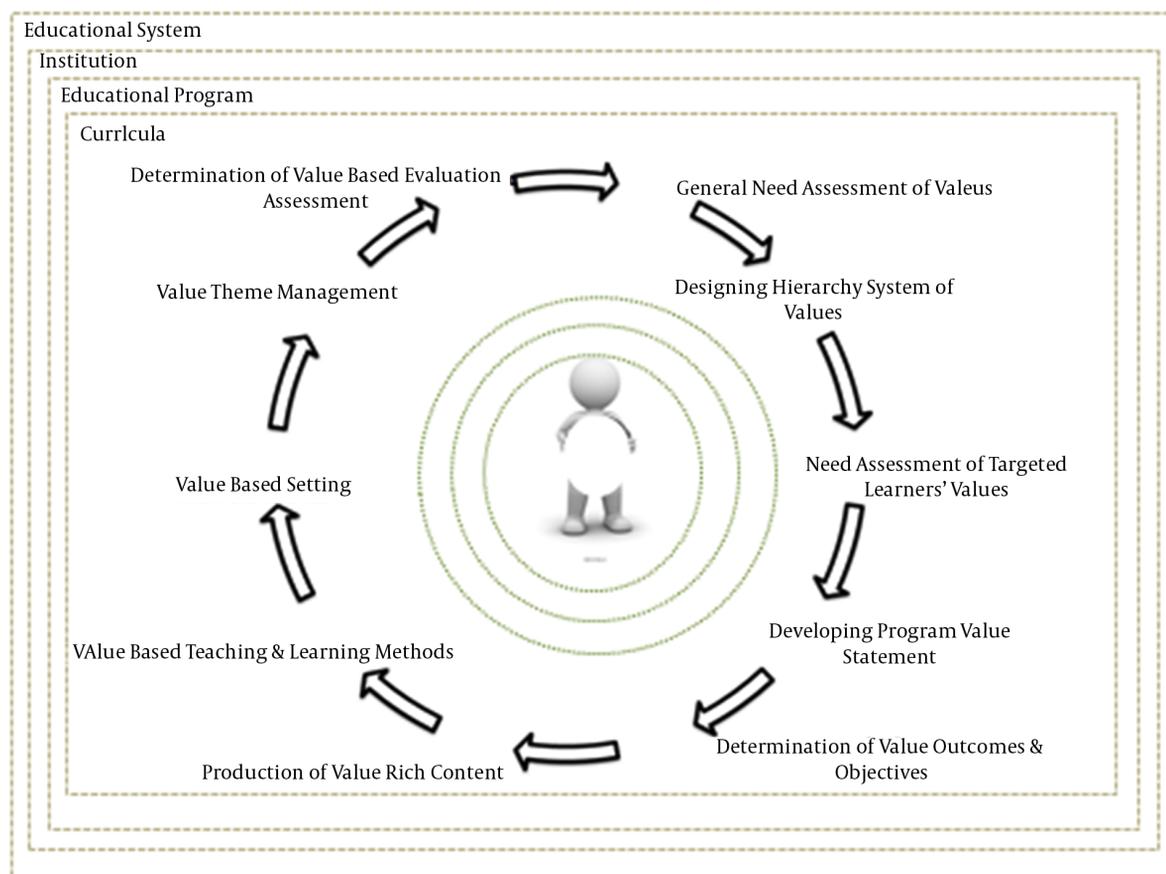


Figure 1. Ten Steps of [VBC] Operational Model

## Footnotes

**Authors' Contribution:** Authors contributed in the conception of the work, conducting the study, revising the draft, approval of the final version of the manuscript, and agreed for all aspects of the work, manuscript review.

**Ethical Considerations:** Ethical issues (including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

**Financial Disclosure:** The authors declare that there is no conflict of interests.

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