Quarterly Journal of Environmental Education and Sustainable Development
Vol. 8, No. 4, Summer 2020 (55-72)

فصلنامه علمی، آموزش محیط‌زیست و توسعه پایدار
سال هشتم، شماره چهارم، تابستان ۱۳۹۹ (۷۲-۵۵)

Design and Validation of Environmental Curriculum Framework Based on Upstream documents in Middle school

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(**Received:** 18.07.2019 **Accepted:** 18.09.2019)

طراحی و اعتبارسنجی چارچوب برنامه درسی محیط زیستی بر اساس اسناد بالادستی در دوره اول متوسطه

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(دریافت: ۱۳۹۸/۰٤/۲۷ پذیرش: ۱۳۹۸/۰٦/۲۷)

Abstract:
The purpose of this study was to design and validate the environmental curriculum framework based on the upstream documents in the middle school, which was carried out using a qualitative-quantitative method with exploratory design in two sections. The research population in the first section of the research was upstream documents. The sampling method from this population was criterion-based. The data collection tool comprised a checklist and taking notes whose validity was assessed and approved by experts, masters, and professors. The output of this section was the environmental curriculum framework in the format of four elements of the curriculum (purpose, content, method, evaluation), which was used to validate the 42-item questionnaire. The validity of the questionnaire approved from the experts' point of view and reliability by Cronbach's alpha coefficient. The statistical population of the study in the validation section comprised 2259 people of the experts and masters of the social sciences, experimental sciences, and Farsi literature from six districts of education in Isfahan in the academic year of 2018-19, of which, 329 people were selected by categorized relative random sampling. The data obtained from this section were analyzed using confirmatory factor analysis method using Lisrel software. The results showed that the fitness was appropriate for the proposed model based on the indexes (X^2/df =1.947), (GFI = 0.95), (AGFI = 0.90), (RMR = 0.81).

Keywords: Curriculum Framework, Validation, Environmental Curriculum, Upstream Documents.

چکیده:
هدف این پژوهش طراحی و اعتبارسنجی چارچوب برنامه درسی محیط زیستی بر اساس اسناد بالادستی در دوره اول متوسطه بود که به روش ترکیبی (کیفی-کمی) با طرح اکتشافی در دو بخش انجام شد. جامعه تحقیق در بخش اول پژوهش را اسناد بالادستی تشکیل داد. روش نمونه‌گیری از این جامعه روش نمونه‌گیری ملاک محور بود. ابزار گردآوری داده‌ها از این جامعه را چک‌لیست و فیش‌های یادداشت‌برداری تشکیل داد که روایی آنها با استفاده از نظرات متخصصان، کارشناسان و اساتید سنجیده و تأیید شد. خروجی این مرحله چارچوب برنامه درسی محیط‌زیستی در قالب عناصر چهارگانه برنامه درسی (هدف، محتوا، روش، ارزشیابی) بود که به‌منظور اعتبار سنجی آن از پرسشنامه‌ای ۴۲ گویه‌ای بهره‌گیری شد. روایی پرسشنامه از دیدگاه متخصصان و پایایی آن به کمک ضریب آلفای کرونباخ موردسنجش قرارگرفته و تأیید شد. جامعه آماری تحقیق را در بخش اعتبار سنجی کارشناس مسئول و دبیران دروس مطالعات اجتماعی، علوم تجربی و ادبیات فارسی نواحی شش‌گانه آموزش‌وپرورش شهر اصفهان در سال تحصیلی ۹۸-۹۷ جمعاً ۲۲۵۹ نفر تشکیل داد که از این تعداد به روش نمونه‌گیری تصادفی طبقه‌ای نسبی تعداد ۳۲۹ نفر انتخاب شدند. داده‌های به‌دست‌آمده از این مرحله به روش تحلیل عامل تأییدی با استفاده از نرم‌افزار لیزرل تجزیه‌وتحلیل شدند. نتایج نشان‌دهنده برازش مناسب مدل پیشنهادی بر اساس شاخص‌های (X^2/df= ۱/۹۴۷)، (GFI = ۰/۹۵)، (AGFI = ۰/۹۰)، (RMR = ۰/۰۸۱) بود.

واژه‌های کلیدی: چارچوب برنامه درسی، اعتبار سنجی، برنامه درسی محیط‌زیستی، اسناد بالادستی.

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Introduction

Environmental education has become a growing priority at the local, national, and international levels in recent years. In the decade of education for sustainable development (2005-2014), the United Nations called on all member states to strive to increase their commitment to educating people about the need to create a sustainable future and create the able citizens to do so. Therefore, environmental education is also considered as one of the main components of sustainable development in educational systems. Many conferences and seminars have been held in this area since the 1970s, some of which are important because of their impact on the Drafting acts, designing and implementing environmental education programs around the world (Hemati & Shabiri, 2016). According to the UNESCO Statement, the ultimate goal of environmental education is sustainable development (Conde & Sánchez, 2010). Education of Sustainable development is an emerging and dynamic concept that includes a new perspective on education (UNESCO, 2012). The current era is called the "era of environmental crisis". Because by changing lifestyle and consumption, destruction has got into larger dimensions (Bayat et al. 2013). Today, achieving environmental objectives worldwide is achievable only through international commitments (Jacobus, 2004). Ignoring ethical teachings as a result of unlimited and absolute demands creates war, conflict, and greed, violation of the right, injustice, Consumption, destruction of nature, and other fatal injuries to nature. In addition to the presence of a scientific basis for the resolution of environmental crises, the presence of an ethical factor is also necessary (Mohamadi Ashnani et al. 2008). The aesthetic experiences of a human being come from the world around us, a world that combines nature and the world of human creatures. The emphasis is on philosophical and theoretical aesthetics on art and artworks and the aesthetic quality of the environment, and it is associated with three dimensions of knowledge, skill, and attitude of the environment and the areas of environmental literacy. Contemporary industrial life has diminished the human's capacity to comprehend the beauty and has many signs of worthless aesthetic paradigms. As this inconsistency does not hurt the human being, it can be a sign of environmental Illiteracy. Illiteracy that parents are not aware of, and they are also transmitted to the education of their children so that "ugliness" becomes common and their habit (Raha Doust, 2008).

Perhaps from the decades of the new definition of literacy, we can refer to the UNESCO definition of literacy based on which " literacy is the ability to identify, understand, interpret, create, communicate, and compute by using printed and written materials in a variety of contexts ", Which involves educating and empowering a person so that he/she can achieve his/her goals, develops his/her knowledge and ability, and actively participates in society "(Raha Doust, 2008). UNESCO defines new sources of ethical literacy, health literacy, computer literacy, financial literacy, media literacy, information literacy, and technology, and one of the most important of which is "environmental literacy". (Lonsdale & McCurry, 2004). Among the various types of literacy, environmental literacy requires a deep understanding of the systems of the natural world, the understanding of the relationships and interaction of the living and artificial world, and the ability to deal reasonably with issues that must be encountered by scientific evidence, neutrality, and aspects Economic, aesthetic, and ethical environment (Environmental Education for a Sustainable Future, 2000).

The results of studies by Sharina et al. (2011)

show that an Individual environmental curriculum provides environmental knowledge superficially. Environmental knowledge should cover the depth, and the development of the program and the environmental issues and its training through integration can accomplish it (Sharina et al. 2011). The results of Mitsuyuki (2017) showed that modern school teaching practices should be sustained to ensure future environmental education. Hence, firstly it is necessary to understand the unsolvable internal contradictions in environmental education. Ghisloti & Torres de Oliveira (2012) found that virtual education alone could not provide effective environmental education but could be integrated with other educations. Green (2012) showed that how School location specifications, curriculum, and pedagogy can help to create spatial, temporal, and geographical literacies that help children create meanings. These multi-purpose literacies are the main components of the curriculum that are used effectively for sustainable education.

The results of Dibaei & Lahijanian (2009), " Reviewing the curriculum of secondary schools with an emphasis on environmental education," showed that although the content used in the textbooks is of interest to students, it is not beneficial. Haj Hosseini et al. (2010) also argue that high school students recognize the current status of environmental education for creating sensitivity as inadequate, knowing that making changes to curricula is necessary. Amini & Mashalahi (2014) concluded that the total amount of attention paid to the indicators and components of environmental education in the textbooks of social education is very low and inadequate as to be relevant to the role and importance of textbooks in the education system of the country, and it is required to reform and major changes in this area. Veisi et al. (2012) stated that although students have a positive attitude and a higher level of concern and environmental sensitivity, they have less and modest environmental knowledge. Abdolahi & Sadeghi (2012) showed that students are ready to accept the facts and knowledge, attitudes, and new approaches to the environment. They have a great interest in playing a role in this regard and Specialized and practical information are required to deal with their environment. Taghie et al. (2012) concluded that in the Profession and Techno Curriculum, only the cognitive aspect of the environment was taken into account and that the attitude was neglected. Other research results in this regard including Soleimanpour et al. (2013), Soltani et al. (2011); Abedi Sarvestani et al. (2008) showed that the type of attitude and valuation toward environmental issues will have a direct impact on the importance of its education and, consequently, on planning for environmental education.

Evidence suggests that human beings will face inevitable events soon, reflecting their inaccurate behavior with nature, and the need for a comprehensive effort by the nations of the world to reflect this trend has been revealed. Hence, most countries in the world consider goals, laws, regulations, and environmental policies as part of their development plans, and they are closely following the issue of environmental education in their programs. Nevertheless, there is still a significant lack of awareness of the relationship between human actions and the state of the environment (Soleimanpour et al. 2013). on the one hand, Increasing the environmental problems and crises in the world, on the other hand, understanding the implications of environmental issues in human life has made the importance of discussing the environment and environmental issues of environmental education and inclusion of this important Students' curriculum stints that every student knows what and how should the future of human life

be first. A lot of studies have been done to determine if environmental education in schools is for the education of the younger generation and what are the mechanisms behind it? (Hart, 2003; Bartosh, 2003). Today, education is one of the most appropriate ways to achieve economic, cultural, and social development. Educational must take this into account to protect the environment institutions in their plans. Therefore, the introduction of environmental concepts in the curriculum of different educational levels will enable students to preserve the environment from the very beginning and at the time of the formation and development of the personality not only as a lesson but also as a human responsibility and duty (Dibaei & Lahijanian, 2009). One of the most basic ways to solve environmental problems is increasing knowledge and information which indeed needs education. If citizens are aware of their performances, they will resort to more appropriate behavior (Soltani, 2000). Not only in environmental education but also other valuable things, education in childhood and adolescence that is the time of their development and training students is of particular importance, first, Because children and adolescents are the largest populations, they make up more than 30% of the world (Arjmandi, 2000). While this ratio in some developing countries reaches 50% or more. Second, they are both the next generation and have the responsibility of communicating the present generation with future generations. Third, children and adolescents are more susceptible to environmental pollution. Fourth is the high learning level in childhood and adolescence so that they learn more quickly (Mir Damadi et al., 2008). High school is one of the most important, sensitive, and effective periods in individual and social life. It is a period that has commonalities and differences with other curricula due to its students' Ecosocial, and psychological status, and has a wide range that includes childhood and eventually reaches to the adolescence.Therefore, environmental education in High education is of particular importance. Considering that this issue is one of the priority issues and challenges of the world and Iran's environmental problems are of a fragile condition, and the major part of these disasters is the kind of education that shapes human perception and belief in its environment and citizens of the Iranian society need to learn the culture of living along with coexistence with nature, making interest and willingness to understand problems, awareness, and understanding of environmental issues, and the revival of the customs of "cultural background" through education. This has led to special attention to environmental education in upstream documents; the Perspective Document of the Islamic Republic of Iran on the horizon of 1404 AH stated that: "By relying on divine power in the light of faith and national determination and endeavor In a 20-year-old perspective, Iran is a developed country with the first position of economic, scientific and technological knowledge in the region, with an Islamic and revolutionary identity, inspirational in the Islamic world and with constructive engagement in international relations. The Iranian community in the field of environment will have such features on the horizon of this perspective. Enjoying the health and the benefits of the favorable environment, the acquisition of technology, especially new technologies including micro-technology and bio-environmental technologies, spatial planning based on the principle of environmental protection and the restoration of natural resources, in the field of economic development, the creation of a proper mechanism To increase the productivity of production factors (energy, capital, labor, water, soil), paying attention to the economic-security-political and

environmental value of water in its extraction, supply, maintenance and consumption, inhibition of waters that leave the country and Priority to using shared water resources ". Therefore, it is necessary to consider the appropriate environmental education of the documents, because the environment is not conceivable from a human being, society, nature, and human-made environments. Therefore, the present research seeks to answer this question: What is the context of the environmental curriculum based on the upstream documents in the middle school education system and its validity?

MATERIALS AND METHODS

The present study is applied in terms of the aim and combinational (qualitative-quantitative) method with exploratory design. To identify the curriculum elements (purpose, content, teaching-learning method, and evaluation) in the field of environmental education, the upstream documents were used. in this phase, the research population includes all the upstream documents in the "Perspective Document of the Islamic Republic of Iran on the horizon of 1404 AH, theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, the document on the fundamental development of education in the formal education system of the Islamic Republic of Iran, the National Curriculum of the Islamic Republic of Iran, the Law of the Sixth Five-Year Plan for the Economic, Social and Cultural Development of the Islamic Republic of Iran (1396-1400)". The sampling method was criteria-oriented sampling. This method requires the selection of items that satisfy a critical criterion in a particular subject or field. Thus, the sample was from documents that were either directly related to environmental education or generally referred to the guidance in other areas of learning but related to environmental education; they have selected as examples and have been analyzed. The data collecting tool was a checklist and note-taking file of upstream documents that were validated and verified by experts, professionals, and professors. In the second phase, a 42 item questionnaire was designed to validate the proposed framework comments from 15 experts in the field of curriculum planning were used to assess the validity of the questionnaire, and Cronbach's alpha coefficient was used for reliability assessment; the obtained coefficient of 0.87 approved the acceptable reliability of the tool. The statistical population consisted of all experts, professors, and teachers in social studies, experimental sciences, and Persian literature from the six districts education department in Isfahan by the number of 2259 people, from which 329 people were selected by stratified random sampling method and the questionnaire delivered to them. In this phase, descriptive statistics "mean, standard deviation, variation range" and inferential statistics" factor analysis, chi-square test, RMSEA, AGFI, NFI, and GFI indices were used to analyze the obtained data.

FINDINGS

Table 1 summarizes the information derived from the analysis of upstream documents: the Perspective Document of the Islamic Republic of Iran on the horizon of 1404 AH, theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, the document on the fundamental development of education in the formal education system of the Islamic Republic of Iran, the National Curriculum of the Islamic Republic of Iran, the Law of the Sixth Five-Year Plan for the Economic, Social and Cultural Development of the Islamic Republic of Iran (1396-1400) are presented in the field of environmental education.

Table 1. Summary of information derived from the analysis of upstream documents

Summary of information derived from the analysis of upstream documents
≠ Spatial planning based on the principle of preservation of the environment and restoration of natural resources (the Perspective Document of the Islamic Republic of Iran on the horizon of 1404 AH, p. 4)
≠ Attention to the economic, security, political and environmental value of water (the Perspective Document of the Islamic Republic of Iran on the horizon of 1404 AH, p. 7)
≠ performing individual and collective duties towards God, self, creation (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p.74, section 19.2.1)
≠ Protecting the environment and respecting nature as one of the key elements of the peaceful life (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 94, Clause 4.1 The basics of Cognitive Value).
≠ Maintaining the natural conditions of the living environment for development (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 106, Clause 16.4.1. The basics of Cognitive Value)
≠ Observing the rights of all human beings. (Theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 106, Clause 16.4.1. The basics of Cognitive Value)
≠ Not to conflict with the natural environment and degrading it (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 106, Clause 16.4.1. Cognitive Value Basics)
≠ Nature and its phenomena as the symbols of authority, wisdom, and grace of God. (Theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 106, Clause 16.4.1. The basics of Cognitive Value)
≠ According to the Quran, Nature and its phenomena are divine verses. (Theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 106, Clause 16.4.1. The basics of Cognitive Value)
≠ Environmental protection is the general duty of today's generations and later generations. (Theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 106, Clause 16.4.1. The basics of Cognitive Value)
≠ Respect for nature-based on the Islamic criteria system. (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 154, Clause 3.4. Purposes of Education)
≠ Emphasis on social factors affecting the education process and the institution of environmental and safety protection. (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 154, Clause 3.4. Purposes of Education)
≠ Responsibility for the conservation of urban ecosystems. (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 305, Clause 3.3.4)
≠ Understanding nature and respecting it. (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 305, Clause 3.3.4)
≠ Emphasizing on the competence to establish a healthy environment. (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 305, Clause 3.3.4)
≠ Respect for the environment as a verse of divine verses. (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 305, Clause 3.3.4)
≠ Paying Attention to the creation of a spirit of commitment and responsibility towards the creatures of God (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 305, Clause 3.3.4)
≠ The principle of rational relationship with nature. (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, P. 402, The final clause 3.5. 4)
≠ Principle of regulating environmental conditions and perceptual relationship with elements of nature. (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, P. 402, The final clause 3.5. 4)
≠ The Principle of Environmental Protection (theoretical Basics of the fundamental development of the formal and general education system of the Islamic Republic of Iran, P. 402, The final clause 3.5. 4)
≠ Future studies and monitoring effective developments in public education. (the document of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 19, Chapter II, Note 29)

≠ Training a monotheist and believer human, familiar, and committed to responsibilities and duties against God, himself, others, and nature. (the document of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 24, Chapter Five, The major Objectives)

≠ Environmental promotion. (the document of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 24, Chapter Five, The major Objectives)

≠ The worthiness of the preservation and promotion of individual health and environmental health. (the document of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 31, Chapter seven, operational goals and alternatives)

≠ Active participation of education in responding to urgent and general needs of society such as earthquake, environmental preservation and cleanliness of the environment (the document of the fundamental development of the formal and general education system of the Islamic Republic of Iran, p. 43, Chapter seven, operational goals and alternatives)

≠ The role of the five components of faith, science, action, preservation, and excellence of the environment, ethics, and rationale in human communication with him/herself, God, and the world of nature. (the national curriculum of the Islamic Republic of Iran, PP. 12-15)

≠ Study of the natural and human environment (Surfing Prospects and self). (the national curriculum of the Islamic Republic of Iran, P. 31)

≠ Understanding its position and dimensions in the context of the time (past, present, future). (the national curriculum of the Islamic Republic of Iran, P. 32)

≠ Understanding its position and dimensions in the context of space (home, neighborhood, city, country, land, and universe). (the national curriculum of the Islamic Republic of Iran, P. 32)

≠ Understanding its position and dimensions in the context of natural factors (natural environment, environment). (the national curriculum of the Islamic Republic of Iran, P. 32)

≠ Recognizing and responsible use of nature as a part of divine creation with the aim of reverence. (the national curriculum of the Islamic Republic of Iran, P. 32)

≠ The necessity of grounding the obedience of the Almighty Creator through the understanding of the greatness of creation. (the national curriculum of the Islamic Republic of Iran, P. 32)

≠ Attitude resulted from science, especially to the environment. (the national curriculum of the Islamic Republic of Iran, P. 36)

≠ Earning the necessary qualifications, especially environmental education. (the national curriculum of the Islamic Republic of Iran, P. 39)

≠ Self-learning and self-instruction and lifelong learning. (the national curriculum of the Islamic Republic of Iran, P. 59)

≠ Observance of ethical and moral standards related to nature and environment. (the national curriculum of the Islamic Republic of Iran, P. 61)

≠ A sense of responsibility against the phenomena of creation. (the national curriculum of the Islamic Republic of Iran, P. 61)

≠ Collaborate on the protection of land, plants, animals (land and sea), and preservation of balance in the climate. (the national curriculum of the Islamic Republic of Iran, P. 61)

≠ Looking at nature as divine creatures and knowledge book. (the national curriculum of the Islamic Republic of Iran, P. 62)

≠ Wise and responsible exploitation of natural resources and gifts of nature. (the national curriculum of the Islamic Republic of Iran, P. 62)

≠ Education, learning, and skills, the driving force of sustainable and inclusive development. (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.1)

≠ Promoting access to learning opportunities lifelong through (formal education, informal learning, and Nongovernmental education). (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.2(

≠ Creating lifelong learning skills. (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.3)

≠ Attention to the diversity of learners. (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.2)

≠ The direct impact of education on environmental sustainability. (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.4)

≠ Educational enhancement to empower learners to understand challenges and provide creative responses. (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.4)

≠ Active participation and leading life properly. (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.4)
≠ Facilitate national assessments of education for all. (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.6)
≠ Monitoring the progress of education through collecting, analyzing, and disseminating data. (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.6)
≠ Encouraging new approaches to the concept of teaching and learning. (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.6)
≠ Increasing UNESCO's attention in the future to ensure universal Proportionality in the field of education. (UNESCO Medium-Term Strategy act 2021-2014 in Education, p.7)

According to table 1, the summarized information collected from the analysis of upstream documents in the format of curriculum elements (goal, content, method, and evaluation) is classified in table 2.

Table 2. Summarized information in the format of curriculum elements

Dimensions	Component
purpose	- Understanding nature and protecting it - Familiarity with nature and its phenomena signifying the symbols of authority, wisdom, and grace of God - Awareness of the role of technology and human performance on the environment - Looking at nature as divine creatures and knowledge book - Observance of ethical and moral standards related to nature and environment - Environmental recognition and respect for nature as one of the vital aspects of life - Responsibility for the conservation of urban ecosystems - Training a monotheist Human, believer and familiar and committed to responsibilities and duties against God, himself, others and nature - Playing a constructive role in promoting life in the individual, family, national and global level - Emphasizing on the competence to establish a healthy environment
Content	- Spatial planning based on the principle of environmental protection and the restoration of natural resources - Environmental protection as the general duty of today's generations and future generations - Maintaining the natural situation of the living environment to progress - Paying Attention to the economic, security, political and environmental value of water - The necessity of grounding for the obedience of the Almighty Creator through the understanding of the greatness of creation - Not to conflict with the natural environment and degrading it - Observing the principle of environmental protection - Observing the principle of rational relationship with nature - Observing the principle of environmental conditions and perceptual relationship with elements of nature - Attitude resulted from science, especially to the environment - Wise and responsible exploitation of natural resources and gifts of nature - Earning the necessary qualifications, especially environmental education - Future studies and monitoring of effective developments in public education - Self-learning and self-instruction and lifelong learning
Method	- Creating learning opportunities to play an active role in confronting the challenges ahead in various environmental fields. - Use of participatory methods and teamwork to develop social skills in the field of environmental activities - Providing a suitable ground for activities related to the strengthening and institutionalization of issues related to environmental education - Applying and generalizing environmental knowledge to practical situations throughout life

	- More use of new methods for the conceptualization of the teaching and learning - Emphasis on learning activities and assignments in the field of futures studies and monitoring developments affecting formal public education - Creating opportunities to examine different points of view on the effects of destruction and cooperation on the protection of land, plants, animals (land and sea) and preservation of climate excellency - Creating opportunities for the development of thinking skills (problem-solving, creative thinking, critical thinking) and providing creative responses - Providing opportunities for practical training in meeting immediate and public needs such as earthquake, environmental preservation, and cleanliness
Evaluation	- Evaluate the extent of participation in environmental affairs - An assessment of the ability to simultaneously focus on different environmental dimensions - Assessing the learners' ability to apply basic research skills for problem-solving (observation, collection, interpretation, integration, and evaluation) in the field of environmental issues - An assessment of the learner's abilities in expressing personal views on environmental issues - Facilitate national development evaluations in Education and Development of International Environmental Education - Monitoring the progress of environmental education through data collection, analysis, and dissemination - Attention to the economic, ethical, and political aspects of environmental issues simultaneously - Individual and group self-assessment ability in the field of environmental education - An assessment of the moral and spiritual development of the environment

Table 3. Descriptive Indicators of the Proposed Framework of the Environmental Literacy Curriculum for the First Grade Middle School

	Items	Mean	SD	Min	Max
Purposes	1. Understanding nature and protecting it	4.53	0.51	4	5
	2. Familiarity with nature and its phenomena signifying the symbols of authority, wisdom, and grace of God	4.35	0.63	3	5
	3. Awareness of the role of technology and human performance on the environment	4.64	0.49	4	5
	4. Looking at nature as divine creatures and knowledge book	4.57	0.64	3	5
	5. Observance of ethical and moral standards related to nature and environment	4.50	0.65	3	5
	6. Environmental recognition and respect for nature as one of the vital aspects of life	4.64	0.63	3	5
	7. Valuation of the creatures and the environment	4.35	0.36	3	5
	8. Responsibility for the conservation of urban ecosystems	4.69	0.48	4	5
	9. Training a monotheist Human, believer and familiar and committed to responsibilities and duties against God, himself, others and nature	4.64	0.63	3	5
	10. Playing a constructive role in promoting life in the individual, family, national and global level	4.50	0.65	3	5
	11. Emphasizing on the competence to establish a healthy environment	4.42	0.64	3	5
Content	1. Spatial planning based on the principle of environmental protection and the restoration of natural resources	4.50	0.65	3	5
	2. Environmental protection as the general duty of today's generations and future generations	4.64	0.49	4	5
	3. Maintaining the natural situation of the living environment to progress	4.21	0.69	3	5
	4. Paying Attention to the economic, security, political and environmental value of water	4.28	0.72	3	5
	5. The necessity of grounding for the obedience of the Almighty Creator through the understanding of the greatness of creation	4.35	0.63	3	5

	6. Not to conflict with the natural environment and degrading it	4.50	0.51	4	5
	7. Observing the principle of environmental protection	4.42	0.51	4	5
	8. Observing the principle of rational relationship with nature	4.42	0.75	3	5
	9. Observing the principle of environmental conditions and perceptual relationship with elements of nature	4.50	0.65	3	5
	10. Attitude resulted from science, especially to the environment	4.53	0.51	4	5
	11. Wise and responsible exploitation of natural resources and gifts of nature	4.57	0.51	4	5
	12. Earning the necessary qualifications, especially environmental education	4.64	0.49	4	5
	13. Future studies and monitoring of effective developments in public education	4.28	0.82	3	5
	14. Self-learning and self-instruction and lifelong learning	4.57	0.51	4	5
Teaching-learning methods	1. Creating learning opportunities to play an active role in confronting the challenges ahead in various environmental fields.	4.50	0.51	4	5
	2. Use of participatory methods and teamwork to develop social skills in the field of environmental activities	4.35	0.36	3	5
	3. - Providing a suitable ground for activities related to the strengthening and institutionalization of issues related to environmental education	4.21	0.69	3	5
	4. Applying and generalizing environmental knowledge to practical situations throughout life	4.14	0.66	3	5
	5. More use of new methods for the conceptualization of the teaching and learning	4.07	0.73	3	5
	6. Emphasis on learning activities and assignments in the field of futures studies and monitoring developments affecting formal public education	4.35	0.49	4	5
	7. Creating opportunities to examine different points of view on the effects of destruction and cooperation on the protection of land, plants, animals (land and sea) and preservation of climate excellency	4.07	0.61	3	5
	8. Creating opportunities for the development of thinking skills (problem-solving, creative thinking, critical thinking) and providing creative responses	4.14	0.66	3	5
	10. Providing grounds for practical training in meeting immediate and public needs such as earthquake, environmental preservation, and cleanliness	4.64	0.49	4	5
	1. Evaluate the extent of participation in environmental affairs	4.14	0.53	3	5
	2. An assessment of the ability to simultaneously focus on different environmental dimensions	4.07	0.61	3	5
	3. Assessing the learners' ability to apply basic research skills for problem-solving (observation, collection, interpretation, integration, and evaluation) in the field of environmental issues	4	0.78	3	5
evaluation	4. An assessment of the learner's abilities in expressing personal views on environmental issues	3.78	0.69	3	5
	5. Facilitate national development evaluations in Education and Development of International Environmental Education	3.64	0.74	3	5
	6. Monitoring the progress of environmental education through data collection, analysis, and dissemination	4	0.67	3	5
	7. Individual and group self-assessment ability in the field of environmental education	4.28	0.46	4	5
	8. An assessment of the moral and spiritual development of the environment	4.14	0.36	4	5

As Table 3 shows, the majority of respondents assessed the proposed framework desirable.

Table 4. Final Items factor load of environmental literacy

	Items	factor load
Purposes	Understanding nature and protecting it	0.66
	Familiarity with nature and its phenomena signifying the symbols of authority, wisdom, and grace of God	0.79
	Awareness of the role of technology and human performance on the environment	0.96
	Looking at nature as divine creatures and knowledge book	0.99
	Observance of ethical and moral standards related to nature and environment	0.96
	Environmental recognition and respect for nature as one of the vital aspects of life	0.96
	Valuation of the creatures and the environment	0.81
	Training a monotheist Human, believer and familiar and committed to responsibilities and duties against God, himself, others and nature	0.87
	Playing a constructive role in promoting life in the individual, family, national and global level	0.98
	Emphasizing on the competence to establish a healthy environment	0.94
Content	Spatial planning based on the principle of environmental protection and the restoration of natural resources	0.90
	Environmental protection as the general duty of today's generations and future generations	0.62
	Maintaining the natural situation of the living environment to progress	0.66
	Paying Attention to the economic, security, political and environmental value of water	0.94
	The necessity of grounding for the obedience of the Almighty Creator through the understanding of the greatness of creation	0.76
	Not to conflict with the natural environment and degrading it	0.78
	Observing the principle of environmental protection	0.64
	Observing the principle of rational relationship with nature	0.87
	Observing the principle of environmental conditions and perceptual relationship with elements of nature	0.71
	Attitude resulted from science, especially to the environment	0.92
	Wise and responsible exploitation of natural resources and gifts of nature	0.90
	Earning the necessary qualifications, especially environmental education	0.78
	Future studies and monitoring of effective developments in public education	0.81
	Self-learning and self-instruction and lifelong learning	0.81
Teaching-learning methods	Creating learning opportunities to play an active role in confronting the challenges ahead in various environmental fields.	0.83
	Use of participatory methods and teamwork to develop social skills in the field of environmental activities	0.78
	Providing a suitable ground for activities related to the strengthening and institutionalization of issues related to environmental education	0.96
	Applying and generalizing environmental knowledge to practical situations throughout life	0.96
	More use of new methods for the conceptualization of the teaching and learning	0.86
	Emphasis on learning activities and assignments in the field of futures studies and monitoring developments affecting formal public education	0.75
	Creating opportunities to examine different points of view on the effects of destruction and cooperation on the protection of land, plants, animals (land and sea) and preservation of climate excellency	0.84

	Creating opportunities for the development of thinking skills (problem-solving, creative thinking, critical thinking) and providing creative responses	0.34
	Providing grounds for practical training in meeting immediate and public needs such as earthquake, environmental preservation, and cleanliness	0.32
Evaluation	Evaluate the extent of participation in environmental affairs	0.84
	An assessment of the ability to simultaneously focus on different environmental dimensions	0.75
	Assessing the learners' ability to apply basic research skills for problem-solving (observation, collection, interpretation, integration, and evaluation) in the field of environmental issues	0.81
	An assessment of the learner's abilities in expressing personal views on environmental issues	0.88
	Facilitate national development evaluations in Education and Development of International Environmental Education	0.80
	Monitoring the progress of environmental education through data collection, analysis, and dissemination	0.72
	Individual and group self-assessment ability in the field of environmental education	0.87
	An assessment of the moral and spiritual development of the environment	0.80

Table 5. Fitness indexes of the model and results for each of them

Index	Index Standard value	Index value in the desired model	Result
(X^2/df)	-	1.974	Model fitness is appropriate
p-value	≥0.05	0.001	Model fitness is inappropriate
GFI	≥0.09	0.95	Model fitness is appropriate
AGFI	≥0.09	0.90	Model fitness is appropriate
NFI	≥0.09	0.94	Model fitness is appropriate
CFI	≥0.09	0.92	Model fitness is appropriate
RMR	≤0.1	0.081	Model fitness is appropriate

The results of Table 4 show that the factor load of all items is more than 0.3.

As shown in Table 5, the Statistics obtained in the model are X^2/df = 1.947, GFI=0.95, AGFI=0.90, and RMR=0.81, which indicate the good fitness of the model.

Figure 1 shows the final validation framework for the environmental education curriculum of the high school in the format of four elements of purpose, content, method, and evaluation. The derived components are extracted from theoretical basics and statistical tests of this research. According to the figure in the appendix, the results of examining the model and the fitness determination tests indicate that the proposed model has good fitness and the four elements interact with each other and present an interactive model by which the most powerful correlation between the two components of purposes and content was found to be 0.90 and the weakest correlation was found between the two components of purposes and evaluation to be 0.35. The relationship between content and evaluation components is 0.80 and content and method is 0.82 as powerful relationships and above 0.7 and the relationship between purposes and method is 0.58 and evaluation and method is 0.61.

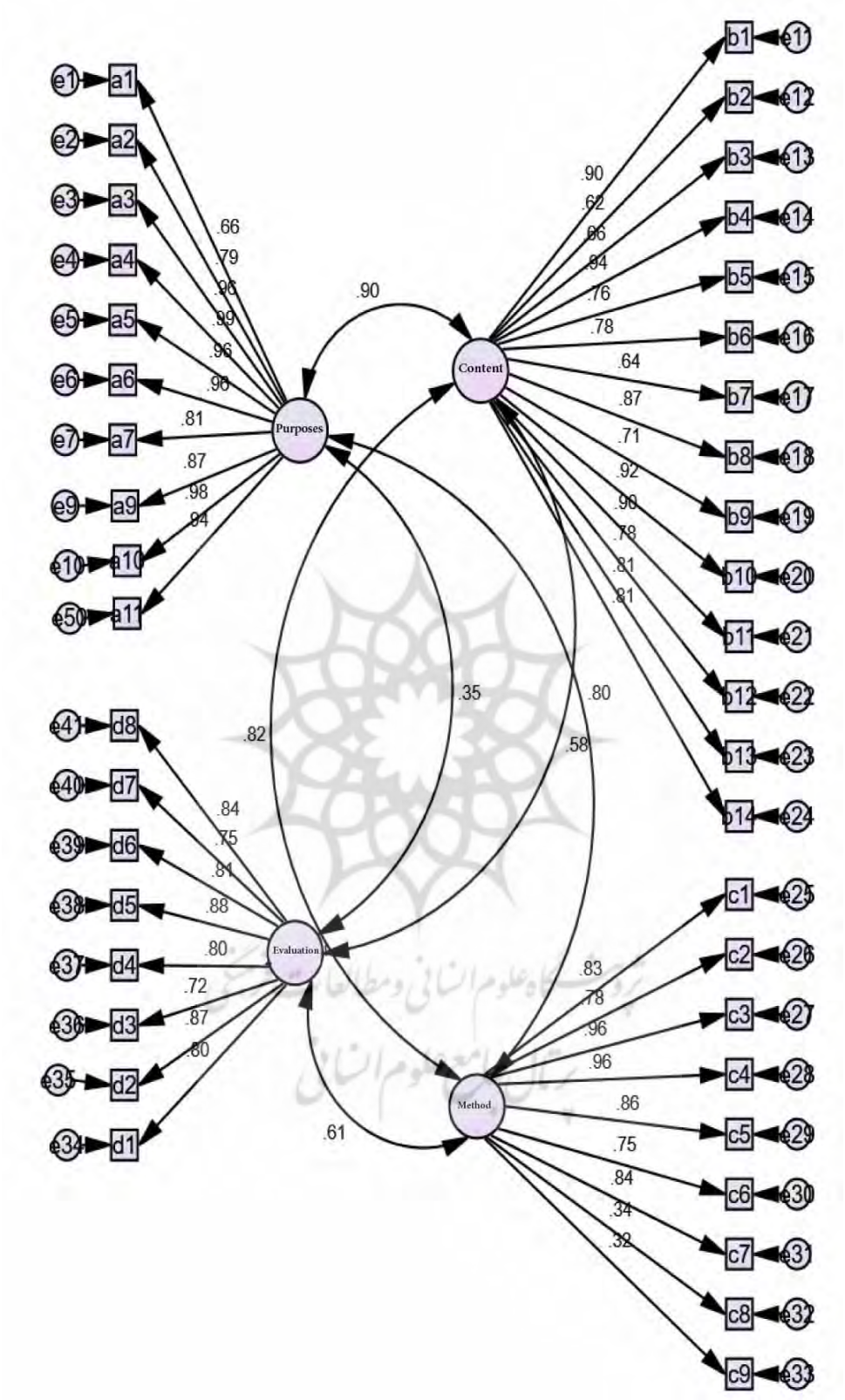

Figure 1 Final proposed Validation Framework for the Environmental Education Curriculum in the middle school

DISCUSSION AND CONCLUSION

1) The main cause of the escalation of environmental crises must be sought in patterns dominated by societies, which are largely based on positivism ideas. The main reason for this is the belief in the separation of science from religion and mysticism and spirituality. To overcome this inefficiency, the monotheistic model is the transcendental model for examining the environmental crisis; because the credit is Islamic law, which has not neglected any point in directing mankind. The teachings of Islam are very important to the environment and its maintenance, and it forbids anyone from destroying it. God has chosen mankind as his successor on the land and subjugated nature, but this does not mean that he is free to act in nature according to his will. But mankind is responsible to God and all creation, and he must strive to preserve nature as a divine trust. Islamic culture is the nature of mankind and the basis for its cultivation and perfection; Therefore, it resists with any factor that could harm this and make it insecure for human growth; Because the system of nature is created based on wisdom and all its elements are in place to bring mankind in their light the spirituality, perfection of humanity, and the happiness of the world and the Hereafter (Shahvali, Kianmehr, Karami, 2014). Therefore, in this research, the purpose of the environmental education curriculum design was to rely on documents aimed at creating and developing an Islamic-revolutionary identity in the future of this society. Documents that integrate rational, religious, scientific, and ethical education of students so that they can take their position on themselves, God, other human beings, and the system of creation properly and comprehend the ability to continually reform their personal and social status. Therefore, in this research, by analyzing the qualitative content of upstream documents, the nature of the environmental education curriculum elements was determined. The selection of four elements of purpose, content, methodology, and evaluation as the most important elements of the curriculum for designing the environmental curriculum framework was confirmed by many curriculum specialists (Mehrmohammadi et al. 2017). As the data analysis from the validation of the proposed framework showed that, for the majority of respondents, all of the extracted purposes from upstream documents related to environmental education have a high utility in targeting the middle school in Iran; Of course, among these purposes is awareness of the role of technology and human performance in the environment, the sense of responsibility for urban ecosystems conservation, training monotheistic humankind and believed in resurrection and familiar and committed to responsibilities and duties against God, Others and nature have the most acceptance. The common point is creating commitment toward environmental protection along with the transfer of environmental knowledge, Responsibility for Creator, Creating the belief that oppression is the nature of sin. Therefore, as outlined in the National Curriculum Document, its presentation is also visible in the goals outlined in this study; the educational system should provide learners with a focus on the creation system and its wonders, and the basis for believing in value, purposefulness and the creation law that creates the belief in the beauty of the creative world as the manifestations of act and figure of God. Science is another purpose about phenomena, relationships, events, and laws of the creative world and how to connect people with them and their optimal utilization of them, to enable learners to preserve and enhance the environment and to value the creatures and the environment that should be emphasized in environmental education. However, the results of AzadKhani et al.

(2014) indicate that although environmental literacy can have a positive impact on environmental behavior, students' knowledge of general and specific environmental issues is low. Amini and Mashallahi (2014) also point out the importance of learning environmental indicators and components in textbooks. On the other hand, as the results of the research by Arbab, Esmail and Mahd (2011) show that knowledge about environmental issues is not necessarily a positive development of peripheral attitudes, but environmental perceptions are based on different sources of information and one of the sources of attitude can be knowledge of the man Towards environmental issues And other factors such as collaborative and media activities such as newspapers, online magazines, and other subfactors that can play a role in this regard. Therefore, along with the elements of purpose and content, teaching-learning approaches are other important factors influencing the transfer of environmental knowledge of learners toward real-life fields and also the basis for their favorable attitude toward environmental protection. But what is certain is not only the formulation of desirable purpose and content, and the consideration of the realization of purposes is not enough; An element that plays a key role in this regard is evaluation; as the evaluation cause to implement variations, its serious role must be considered in achieving the goals and these are issues that were considered in the present study and the four key elements that contribute to environmental preservation education or environmental training was considered, and finally, an environmental curriculum framework was introduced for the middle school course. The curriculum planners and textbook authors can benefit from this framework as a desirable condition for assessing the current status of the middle school curriculum and the basis for reforming the curriculum of the country in the middle school course.

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