

## Conceptualization of green curriculum in Iran's higher education system

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### ABSTRACT

Today, the world is facing various environmental hazards as a result of non-standard human activities, and different societies are forced to find solutions to manage and solve them. Universities are one of the significant social institutions in every society, which generally take on special duties when a crisis occurs. Regarding the management of environmental risks, one of the tasks assigned to universities is to implement the idea of a green university, which has often been implemented in different parts of the world in the form of greening the physical environment of the university. While green education in general and green curriculum in particular can increase the effectiveness of universities' activities in this field. Hence, this qualitative research aimed to conceptualize the green curriculum in Iran's higher education system. The population was the curriculum experts who have been active in the field of sustainability and environmental management. Moreover, a collection of authentic scientific papers related to the research objectives were also used in order to further enrich and complete the data. Data analysis was done through semantic content analysis. The results led to extraction of 47 codes related to the concept of the green curriculum. Accordingly, the concept of green curriculum can be categorized in three dimensions: concepts aimed at the society, concepts aimed at the learning ecosystem, and concepts aimed at the classroom and learners.

**Keywords:** *Learning ecosystem, citizenship competencies, sustainable development, green university, environmental considerations in higher education*

### Introduction

The Green University is defined as a higher education institution whose purpose is to reduce the negative environmental, economic, social and health effects caused by the misuse of resources to perform tasks in the field of teaching, research, development, participation and monitoring of solutions that help the society to move towards a sustainable lifestyle (Ragazzi & Ghidini, 2017). According to the definition presented in *The Encyclopedia Of Sustainability In Higher Education*, a green university is a university that integrates environmental considerations in the three dimensions of education, research and physical environment with the aim of achieving sustainability. According to the definition presented in the encyclopedia of sustainability in



higher education, a green university is a university that integrates environmental considerations into the three dimensions of education, research and physical environment to achieve sustainability (Santa et al., 2019). This is despite the fact that many leading universities in the field of green universities have only emphasized on the greening of the physical environment and have paid attention to measures based on the management of energy consumption in the university environment (Zhao Geng et al., 2013). While maintaining the importance of the green environment in the university, it should be kept in mind that what enables continuity and influence in the field of green university is paying attention to the social aspect of this issue and training conscious activists that the realization of this importance depends on the education of individuals. Providing education and informing people in universities is possible in different ways, for example, forming scientific associations, holding seminars and workshops, and distributing brochures and scientific materials, are some useful educational measures in universities that can be used in the greening the universities; But today's human need to protect the environment requires more serious efforts in this field. According to Xiong et al (2013) the integration of green education in the official curriculum of universities is considered a vital issue that can lead to the improvement of the global performance in the field of green universities, but the studies show little attention to this subject. Some researchers have investigated the importance of green universities in the curricula of different fields concluded that the most concern about the green curriculum can be seen in agriculture and forestry fields, while in other fields especially sports, art and language fields have the least amount of concern in this field. This is while dealing with the green curriculum is the fundamental need of all people in human societies, which cannot be limited to a specific discipline. So, the concept of "green" should be integrated into all academic disciplines to include green concepts in literature, philosophy and education-related disciplines (Motamedi & Yamini Douzi, 2018). As it was explained, despite the importance of the green curriculum as one of the most important needs of human societies, this issue has not been given sufficient attention and an agreed concept for the green curriculum is not available. Hence, the current research was conducted with the aim of conceptualizing the green curriculum.

## Method

This qualitative research is in the category of applied research. In terms of the method of data collection, it is in the descriptive research group. The population of this research included all academic experts who have authorships and research records related to the field of sustainability in universities and higher education institutions of Iran, who were selected by purposeful sampling with a snowball approach. Accordingly, 20 experts in curriculum planning, environment, and sustainable development participated in this research through semi-structured interviews. In addition to conducting interviews with experts, to complete and enrich the research data, a document review was also conducted. The documents examined in this section included research conducted in green curricula that were published in national and international databases. In order to check the accuracy and validity of the research tool in the documentary section, the constant comparison technique was used. Data analysis was done through conceptual content analysis. Thus, in the first step, open coding was done by extracting all the concepts and propositions that expressed the concept of the green curriculum. In the following, the codes that were repeated with different titles were identified as subcategories. After categorizing and connecting the categories (axial coding), the storyline that connected the categories (selective coding) was shaped. Finally, by compiling and designing a schematic model and a final framework the research was completed (Corbin & Strauss, 2008).

## Results

Examining all the concepts extracted from the interviews and documents (Table 1) showed that, unlike the conventional curriculum, the concept of green curriculum is not limited to to the classroom, teacher, and learner. Rather, the definition of the green curriculum, because of its because it intertwined with society and the learning ecosystem, has expanded beyond the classroom and includes educational institutions and society. The green curriculum includes definitions containing society, the learning ecosystem, and classroom related matters.



**Table 1**

*Concepts extracted from interviews and documents*

Level	Concept
Concepts aimed at society	<p>Concepts related to the classroom and learning to create a sense of values such as contributing to public welfare and paying attention to human survival based on initiative</p> <p>Teaching the ability to analyze the social, economic and environmental dimensions of various professional activities</p> <p>Teaching the basic principles of environmental sustainability to learners to act as a responsible, responsive citizen who believes in sustainability</p> <p>Covering the needs of society in the field of green products and services</p> <p>Training people who are aware of national and international environmental issues</p> <p>Training graduates capable of making decisions and working in the field of environmental protection</p> <p>Focus on workforce development and "green jobs"</p> <p>Culturalization for environmental protection</p>
Concepts aimed at the learning ecosystem	<p>Teaching the principles of sustainability according to the nature of each discipline</p> <p>Creating the spirit of collective effort to solve environmental challenges among the activists of the educational system</p> <p>Emphasis on educating a generation that is aware of environmental considerations</p> <p>Encouraging lifelong learning about environmental issues</p> <p>Promoting environmental principles in the operation and management of educational institutions</p> <p>A paradigm shift in the way education deals with the earth and its future</p> <p>Integration of sustainability principles in different elements of the learning ecosystem</p> <p>Integrating the themes of all three dimensions of sustainable development according to the current important issues in the university curriculum</p> <p>Paying attention to environmental issues in the hidden dimension of the curriculum</p> <p>Considering the role of the teacher as a model for learners in environmental behaviors</p> <p>A comprehensive approach to various environmental issues</p> <p>Attracting people interested in serving the environment</p> <p>Considering the relationship between the university and institutions related to the environment</p> <p>Considering the green curriculum as part of the learning ecosystem</p> <p>Considering extracurricular activities based on environmental issues</p> <p>Considering the environmental considerations of sustainable development in all academic units in all disciplines</p> <p>Designing a learning environment based on sustainability principles</p> <p>Designing a learning environment based on sustainability principles</p> <p>Flexible content to update people's awareness of national and international environmental challenges</p> <p>Alignment with the ideals and goals of the educational program (environmental goals should be considered first in educational planning and the necessary foundation should be provided)</p>
Concepts related to the classroom and learners	<p>Balanced promotion of environmental knowledge, attitude and skill</p> <p>Making people aware of how unsustainable behaviors affect the environment</p> <p>Informing people about the importance and necessity of environmental protection</p> <p>Teaching to prevent environmental damage</p> <p>Operational training to solve environmental challenges</p>

Educating students to understand the connection between their academic activities and the environment  
 Creating awareness among students to achieve development and sustainable results  
 Motivating students to serve the environment  
 Creating a commitment in learners to respect the right of the future generation to use resources and the environment  
 Creating a positive attitude regarding nature protection  
 Creating a positive attitude regarding energy consumption management  
 Cultivating the ability to assess the consequences of personal effective behaviors on environmental sustainability  
 Creating a hopeful spirit regarding solving environmental hazards  
 Cultivating a hopeful spirit regarding solving environmental hazards  
 Emphasis on creating green thinking among learners  
 Emphasis on changing the behavior of learners regarding compliance with the principles of sustainability  
 Analyzing the destructive results of non-environmental activities of the bygone generation  
 Determining the characteristics of graduates committed to the principles of sustainability  
 Understanding the effective role of each person in achieving sustainability  
 Considering the principles of sustainability in the context of different courses  
 Understanding the nature of people's behavior toward sustainable lifestyles  
 Learning environmental principles through action

## Conclusion

Green curriculum, in contrast to conventional curricula that are developed based on specialized fields and prepare people for professional success, focuses on preparing people for sustainable living in society with respect for the rights of others and generations. Based on the findings of this research, in explaining the concept of green curriculum, three basic categories can be proposed, including concepts aimed at society, concepts aimed at the learning ecosystem, and concepts aimed at the classroom and learners.

**Society-oriented concepts in the green curriculum:** in today's society, disruption of the balance between the population of the planet has limited the resources available to humans and as a result of the destructive activities of humans to obtain more resources, it has left destructive effects on the environment. Hence, the importance of citizens' participation in environmental risk management has increased significantly. Therefore, carrying out educational activities to inform citizens about the consequences of domineering activities and destroying the environment has become more important than in the past.

**Concepts aimed at the learning ecosystem:** In this aspect of the green curriculum concept, it is important to consider the educational system as a coherent whole, of which the green curriculum is considered a part. In other words, the green curriculum is not considered a part of the learning environment, but other components of the educational system should also be in line with the goal of environmental management alongside the green curriculum. That is why in many cases, greening the learning space is also included in the agenda of the Green University. In this aspect of the concept of green curriculum, it is important to create a spirit of empathy and collective effort among all actors of the educational system.

**Concepts aimed at the classroom and learners:** In explaining the concept of the green curriculum, some concepts include actions that are presented in more detail and are intended to be used in the classroom. In this aspect of the green curriculum, the individual role of the learners as a member of the society who needs to play an active role in environmental risk management is considered.

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