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# Investigating the significance of landscape in designing library by emphasizing on the enhancement of learning



Parinaz Motealleh <sup>a</sup>, Mojtaba Parsae <sup>a,\*</sup>, Mehdi Sheybani <sup>b</sup>

<sup>a</sup> Department of Art & Architecture, Shiraz Branch Islamic Azad University of Iran, Shiraz, Iran

<sup>b</sup> Department of Art & Architecture, Shahid Beheshti University, Tehran, Iran

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**Abstract** Numerous studies have been carried out related to landscape, landscape architecture and urban landscape and it indicates the significance of this issue among designers and scholars. These studies have been dealt with different aspects of landscape and investigated the reciprocal effects between landscape and human. In fact, landscape is recognized as a part of environment; thus as environment and human have a dynamic and reciprocal relationship, landscape has such an affordances. Indeed, landscape can create peace and cheerfulness for users due to its affordances. According to this view, the following research investigates the significance of landscape in designing library and clarifies the different aspects of its influence on the library space. Therefore, the outcomes of this research present a conceptual model from the integration of landscape and library space with the purpose of enhancing learning process. The research method is qualitative and it is based on descriptive–interpretative approach. This study investigates initially the concept of landscape and landscape architecture; then, it deals with the analysis of the relation between landscape and environment. After studying the affordances of environment and landscape from different perspectives, the environment of the library and the circumstances in which users study are analyzed. Finally, the findings of the research are presented based on the investigation and analysis.

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\* Corresponding author. Tel.: +98 9171156195.

E-mail addresses: [parinaz\\_motealleh@yahoo.com](mailto:parinaz_motealleh@yahoo.com) (P. Motealleh), [parsaeemojtaba@gmail.com](mailto:parsaeemojtaba@gmail.com) (M. Parsae), [m\\_sheybani@sbu.ir](mailto:m_sheybani@sbu.ir) (M. Sheybani).

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## Introduction

Landscape is one of the important and fundamental issues which have been the center of attention recently. Landscape has had a unique position in discussions related to sustainable development in architecture and urban designing and it has been studied largely so that landscape is regarded as one of the crucial elements in urban sustainable development. Additionally, this issue has been studied seriously due to the

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consequences of urban development and environmental problems. In micro scale, landscape represents itself as the architecture of a building and in macro scale, as a city and urban designing. In fact, landscape makes up the major part of human environment and has an impact on the quality of life of people. Landscape is the entrance of nature to people's lives. Thus, with the intention of clarification, this research is intended to investigate the concept of landscape, landscape architecture and different views in this regard. Next, the relation between landscape and architecture is being studied. Then the impacts of landscape, environment, and their elements on individuals are being explored. After investigating the characteristics of library as an educational setting, the environmental factors contributing to successful learning in library are examined. Eventually, the results of this research are concluded based on the nature of landscape and its impacts on library. The research methodology is qualitative and based on descriptive-interpretative approach.

### Concept of landscape and landscape architecture

Landscape literally means a picture of nature that can be seen from a distance [1]. In fact, landscape is a part of nature where we settle in and can be perceived due to our senses and this direct relation largely affects quality of our lives [2]. Although the concept of landscape is different for people, human has understood that nature comprises of dependent elements that represents the fundamental aspects of being. Human has rooted in nature and depends on natural forces [3]. Here, landscape means the environment in which nature is dominant [4]. In nowadays world, landscape is a live and dynamic entity which is affected by human, the way he interacts and also association with memories for a long period of time. Thus, landscape is a concrete mental phenomenon [2]. Furthermore, the growth of human mental capabilities is continued from achieving the disperse qualities to more coherent experiences in which components and reciprocal relationships are perceived generally [3]. Landscape has an important role in making relationship between nature and both human and human communities and also has a significant role in deepening this relation [1]. In giving the definition of landscape architecture, different views have been put forward. Some of them have been presented in Table 1.

In addition, the three-dimensional and environmental field of landscape design requires the designer to produce beautiful, practically useful, and well-functioning end products [5].

In a general sense, landscape architecture can be introduced as a designing and planning of open spaces around human dwellings in different scales and based on their cultural perspectives [6]. Landscape architecture, with the purpose of organizing environment desirably, deals with designing open and outer spaces [7]. To put it simply, landscape architecture is the art and science of organizing land, spaces, and the elements on them to be used by human in an appropriate, healthy and pleasant way [8]. Accordingly, designed environment from landscape architecture should be efficient, beautiful, safe and enjoyable [9]. Indeed, landscape design makes meaningful contributions to culture [10].

Analyzing the presented definitions by landscape architects is indicative of the great closeness of the purpose of this field

with that of an architecture in creating and physical organizing of human spaces, although the techniques and tools for achieving these goals are different [11]. In fact, one of the main purposes of landscape designing is integrating human technology (building) and natural environment [12], although natural environment and its elements, especially land, have received much more attention [11]. The main purposes of landscape architecture have been summarized in three esthetic, functional and cultural clarification aspects [1] in which two factors of human and nature along with their elements are obviously in a reciprocal relationship [11]. The elements of Landscape architecture can always be found in a complete and harmonious urban planning and a lot of stimulus plans (infrastructures) are the projects of landscape architecture and vice versa [13]. Landscape designing includes both visual aspects and biological, hydrological and geological concepts; therefore, the greeneries of cities is one of the main parameters of urban sustainability. Thus, the instructions of landscape architecture, as an integrated part of designing framework, should be considered in advanced or in parallel with designing process [14].

### Landscape and environment

Environment can be attributed implicitly to everything around us, whether man-made or natural [15]. Landscape is part of an environment which is a place of our current actions and we can interact with it at the present moment [1]. In fact, environment and nature are the main contexts of landscape architecture [16]. One of the differences between environment and landscape is that "landscape", as one of the facts of daily life, has a function and flexibility which is more understandable in comparison with environment [1]. Considering landscape as a phenomenon, one of the factors in its perceiving is finding out the structure and understanding the principles among its components [17]. Accordingly, it can be mentioned that landscape architecture is the art of integration the form of land, water, plant, buildings, flooring and climate with each other to make a pleasant outer space [18].

The main emphasis of landscape architecture is placed on the elements of land in outer and public spaces [7]. Therefore, landscape architecture deals with all types of outer spaces, large or small, urban or rural, by using hard and soft materials. In fact, a designer of landscape design must consider the relation among the building and surrounding environments and be aware of the climate impacts and the relation among land, plants, water and building materials in order to create a landscape fit to natural environment by human [12].

The comprising elements of landscape can be classified as follows [19]:

- *Physical elements*: the elements comprise context of space and include artificial elements (body, flooring, furniture) and natural ones (water, vegetation, topography).
- *Non-physical elements*: climatic factors (temperature, radiation, wind, humidity) and non-climatic factors (light, smelling, noise, weather).
- *Human elements*: human factors, individuals and their activities in space are integrated parts of space (type, location, shape, required facilities).

**Table 1** Different definitions of landscape and landscape architecture from different scholars' points of view.

Scholars	Viewpoint
Oxford Dictionary	Landscape means that all the visible features of an area of land, often considered in terms of their esthetic appeal. Landscape architecture is the art and practice of designing the outdoor environment, especially designing parks or gardens together with buildings and roads [47]
Longman Dictionary	Landscape means that an area of countryside or land, considered in terms of how attractive it is to look at. Landscape architecture is the profession or art of planning the way an area of land looks, including the roads, buildings, and planted areas [48]
European Landscape Convention	Landscape is a formal expression of the relationships between the individuals or a society with a topographically defined territory, the appearance of place (the result of actions over time), natural and human factors [49]
Jackson and Mann	Landscape is defined as a composition of man-made spaces with its significant characteristics and land features, functioning and evolving to serve for the community [49]
Shamsuddin et al.	Landscape is the result of different interaction between components of the environment such as natural (that influence by geology, soils, climate, flora and fauna) and cultural (historical and current impact of land use, settlement, enclosure and other human interventions), which perceived by people [49]
Kara	Landscape is a culturally shared environment; made up of woods, mountains, waters, and fields, it is where we grow up and live
Augustin Berque	Landscape is a social fact, a natural, subjective and objective, material and cultural product that is real and symbolic [29]
Pitte	The landscape is the expression observable through the senses, of the earth's surface, resulting from the combination between nature, technology and human culture. It is continuously changing, and it cannot be perceived otherwise but in its dynamics, the history being the fourth dimension [29]
Enache and Craciun	The landscape is composed of areas – including the overall volumetric of its components (the morphology and the spatial structure), but also the activities, the processes and the society that uses, consumes and/or dwells in that space [29]
Sprin	Landscape suggests the purposeful emotional and esthetic formation sense in history. Landscape language provides the dynamic integration of place and the dwellers [50]
Razzaghi Asl, Faizi and Behzadfar	Landscape architecture, with the purpose of organizing environment desirably, deals with designing open and outer spaces [7]
Shahidi, Ansari and Yalpanian	In a general sense, landscape architecture can be introduced as designing and planning of open spaces around human dwellings in different scales and based on their cultural perspectives [6]

In landscape ecology, the landscape component is divided into three elements; structure, function, and variation [20]. From another point of view, elements comprising landscape can be classified into two categories of [14]:

- Hard elements (such as tiling and furniture).
- Soft elements (that can be a determining element in making space identity such as trees and other vegetation).

All effective landscape designs rely on basic principles. An understanding of these principles prevents the creation of ugly landscapes and fosters the creation of beautiful ones. Unity, simplicity, variety, balance, sequence, and scale are terms often associated with art [5].

#### Affordances of environment and landscape

The impact of environment on human has been considered significantly and environment and its elements have been used to affect human behavior [21]. In fact, the relationship between human and environment is reciprocal and they both affect each other and are affected by one another [22]. Human, environment and communication are three basic factors in relationship between human and environment [23]. Thus, an environmental design is made based on the relationship between environment and human behavior [24]. Generally,

the proposed theories regarding the causal relationship between environmental factors and social behavior are divided into two parts. One of them affects natural environmental elements (climate, wind, temperature, mountain, etc.) and another one emphasizes on build environment factors especially, urban environments and their impacts on human behavior [25]. In fact, from scholars' view point, the physical structure affects communication between people, culture of people and social ecology [26].

The dynamic and reciprocal relationship between perceiver and the environmental affordances was considered by scholars [27]. Affordance of everything, whether physical or non-physical, is the possession of that thing which makes it usable for a specific creature or a member of that species. To refer to the same conceptualization, Louis Kahn and Lancelot Brown have used the terms availabilities and capabilities respectively [13].

Since the landscape is a part of environment, the main trends in landscape perception were categorized in four paradigms: the expert, the psychophysical, the cognitive, and the experiential [5]. In fact, the two main factors in landscape design are the users and their psychology [28]. The relationship between a person and the space observed causes to perceive and understand the landscape [29]. So that, landscape architecture is an environmental designing and using which forms the interaction and action of human and/or natural-cultural factors by combining the science and art together [28].

Although the characteristics of a physical environment can influence the development and accuracy of a mental/cognitive map and affect subsequent way finding behavior [5], the way in which humans intervene on the landscape depends primarily on the technical facilities that it holds, or has held at one time [29].

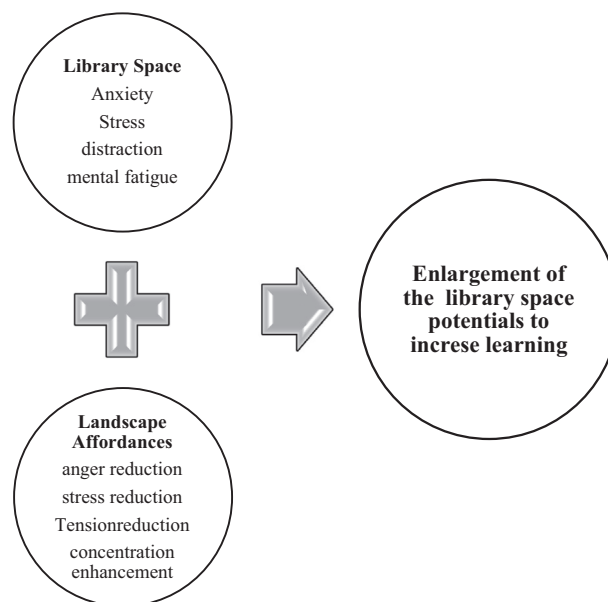
Additionally, one of the significant functions and impacts of landscape architecture is the ecologic function which is originated from nature [30].

Researchers believe that environmental affordance in landscape plays a key role in alleviating the so-called lifestyle-related symptoms (e.g. burnt out disease, stress-related pain), so that natural views and landscape sceneries ease people's pressure and change their mood [27]. Based on these researches, nature is able to compensate for the damages to identity and brings about a well-balanced personal growth [31]. For instance; water and green space are two fundamental elements comprising landscape and nature. Both psychological effects of water, as a life giving element which attracts human, and its visual effects are significant [32]. Green space has a crucial role in expanding sceneries, providing mental peace for citizens, improving air quality, reducing noise pollution, and preventing undesirable effects of automated life style [33]. In an urban structure, green space works as a filter to reduce environmental pollution such as smoke and noise and it guarantees relatively the personal and public health of citizens along with their environmental peace [34]. One of the main purposes in green space designing is to achieve social and psychological effects of bringing human and nature closer [31]. Investigations reveal that trees and park sceneries cause the reduction of stress, anger and tension, landscape enjoyment, and concentration enhancement [35]. A park, with variety of plants, has a direct restorative impact and is capable to revitalizing the citizens [36]. Moreover, it is demonstrated that patients get recovered more quickly when looking out of a window with natural scenes [27].

Hartig et al. [37] illustrate that looking at trees and natural resources make reduction of stress, blood pressure, anger and aggression and bring about liveliness. In this field, the researches reveal that environmental stressors (e.g., crowding, noise) can elicit substantial stress in people, while visual access to nature shows effects on stress recovery [27]. Old garden and fruit trees with numerous flowers increase concentration [38]. Bringing people closer to nature, by looking at trees, flowers, growing plants and observing seasonal differences is instructive and also affects peoples' spirit and their life styles [39].

### Library environment and its effects on learning

According to the suggestion of sixteenth public conference of UNESCO in 1970, library is an institution including an organized set of books, periodicals, or any audio-visual or graphic materials along with other services which are provided by its staff to facilitate using these materials to fulfill users' informative, searching, educational and entertaining needs [40]. Meeting informative needs of users in shorter time and in the best way is the main activity of libraries [41]. The environment and space of library should bring the sense of enjoyment and peace and create an appropriate space for thinking, contemplation and successful learning of users to inspire the sense of creativity and innovation while studying and also help their



**Fig. 1** A conceptual model of integrating landscape with library spaces to increase learning and efficiency.

inner talents to flourish in library [42]. Benefiting from library is possible if users can concentrate easily and do their researches and if libraries do not provide these conditions for their users, waste of time and confusion will be the consequences which cause anxiety in library users [43]. If anxiety increases abnormally, it causes distraction and distress and consequently it causes low efficiency [22]. The effective factors in library anxiety are divided into three groups including situational, state, and environmental factors [44]. In addition, researches on children learning and their environment indicate that the quality of learning in children has a positive, direct correspondence with increasing environmental qualities of school yard, thus one of the attitudes regarding children learning in open spaces is the attitude of learning through landscape [45].

Moreover, Attention Restoration Theory (ART) claims that surrounding information is processed by people through two kinds of attention: one is directed attention (which is a type of temporary symptom of the brains that makes people feel distractible, impatient, forgetful, or cranky) the other is fascination or involuntary attention [27]. So that, concentration and constant attention, like studying and sitting at a desk, cause mental fatigue and it leads to mental distraction and increasing mental errors and results in irritability, distraction, irascibility, impatience and low efficiency [46]. Additionally, nature encompasses four features as a restorative environment: being away, extent, fascination, and action and compatibility; hence performs well in mental fatigue recovery [27].

### Conclusion

Based on the literature reviewed, the relationship between human and environment is a dynamic and reciprocal one and landscape has a pivotal role in increasing the quality of human dwellings. Human, environment and communication are three significant factors in relationship between human and environment. Additionally, other parameters in landscape

designing are nature, human, his psychology, and the relationship among them. Then, the impacts of environment and landscape on human and after that, their affordances in making places with higher qualities from various aspects were investigated. Landscape has an important role in reducing stress and tension and increasing concentration. Moreover, studies indicate that stress and concentration are two involving factors that influence people, and consequently their efficiency and their learning. Thereby, based on different viewpoints regarding the influences of environment on human, library spaces should help reduce stress, increase relaxation and concentration of users. In fact, library environments should be in a way that users feel less anxious and stressed out and have more peace and concentration while they are studying. Thus, by concentrating on these two parameters, it can increase the potentials of library environment to increase learning more. As mentioned in literature review, landscape can create peace and cheerfulness for users due to its affordances. People can relieve their tension, mental fatigue by being in nature or even by looking at it. In fact, this research indicates that by integrating the potential of landscape and library spaces, it can create an environment in which the efficiency and learning of users improve. Fig. 1 shows the conclusion of this research as a conceptual model.

#### Conflict of interest

There is no conflict of interest.

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