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# Review of storytelling characteristics in architecture education

M. Yaghoubi, J. Shaeri

**Abstract**— Storytelling is one of the most important parts of people's life that you can see it in any kind of societies and even cosmos. We can use the features of storytelling in our educational methods. The goal of this study is to check out the features of the storytelling method in architecture education. We have been checked out and reviewed many different sources for achieving this goal. The result shows that for making this method better in the architecture field, we can use different equipment like books and digital lectures. At last, it was expressed 36 ways of storytelling in architecture education that can be used to teach in academic places.

## I. INTRODUCTION

TODAY almost everyone feels that education is a basic need. Educational systems and programs are constantly transforming as other social, scientific and technological changes occur. Educational skills and preparation are highly important and require to be evaluated for their efficiency while an effective use of symbols and patterns in teaching should be included in designing a training program [1].

The growing scientific and technological advancements and the shift from a teacher-centered to learner-centered education in higher education has raised a new responsibility for the teachers as well as the students to carefully choose the best teaching and learning method. Currently most universities around the world are trying to find teaching methods which could improve decision-making skills and dynamic learner-centered education [2]. It should be noted that in performing any educational program choosing an appropriate teaching method is one of the most important steps for achieving the planned goals, because more than anything else optimal learning is the result of efficient teaching [3]. In contemporary context, giving a lecture is the most widely used method which has its own advantages such as being economically cost effective as it can be used for teaching large groups of students [4].

Lecturing is one of the traditional teaching methods. Despite modern teaching and learning methods, lecturing remains a well-established practice. It should be mentioned that lecturing can lead to positive effects if it is based on good material and the lecturer is skilled enough [3]. Even today there are many scholars who believe that a well-organized lecture is one of the most effective teaching methods [5]. In one stage of education listening to a lecture seems inevitable because it is a good way of communicating the basic information to someone. In fact, in some situations, lecturing is the best teaching method. However, it lacks any attention to the critical thinking skill of the learner—which is an essential part of learning. According to previous studies, almost more than 80% of information gained by means of listening to a lecture is forgotten in eight weeks [4].

Education psychologists believe that an effective and lasting learning is possible only when the learners are actively involved in the learning process. In this regard, there has been a shift from traditional teaching methods to communicative and learner-centered learning. One of the modern teaching methods which is used in teaching medical sciences, architecture and the arts is storytelling. Storytelling or narration is one of the most convenient, economically cost effective and efficient teaching methods that can be used in different fields of study including mathematics, economics, medical and paramedical sciences and nursing. This method can be adopted by anyone. In storytelling, the narrator/storyteller gives the whole information to the audience in one sitting. As a result, the theme of the story is given an extra significance by the use of gestures, tone and pauses [6].

## II. STORYTELLING

Long before the modern sense of civilization, the ancient tribes and communities shared their customs and values through storytelling while they sat around the fire. The ancient tribes created their folklores and myths based on moral realities. These stories were about the origin of life and creation. They included speculations about creation and source of life and natural world. Through these stories, history itself was passed on from one generation to another. When the hunters came back

M. Yaghoubi is Professor of School of Mechanical Engineering, Shiraz University, Shiraz, Iran (e-mail: yaghoubi@shirazu.ac.ir).

J. Shaeri, PhD Student of Architecture, Faculty of Art and Architecture, Tarbiat Modares University, Tehran, Iran Iran (corresponding author to provide phone: +9809373056253; e-mail: Shaer.jalil@gmail.com).

home after a day of adventure and danger they would narrate the day's events to other members of the tribe. These adventures and heroic acts became in the course of time a part of the collective culture of people. Storytelling existed since the first oral narration of stories and is deeply rooted in the civilization's traditions all over the world. Throughout time, stories have been constantly told and refined so that they have evolved into more complex forms and have taken deeper and multifaceted meanings [7].

Stories contain a set of characters, relationships, values and forms of knowledge. Most people model their lives after the heroic tales of the heroes and legends. In the course of history, stories become part of the collective unconscious of the people and cultures. Stories or narratives are present everywhere and are always attractive [8]. Stories are powerful expressions of truth. Skilled storytellers incite spiritual and emotional reactions in their audience. Prior to the emergence of modern day entertainment mass media, stories were tools of public education [9].

A skilled storyteller was considered an important person in the society. In fact, folklores are among the most traditional form of education through which different cultures passed their values onto the future generations. Stories can be both in prose and poetry and are performed by a person for the audience [10]. Stories may be oral and combine hymns, songs, music and pictures. They may be borrowed from oral traditions, printed works or other media. One of the aims of storytelling is entertainment [11]. Narrative literature includes parables, legends, fairy tales, novels, short stories, anecdotes, allegories, essays, travelogues, biographies, plays and scripts. The culture and mentality of a society can be studied through the quantity and quality of its stories. Some of the elements of narrative are experience, conflict, event, narrator, point of view, climax, character or hero, setting, atmosphere, tone and pattern. Teachers and instructors all over the world have been trying to improve teaching methods and techniques.

Narratives have been increasing in different media [12]. This has led to a scholarly attention to the role of narratives in different disciplines. Storytelling or narration is a teaching strategy whereby stories are used as a tool for education [13]. Stories strengthen the sense of sympathy and group membership and teach empathy, i.e. learning not to pass judgments. Through stories, people come to reevaluate their own life and skills and learn to identify key themes in other texts too. Stories make the abstract ideas of theories more understandable through concretization [14]. Table 1, presents the different definitions of narrative and storytelling.

### III. THE PSYCHOLOGY OF STORYTELLING IN EDUCATION

One of the end results of any teaching method is the consolidation of subjects in the mind and improvement of creativity in the learner. Among the most salient features of stories one can mention their exciting nature. Human beings are prone to remember exciting events more easily than boring ones. The reason for this is the fact that during exciting experiences we have an increased secretion of adrenalin in the vessels. As a result, exciting stories can significantly promote the learning skills of students in all scientific and artistic fields [19]. Stories are attractive to all age groups because they excite emotions and can be used for presenting a wide range of complicated scientific issues. Storytelling is not limited by the constraints of age, topic or the level of education [16]. There are some factors which influence the narrative understanding of learners, including: memory, attention, structure and feedback, awareness and motivation. In a conventional lecture [20], the attention of the audience is not attracted as such so that in less than ten minutes the audience is not attracted at all. However, in storytelling the audience remains attentive and interested throughout the occasion.

Table 1. Different definitions of storytelling

	Storytelling	Summary
1	Storytelling is a strategy for meaningful teaching. It improves comprehension and helps the students to explore new ways of learning. Participation in learning enhances active learning of the students. There are more than 50 theories of learning among which these are seven specific learning styles: linguistic, logical, spatial, musical, kinesthetic, interpersonal and intrapersonal. Storytelling uses all of these styles [15].	Meaningful teaching which improves comprehension.
2	Storytelling is commonly used term which describes any use of stories. Any story represents a special type of thinking and reflection which arouses the reaction and feedback of the audience ([11].	Storytelling is a type of thinking.
3	There are many definitions of storytelling and narration among which the common denominator is this: a story is learning the shared values of human beings and storytelling is representation of events though words. Images and sounds are usually organized in a special way. A story can be called the creative representation of human condition [14].	Representation of incidents and events in words
4	A story is a personal account of one's experience which is narrated through the use of words in order to represent the event of that experience. Storytelling is research and education tool for university students and has a positive effect on the comprehension and personal experience of the students ([16].	Stories are representation of human experience.
5	Stories or narrative are based on human experience. Storytelling is a commonly practiced activity in people's daily lives. Despite this, storytelling is planned activity to achieve a goal [17]	
6	Storytelling is an ancient art which is shared by all cultures and is inherent in human psyche. Modern technologies can promote the use of stories in information transfer. However, we need to study the effect of each distinctive style of storytelling on the audience [18].	Storytelling has a cultural, physiological and psychological basis.

Table 2. Educating storytelling Style

		Features	Explanation
Teaching through storytelling	The stages of teaching through storytelling	1	<b>Making associations</b> There must be some relationships and associations between the time, space and characters of the stories with the cognitive features of the audience [12].
		2	<b>Creating excitement and suspense</b> This refers to the sense of suspense in the audience about what is going to happen next which is effectively in their emotional involvement with the story [9].
		3	<b>Solving the crisis of the experience</b> Sometimes a crisis may have a climax. Narration reminds the students of the experiences which contribute to the process of learning [21].
		4	<b>Describing the previous lessons</b> One needs to make connections between the present lessons and the previous ones so that the learning is facilitated [21].
		5	<b>Character</b> This relates to the development of the character which is expected to change the attitude of the audience in the end [21].
	The emotional structure of the story	1	<b>Personal story</b> This is related to the representation of specific events or critical moments which have intensified the coherency of the experience of the person [22].
		2	<b>Realistic stories</b> These are stories which are used as a tool for education (part of the syllabus) and can be used as a way giving a coherency to the materials. This can be used in different educational contexts [21].
		3	<b>Imaginary stories</b> These are non-realistic stories which are not based on real experience but can be interpreted in a way as to be related to the experience of the students [23].
		4	<b>Storytelling</b> In this case, the action itself is important because sometimes action and performance are more important than the content [10].
	The skills for teaching through storytelling	1	<b>Oral language</b> The words should be reflections of emotions and show action and emotion [24].
		2	<b>Facial expressions</b> The facial expression should be adjusted to the development of the each incident in the story [9].
		3	<b>Body language</b> This refers to the use of gestures by the narrator. For example, a special body gesture should be used while narrating a specific event [25].
		4	<b>Emotions</b> The diction as coordinated by the use of facial expressions, gestures and body language. Emotions and gestures can be highly important in some cases [26].
		5	<b>Unrelated details</b> The unrelated details refers to those elements of the story which do not contribute to the development of the main plot while helping the audience in mentally imagining the story. For example, to create a sense of wonder we use virtual reality to excite that emotion in the audience [26].
		6	<b>Walking while storytelling</b> A short pause while narrating a story allows the audience to review the story so far. The pace of walking can influence the emotional impact of the story. In teaching, walking can be joined by a sense of humor to be more effective [27].
	Suggestions for solving some challenges in storytelling	1	<b>Summarizing the information in the end</b> In some skillful storytelling, the end of the story shows the message of it in a clear way. If it is not the case, the storyteller is supposed to mention the main messages of the story for the audience [23].
		2	<b>Attracting the attention during the storytelling</b> While listening to a long and complicated story with multiple characters we might feel that we are lost in the details and cannot spot a clear message. Therefore, a story ought to be short and to the point [26].
		3	<b>Tailoring the story to the needs of the audience</b> The story should be adjusted to the audience in terms of their gender, age, etc. The current condition of the audience should be taken into account [28].
		4	<b>Using new stories</b> Adding new events to a previously recounted story may increase the interest of the audience [29].

#### IV. STORYTELLING IN TEACHING ARCHITECTURE

The birth of architecture goes back to the time when there came the possibility for sharing human experience for changing the natural environment. This birth coincided with the birth of language and writing. As a result of developments and scientific advancements in technology, engineering took its evolutionary course and underwent changes which occurred in the culture, society, politics and economics [30]. This has led to the

emergence of a multitude of teaching methods. The progression of the structure of a story makes the whole story and for that matter the memorization of the story by the students more convenient [31]. Given the cultural, natural and linguistic attractions of stories, they can be fruitfully integrated into teaching methods. Stories relate to the audience though the mechanism of empathy and sympathy [17]. Most architecture instructors at the

Table 3. Concepts, elements and examples for the implementation of storytelling teaching in architecture

<b>The elements of creating a story as applied to architecture</b>	<b>Event</b>	The events of the story must be related to architecture. For example, one can mention to the disastrous effects of destroying a building or even to the possible psychological and moral consequences of ignoring the principles of architecture.
	<b>The elements of creating a story as applied to architecture</b>	
	<b>Setting</b>	The setting of the story should raise questions in the students' minds about the progress of the story and its use in solving the challenges of architecture.
	<b>POV</b>	The point of view in telling a story about architecture could adopt the perspective of a designer, contractor and the users of product. POV can change during the course of narration.
	<b>Hero (protagonist) of the story</b>	The hero of the story should abide the ethical principles with regard to environment.
	<b>Climax</b>	The climax of the story is related to the causal connection between the events.
<b>The manifestation of narrative elements in architecture</b>	<b>Atmosphere and ambiance</b>	The creation of atmosphere and ambiance in an architecture story is more important than other types of story.
	<b>Association and reconstruction</b>	The process of thought and construction
	<b>The experience of narrative</b>	The experience of architecture
	<b>The personal view of the narrator and the audience</b>	The personal view of the architect and the users of the product
	<b>Narrative time</b>	The time for construction and the employment of product
	<b>Narrator</b>	Architect
<b>Examples for teaching architecture through narration</b>	<b>Narrative</b>	The user of the product
	<b>Realistic story</b>	Telling a story about real people who had first-hand experience in projects. These stories can be told by the teachers and successful architect.
	<b>Story of successful people</b>	Narrating the life and achievements of successful architects as to give a model for the students.
	<b>Short story</b>	Creating an architecture story according to the aim of the course. To save time one can use short stories.
	<b>Novel</b>	Assigning a task for designing an the product based on a story. The story can be used as plan for creating a space through certain corrections to achieve the final design.

universities unconsciously use storytelling and narration in their teaching. This leads to a sort of recounting personal memories of completing an architecture project. However, this is not as effective as it is expected to be because of the lack any conscious organization and planning of the material. In implementing this method, one can use all forms of narrative literature such as tales, short stories, travelogues, biographies and novels.

Prior to the implementation of narration in teaching architecture, one needs to pay attention to the formal and structural constitution of story elements and also organize the narration according to the principles of the field of architecture itself. Table 3, shows the necessary concepts and elements of storytelling as applied to architecture and teaching engineering.

## V. SUPPLEMENTARY SOURCES IN STORYTELLING

### A. Textbooks:

In addition to employing the modern method of storytelling in teaching a subject one can use supplementary sources which have a narrative quality [32]. Along with the use of storytelling in teaching

architecture, one can use books about narrative in architecture and construction as an effective educational tool. The books about the role of narrative in architecture should be organized in a way as to emphasize architecture in order to enable the students to come up with new ways of solving problems and puzzles in the real experience of architecture. To put it differently, these books should have a pattern of problem solving in clear language. Table 5, shows the positive effect of narrative books on teaching architecture.

### B. Digital storytelling:

digital storytelling refers to the modern technology of telling stories through digital tools as a way of entertainment. Digital narratives include web-based stories, conversational stories, and hyper real and computer games [32]. Sometimes, the term digital storytelling refers to any form of film narratives. In general, this form of storytelling can be used as a powerful tool in presenting educational material [33]. There is various software for the production of digital stories (Table 4). Given the fact that multimedia tools are

Table 4. Software for digital storytelling

<b>software</b>	<b>Suitable system</b>
Microsoft® Photo Story 3	Windows
Windows® Movie Maker 2.1	Windows
Apple iMovie™	Mac
Adobe® Premiere®	Mac and Windows
PowerPoint®	Mac and Windows

used by a high number people, it is clear that these tools will have a great influence in promoting education in the society.

Digital storytelling is a powerful way for teaching art in the age of digital technologies. Modern technologies have transformed the societies into a virtual space in which digital facilities and equipment play a pivotal role. As a result, the teachers and university instructors have come to recognize the importance of these tools and have tries to use computers and search e architect in their teaching methods. Digital storytelling has a great

potential for teaching the arts. In this digital age, the students use different kinds of DVDs, mobile phones, iPods, and laptops. In the same vein, the teachers use PowerPoint presentations in their classes. Moreover, the students use graphic and designing software [34]. Table 5, shows the advantages and requirements of using digital storytelling. In Table 6, shows the characteristics of storytelling method in architecture.

Table 5. Educational aids necessary in Narrative Style and Benefits and Tip

	Tools	Features	Factors	Explanation
Supplementary material in storytelling	a) Books	Advantages	Discovering the problems	Using narrative books which are about problem solving in architecture [35].
			Guessing	Reading books with academic format of narration makes the comprehension of students more concrete and therefore enables them to find solutions for real problems [36].
			Experience	Using books which represent the experience of people in narrative form [37].
	b) Digital storytelling	Advantages of using digital storytelling	Variable	One salient difference between this method and other ones relates to the fact that the former is more innovative and less boring [38].
			The changes in one's experience	Another advantage of this method is that it is more personal and can be adjusted to different systems [38].
			The potential for better understanding	Using this method makes comprehension easier and fast. The method can attract and interest the audience more strongly [39].
			Real conditions	In this method, reality is understood more effectively. The method allows the student to imagine him/herself in a real situation and find solutions for the problems.
			Interaction	Teacher-student interaction is more effective in this method. The method enables the students to find their areas of interest [40].
			Active learning	The method involves the students in the process of learning and makes learning dynamic.
	b) Digital storytelling	Some factors in teaching through storytelling	POV	What is the focal point of the story and what is the authorial point of view? [41]
			A romantic question	It is a key question which is expected to keep the audience interested until the end of the story [42].
			Emotional content	These are important issues which are presented to the audience through the narration of emotional stories [43].
			The use of voice	The voice of the narrator is highly important in digital storytelling. The narration of the person adds truth value and emotional effect to the story which is expected to be coordinated with the use of pictures and music [43].
			The power of music	The background music should be chosen carefully and should not be incongruous with the theme of the story. Music should express emotions and feelings. In this case, music without lyrics is better [41].
			Image and film	One can include videos about success stories, changes, etc. Pictures and films can be highly influential in expressing ideal emotions and feelings to emphasize the theme of the story [44].
	b) Digital storytelling	Some factors in teaching through storytelling	Economy	The use of the content as proportionate to the needs of the teacher and student [45].
			Walking	Walking and taking slow steps is highly effective in expressing solution while taking fast steps shows tension and excitement [41].
			Rhythm of the story	This promotes the interest of the audience and makes the story more interesting. Examples include, pause to emphasize the theme [39].

Table 6. Characteristics of storytelling method in architecture

	<b>Factors</b>	<b>Explanation</b>		<b>Factors</b>	<b>Explanation</b>
1	<b>Innovation in teaching</b>	It is a modern method in which digital storytelling can be used to increase the students' interest.	19	<b>Discovering the problems by the students</b>	Given the narrative nature of the teaching, the students can better understand the real problems.
2	<b>Considering the level of learners</b>	In this method, narrative education should be designed for special academic group.	20	<b>Experience</b>	Given the narrative structure of teaching, the students experience the real issues.
3	<b>Teacher-student interaction</b>	The teacher-student interaction is mutual.	21	<b>Students' comprehension</b>	The students can easily comprehend the material.
4	<b>Using the digital facilities</b>	In this method, using digital technologies can be a highly valuable supplementary material.	22	<b>Real conditions</b>	The issues are closely related to real conditions.
5	<b>The need for expertise</b>	The teacher should have a good command of narrative and narration techniques.	23	<b>Active learning</b>	The students are active and participate in discussions.
6	<b>Plans for solving the problems</b>	The teacher should base the teaching on a clear syllabus and selected stories.	24	<b>Curiosity and creativity</b>	The students remain curious during the narration to find an answer.
7	<b>Costs</b>	The costs may increase in accordance to the inclusion of digital material.	25	<b>Interest and motivation</b>	It can be used for long amounts of time and still be interesting.
8	<b>Time</b>	This method needs longer time in comparison to lecturing.	26	<b>Group discussion</b>	It can be used in group discussions.
9	<b>Time for longer performances</b>	This is appropriate for long performances.	27	<b>Learners' confidence</b>	It improves the students' confidence.
10	<b>Time for shorter performances</b>	One may not be able to present a story in a short amount of time.	28	<b>Clarity of complex issues</b>	This method is highly useful in explaining complex issues.
11	<b>Teaching the skills</b>	This is appropriate for teaching skills.	29	<b>Finding new learning habits</b>	The students learn new ways of problem-solving in this method.
12	<b>Speaking skills</b>	This method requires verbal skills for the presentation of stories.	30	<b>Collective unconscious</b>	It increases collective unconscious.
13	<b>Teacher's skills</b>	It requires waking and movement and uses voice and rhythm in teaching.	31	<b>Concentration</b>	In comparison to lecturing, it increases the concentration of the students.
14	<b>Teaching for large groups</b>	It can hardly be applied to large groups.	32	<b>Self-evaluation</b>	It increases the scores of self-evaluation.
15	<b>Teaching for small groups</b>	It is appropriate.	33	<b>Promoting learners' skills</b>	The skills of the students are improved more easily.
16	<b>Social control</b>	Social control is easy in the class.	34	<b>Identifying key points</b>	The key points are indirectly mentioned and then summarized at the end of the class.
17	<b>Evaluation based on the learning of the students</b>	The students are evaluated in the end of the session.	35	<b>Students' interest</b>	It increases the interest of the students
18	<b>Considering the emotions of the students</b>	Paying attention to the emotions of the students and including them in the process of teaching can be very effective.	36	<b>Students' motivation</b>	It promotes the students' motivation about discussion.

## VI. CONCLUSION

The storytelling as a pedagogical tool can enhance the clarification of academic topics, considering, the successful experience of using the method in other academic disciplines, the purpose of this study was to

examine the storytelling method in engineering education. The results showed storytelling has many good features in teaching. The recommendations for using the method in engineering are as below

Cooperation between a teacher and a professional narrative-maker is very helpful. In performing the

method of storytelling, one can use different materials including narrative books which are related to architecture. In fact, using digital technologies contributes to the effectiveness of the method of storytelling. However the method has some limitation of use in terms of time or lack of using scientific language.

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