Teachers' Participation in Designing an Educational Complex: Applying "Role" Technique in Iran

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Abstract

Users' participation in designing process is needed to plan a social sustainable school. Despite the new wave that has arisen in the context of participatory design, users' participation is probably disappointing in Iran. In this study, for designing an educational complex, the" ROLE"(Relating Objectives for Learning to Education) method is applied to a group of teachers as main participants. Workshop sessions were held by means of teachers' participation in selecting a planning organization layout and more specific physical settings. Interestingly the results was quiet different with the typical present schools in Iran, and this is of great importance. Findings suggest that, enclosed yard is teachers' most favourable organization. Other extracted results identify teachers' preferred physical settings, separately in elementary school and high school. Selected spaces mostly include setting which is not common in Iranian schools, as high quality outdoor spaces, spaces for providing students more interaction and spaces which let more experimental projects.

Keywords: School Design; Participatory Design; Teachers; Role

Introduction

Indeed, there is a strong relationship between the type of environment and teaching methods; however, the priority of anyone of them over another is not established. Yet Clayton (2012) mentioned that despite recent changes in teaching methods, most of the classroom designs remain same as before.The term "participation" in design identifies different explanations which mostly include factors as interaction in the process of design (Davidoff, 1985; San off, 2000; Islami & Kamelnia, 2014). As school is assumed as the secondary resort in society, and democracy is the dominant part of modern architecture, this space is of quite importance. Nowadays, educational complexes are designed by unqualified people improperly. Although educational and architectural leaders have got a critical role in school design and building, they have got no direct communication with educational spaces, especially classes. In this regard, if users can take part in this critical process, there will be a great betterment in educational design. At this point schools in Iran have little attention about users' participation in designing processes. Teachers have their own special place between the users.

There are not many successful cases in participatory design between 1980 and 2000. But in recent years, designers' reconsideration in this category led to remarkable theoretical and practical cases (Islami & Kamelnia, 2014). Developing countries are more considerable in this regard, as theorists state that lots of participatory systems found their place. On the other hand developed countries advanced organizations and abundant rules, makes it hard for designers to consider users the chief group in the decision making process (Frampton, 2001; Islami & Kamelnia, 2014).

San off (2001) stated that "Building a responsive school requires that those who actually dwell in the space be part of the planning process-be they students, faculty or community members" (p. 2). U.S. Department of Education (2000) claimed, "Not only do people have the right to participate in making the decisions that will affect them, but their participation will improve the quality of the decision-making process "(p. 7). Users can take part in different steps of this process as pre-design and while design. They can also participate in various levels to build or re-build the educational building. This professional manner is quite beneficial for both teachers and learners. It can help them nourish their knowledge and improve their motivation more than before. It's quite helpful for all groups of people containing teachers and students as they are in close contact with schools, to participate in this critical process.One purpose of this study was to identify special physical settings in a school building that are of great importance for teachers as a group of users who are in direct contact with schools.

Teachers' Participation in School Design

Despite the necessity of all consumers' participation, teachers' attendance is of great importance. Since there is a mutual relationship between classroom design and teaching methods, asking for teachers' ideas in school construction is a must-do. Tyree (1969) argues that "if we accept the tenet that in a democracy, those who are affected by decisions should participate in making decisions, the demands of the professional staff form a significant part in the decision making process in the School system" (p. 35).

Teacher participation in decision making has become a controlling topic in current educational improvement (Conley, 1991; Johnson, 1990; Smylie, 1992). Ndiku, Simiyu, and Achoka (2009) found that teachers request for more participation in decision-making than they are actually engaged. Smylie (1992) suggests that teachers' enthusiasm for participation depends on their relationships with their principals. Conley (1991) also stated that, teachers' expectations and desires vary across decision domains. There is not much acceptable teacher participation in fields like school design and planning in Iranian schools as well as school curriculum. In a research done in Iran (2001), it is shown that teacher participation in school curriculum is lower than acceptable level in all three phases (planning, implementation and assessment). Teachers' participation in Iran educational system is poor and this has to improve by spending more money and facilities and letting school administrators feel freer in decision making (Kazempoor, Hagh parasite, & Hedayati, 2010; Fathi, 2009).

Schools in Iran

Nowadays schools in Iran are totally different from the ones in the past, both functionally and structurally. The old circular organization in classrooms led to more student-student and teacher-student interaction rather than the modern format. Besides, there were separate open spaces as a balcony and courtyard in all schools. (Irvani, 2010) The methodology and structural formation of educational buildings have changed vastly, since there has been a great number of educational immigration among students. This change hasn't brought much useful point to school society except the eminence of official buildings (Figure1). Moreover, in the modern classroom, teachers have become the center of the classroom and students would seat in a linear format (Figure2). In spite of the great effort made for these architectural changes, there has been no considerable wisdom to induce the need for innovative learning environments.

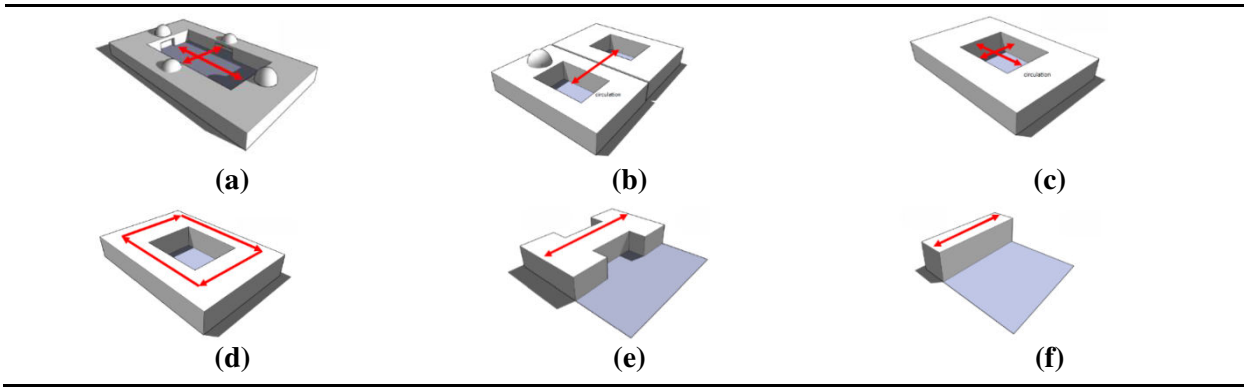


Figure 1:The process of Iranian school formation (a):Schools within mosques with central courtyard, (b): Schools next to the mosques, (c): central courtyard as the central heart, (d, e, f): Classrooms and corridors as the central heart, (Irvani, 2010)

(a) (b)

Figure 2: Traditional and new classrooms comparison (a): the form of a loop, which supported interaction, (b): linear attitude

Participation in Iranian schools (Case study- Bam)

As consumers' participation is not that common in Iran; therefore, the first experience occurred in Bam city, in 2008.[1]Child Friendly City ideas framed the renovation program of this city. During this experience, the design was done along with children's participation in the process. In the first phase of planning, the focus was on community participation, using children as main planners of their own environments. (UNICEF, 2005; A. Rismanchian & O. Rismanchian, 2007). Designers used the findings of the workshops to develop CFC urban planning and model some guidelines for Iran (UNICEF, 2005) (Figure 3).using children's participation as users led to designing a social sustainable community. This project was a good start for participatory design process in Iran. Continuing this procedure would allow the participation of more people shaping their community, so it can be looked at as a model for similar participative processes in Iran including our project.

Figure 3. BamCommunity center (UNICEF, 2009)

Methodology

Sanoff (2011) and Whyte (1991) claim that social scientists are searching about whether to employ a collective manner of problem solving to advance society and manage the by-effects through controlling the amount of knowledge participants inject to the community. Whyte (1991) believes that this type of research, which is called participatory action research (PAR), reinforced participation a lot, since users were called for help, from the very beginning step to the end. Therefore, we chose participatory action research as our research framework, to involve users in the design process more effectively. Getting more accurate, "*ROLE*" technique, a method which was introduced by San off(2001) framed the research. The questionnaire applied by Sanoff in school renovation project (1994) made the initial phrases; in addition, the researchers and an educational psychologist developed a second set of phrases. The final questionnaire was a combination of these two.

ROLE technique

The complexity of participatory process makes architects professional assistance critical, which can be through choosing a facilitative method. Selecting ROLE approach as the participation methodology, directed the process specifically for identifying the project goals to appropriate physical settings of the places. The possibility of completing the participation process level by level eased the way and made it a conducted procedure. Making a relationship between learning objectives and educational ones (ROLE) is considered as a way to facilitate the dialogue between teachers, students, parents, administrators, and designers in the process of creating a new school or renovating an existing one (San off, 2001).

This is a guided method which provides several objectives for teachers, so that while learning methods are imposed to teachers by environmental regulations in most schools, they will be more aware of different environmental settings. Before specifying the objectives in theoretical phase, the main goals need to be determined. This must be done based on basic principles and criteria; that is, strategic planning. Goals may be less explicit than objectives; thus, the more objectives, there will be, the more probably a

Goal will be met. Similarly, in the next step, we select four learning methods to gain the specific objectives. The final step is selecting the desired physical settings, considering the selected learning methods (Figure 4).

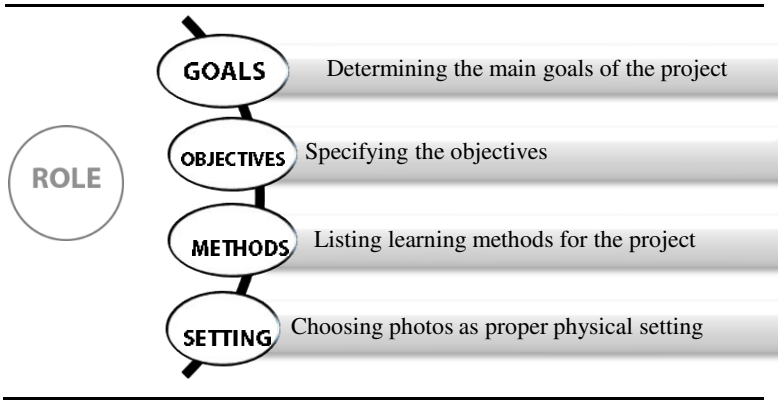


Figure 4. Role technique model

ROLE experience in Iran

In order to implement the role method properly in Iran, first we obtained the educational objectives and learning methods that program makers applied before. These methods and objectives have been edited for Iranian schools in consultation sessions with educational psychologists (Table 1 and 2). Next, we chose some photos to express the environmental setting. The physical settings were selected from both indoor and outdoor spaces, including routine spaces in school designs and also the settings that were not common.

Table 1: Learning objective list, (sanoff, 2002)

- Developing Motor Skills -Developing Mental Awareness - Learning By Example - Developing Memory Skills -Developing Physical Health - Developing Self-Actualization - Encouraging A Sense Of Trust - Constructive Use Of Fantasy - Developing Perceptual Acuity - Involving Parents In The Program - Developing Social Awareness -Stimulating Imagination - Learning By Discrimination - Developing Communication Skills - Achieving Intra-Sensor Integration	- Developing Language Fluency -Developing Listening Skills - Encouraging A Sense Of Community Identity -Encouraging Research Skills - Reinforcing Individual Effectiveness - Developing Cognitive Skills - Developing Motivation For Learning - Encouraging Self-Expression - Reinforcing Positive Self-Image - Developing A Sense Of Confidence - Developing Persistence Towards A Goal - Developing Concentration - Developing Self-Regulation - Developing A Sense Of Reality	- Developing Concept Formation - Channelling Biological Drives Constructively - Encouraging Resourcefulness - Developing Initiative And Spontaneity - Developing Introspective Skills - Developing Social Competence - Developing Tolerance Of Differences - Developing A Sense Of Responsibility - Learning By Conditioning - Encouraging Group Interaction - Learning Through Execution - Stimulating Curiosity

Table 2: Learning methods list, (sanoff, 2002)

- Competition - Parent-Teacher-Student Collaboration -Principals Participation -Art Classes -Music Sessions -Panel Discussions - Group Problem Solving - Student Participation - Self Presentation - Field Trips - Small Group Discussion - Voucher System - Direct Experience	- Role Playing - Natured Classes - Parent Participation - Lecture/Demonstration - Graded Grouping -Learning Games -Reading Workshops - Remedial Workshops - Self-Directed Activities - Independent Study - Student Testing And Evaluation - Open Classroom - Programmed Instruction	- Individualized Instruction - Paraprofessionals - Community Resources - Community Involvement - Peer Counselling - Contract Teaching - Team Teaching - Audio Visual Aids -Outdoor Experiences -Physical Activities Aids -Conference Room -Modern Equipment

As the research was done about all types of educational complexes, 80 elementary and high school teachers were chosen out of both private and public schools to take part in the workshops. The number of respondents from girls' and boys' schools were equal, to achieve higher accuracy (Figure 5). Due to the fact that an educational complex contains both primary and high schools, the teachers' responses were analyzed separately for each section, so that necessary areas for each specific section would be determined. In the workshop sessions, we gave teachers three lists, including educational objectives, learning methods and physical settings. After providing teachers with adequate information about each listing, they were asked to discuss different alternatives in smaller groups. Teachers were asked to make their decisions based on the discussions and their own ideas.

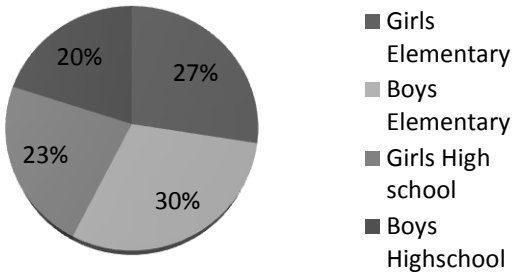


Figure 5: Respondents Distribution

Some of the planning organizations were offered in the workshops; moreover, the cons and pros were mentioned as well. (Figure 6) Each teacher was asked to choose the best one according to his/her specific needs and demands for educational betterment.

At the end of the session, each teacher answered his/her own questionnaire.

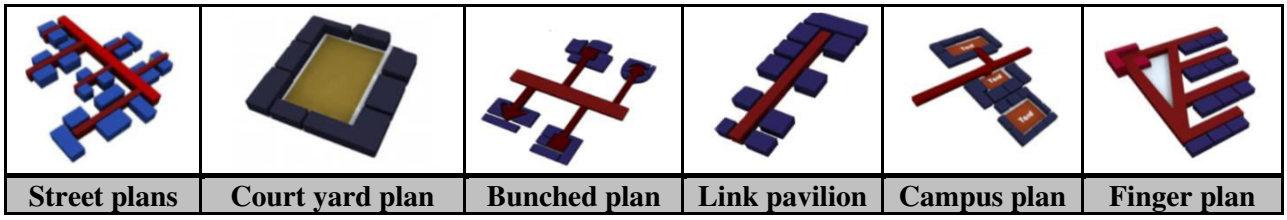


Figure 6: Planning organization settings list

Results

Organization setting result

Central courtyard planning fit Iranian schools functionally; thus, it was the most elected space at the end. Applying courtyard as the school space helps us save more energy, since it is quite warm and dry climate.

Besides, there was an introverted planning in these spaces (Table 3). According to Irvani (2010) the regular layout of Ivan and the chamber in this pattern was ordered with unity and psychology and it resembled a mosque visually. In traditional Iranian school's semi-spaces (Ivan) had their own special place and use, it was a place for students gathering and informal meetings (Figure 7). Peer discussion and group discussion faded in Qajar period, considering the architectural change, circular to linear. Accordingly, Ivans were disappeared as well, as discussions occurred in these spaces. Central courtyards can be applied in today's schools as well, because it is assumed a semi open space and it possesses a warm and dry weather and an introverted design and layout.

Figure 7: Ivan (terraces) in traditional Iranian schools (Andalib, Fakhrabadi, &Mortazav, 2013)

Table 3: Planning organization selection

		Organization					
		Court yard plan	Street plans	Bunched plan	Link pavilion	Campus plan	Finger plan
Girls' School	Count	20	0	7	0	6	7
	Percentage	50%	0.0%	17.5%	0.0%	15%	17.5%
Boys' School	Count	11	5	6	4	0	14
	Percentage	27.5%	12.5%	15. %	10%	0.0%	35%
Total	Count	31	5	13	4	6	21
	Percentage	38.8%	6.3%	16.3%	5%	7.5%	26.3%

As the results show; teachers in girls' school, mostly prefer introverted organization settings, which include courtyard and campus plan. This can represent the Iranian culture and teachers' tendency to provide more privacy for the spaces which are utilized by girls. Another compelling reason for this result can be the law of Hejab, which makes Iranian girls, wear a covered uniform and scarf in schools. An introverted planning organization which brings more privacy, provide girls more freedom in their clothing.After analyzing the workshop's results and summarizing teachers' comments, the designing phase began based on selected organization planning. Next details were added to the plan considering both outdoor and indoor selected physical settings(Figure 8).

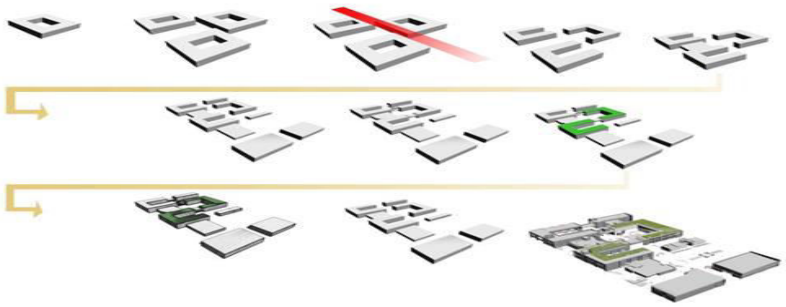


Figure8: Improving central courtyard organization for the final design

Physical setting results

The researchers investigated the results of questionnaires in three different phases with two separate sections. The first phase included checking learning objectives and learning methods and in the second one, the selected physical settings were checked. This process was done in both elementary and high schools in two separate sections in order to have results that are more accurate. At the end of each phase, we replaced the typical school physical settings with teachers' selected settings, which in most cases the setting was uncommon in Iranian schools and had to be added.

Performing results in elementary school

As the first step, ten most voted solutions were listed in both educational objectives and learning methods statement groups. These objectives and methods can help the designers to decide easier besides leading to a more accurate physical setting (Table 4). As the results show, the objectives are mostly about making young students familiar with the community and making them confident enough in their first experiences of getting involved with social life. Apart from community introduction methods, there is also a need for students to have their own personal space for private times. Learning by experiencing is also one of the solutions for deep-learning in the teacher's opinion.

Table 4: Selected physical settings in elementary schools

	AGE	STEP	SOLUTION
ELEMENTARY SCHOOLS	7-13	Educational objectives	Encouraging a sense of community identity
			Developing a sense of confidence
			Developing initiative and spontaneity
			Developing tolerance of differences
			Developing a sense of responsibility
			Encouraging a sense of trust
			Learning by example
			Encouraging group interaction
			Learning through execution
			Stimulating curiosity and imagination
		Learning methods	Small group discussion
			Direct experience
			Parent participation
			Independent study
			Open classroom
			Community resources
			Audio visual aids
			Group problem solving
			Student participation
			Self-presentation

Checking the six most voted physical settings for elementary schools as the second step, we found features that support group activities as well as places for having more privacy (Table 5).Classrooms with round table furniture which can provide a student centered environment were more voted than disciplined classrooms with chairs facing the teacher. There was also an interest for outdoor environments for both learning and playing. Every single selected space was studied thoroughly as it is listed below. We replaced traditional spaces in typical Iranian school with the physical settings that were selected by teachers. Although all of these settings are the most voted ones in both schools, there are some differences in the percentage ratio. Table 6 represents the percentage of the selected spaces in girls' and boys' school separately.

Table 5: Selected physical settings in elementary schools, a: (Robinson, 2005), b: (fammedhh, 2015), c: (Macrae-Gibson Architects, 2005),d: (Sohm, 2006), e: (VCBO Architecture, 2005),(f) : (Russell & Yelland Architects, 2007)

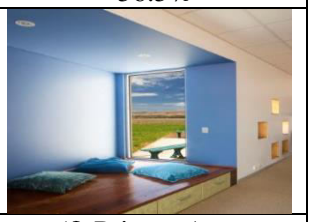
Selected photo			
Quality	(a) Multipurpose Room	(b) Bicycle Path	(c) Playground
Count	23	24	26
Percentage	50%	52.2%	56.5%
Selected photo			
Quality	(d) Grouped Furnished Classes	(e) Reading Areas	(f) Private Areas
Count	29	25	24
Percentage	63%	54.3%	52.2%

Table 6: Ratio of each setting in girls' and boys' school

Physical Settings						
Multipurpose Room	Bicycle Path	Play Ground	Grouped Furnished Class	Reading Areas	Private Areas	
Girls' School	43.5%	77.3%	57.5%	51.7%	40.0%	37.5%
Boys' school	56.5%	29.2%	42.3%	48.3%	60.0%	62.5%

Multipurpose room

Dudek (2007) stated that, group gathering spaces that are flexible and allow for many different types of configurations are important in schools, and the size and proportions of these rooms need to accommodate furnishings that can be easily adjusted on a day-to-day, if not a function by-function basis. Multipurpose rooms as uncommon spaces in Iranian schools can be applied for conferences, exams, plays, panel discussion classes and etc. In existing schools, these actions usually take place in praying room or bigger classes if available (Figure 9). Lack of a place like the one described above, is confirmed by teachers. This photo also shows a group discussion in the form of a loop. As mentioned before, although class rooms had the form of a loop in Iran to make better interactions possible, in recent years this arrangement changed to teacher center setting. The results displayed that teachers found this setting more effective for discussions. The percentage of this selection was approximately the same in girls' and boys' school with a 13% difference (Table 6).

Figure 9: Praying rooms as multi-functional rooms (Abnieh Tarrahan Alborz, 2008)

Grouped furnished classes

The typical setting of an elementary classroom in Iran is students sitting in rows facing the teacher (Figure 10). In some rare cases, teachers change the classroom setting for special purposes. In order to respond to the various needs of pupils, one would not find students all doing the same thing, at the same time. We would not expect to see students sitting in neat rows of desks, facing teacher lecturing, or reading (Clayton, 2012). Teachers' tendency to have around furnished classroom is somehow shown in the multipurpose class selection, confirmed in this setting. This also proves that elementary teachers prefer a classroom, which makes self-directed activities possible. In the final design, we used grouped furnished classrooms as teachers selected (Figure 11). The percentage of this selection was approximately the same in girls' and boys' school with a 13% difference (Table 6).

Figure 10: Typical arrangement of elementary classrooms (Abnieh Tarrahan Alborz,2008)

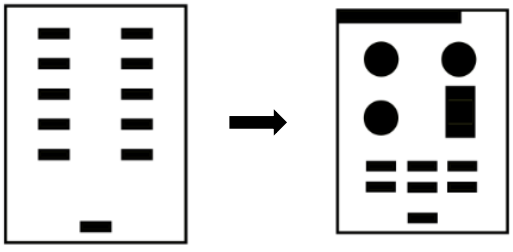


Figure 11: Changing classroom organization with teachers' participation

Playgrounds and bicycle path

Outdoor spaces can contribute to children's healthy development and learning. The capacity of the outdoors has been increasingly limited by the changes in society to contribute to the educational experience of children (Dudek, 2007). In traditional Iranian schools, there were socio-cultural factors as well as physical ones for the construction of courtyards and finding a proper place for the informal loops of students (Irvani, 2010). In spite of that, in the recent years courtyard is valued the least as it is thought that learning happens only in classrooms. In Iranian Private Schools, courtyards are mostly too small per student. On the other hand, public schools have bigger yards, but of poor quality (Figure12). According to the teachers, open spaces and playgrounds have been considered more important; especially in elementary schools (Table 5).Bicycle path is also a kind of outdoor space which helps any community be healthy and joyful. Sports and exercises have not taken seriously enough in our schools especially for girls. In Figure 13 We can see a typical school yard diagram and the designed school yard, as teachers desired. It consists of high quality playground and sitting areas for elementary school and a bicycle path for all school utilization.

Table 6 shows that the bicycle path selection rate is higher in girls' school with a considerable difference from the boys. Riding a bicycle in Iran is an outlaw for women and uncommon for young girls. Providing a bicycle path in girls' school gives them the opportunity to freely ride in open spaces.

Figure 12: Poor quality of typical school courtyard in Iran (Abnieh Tarrahan Alborz,2008)

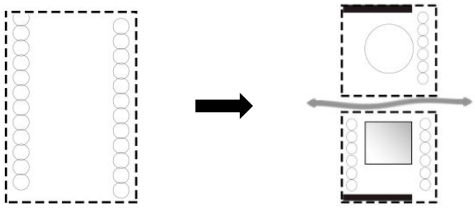


Figure 13: Replacing typical courtyard with playground and bicycle path and seating areas

Private areas and reading spaces

The most popular models for recent Iranian schools are "classroom-based" model and "cells and bells" model which leads to maximize control over students. This leaves no private space for students to spend time on their own (Figure 14). The results show that elementary school teachers want space that is more private for students, both in their classrooms and corridors dedicated to reading areas or self-directed activities. This can lead to developing a sense of confidence which was one of the teacher's objectives. Corridors and lobbies of the designed elementary school are equipped with private reading areas in both indoor and outdoor (Figure 15). As Table 6 reveals, the percentage of both reading areas and private areas in boys' school is approximately 20% and 25% higher than girls' school. As the results show, teachers prefer spaces that are more private for boys.

Figure 14: Typical elementary school corridor (AbniehTarrahan Alborz,2008)

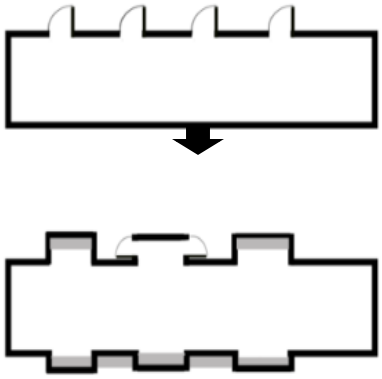


Figure 15: Typical elementary school corridor and corridors designed with teacher's participation

Performing results in high schools

Besides paying attention to social skills, high school teachers mostly concentrate on motivating students and encouraging them for persisting toward their goals (Table 7). The photos selected by high school teachers included more serious arrangements than other ones. The need for places supporting practical experiments and workshops like laboratories has shown in the photo selection results. There was only one photo selected by both groups, which is the bicycle path; this setting can be helpful for connecting schools together, since we need it in both schools (Table 8). Table 9 shows the result of selected spaces in girls' and boys' school separately.

Table 7: Selected phrases in high schools

	AGE	STEP	SOLUTION
HIGH SCHOOLS	13-19	Educational objectives	Developing language fluency
			Developing motivation for learning
			Reinforcing positive self-image
			Developing persistence towards a goal
			Developing concentration
			Developing tolerance of differences
			Learning by example
			Encouraging group interaction
			Learning through execution
			Encouraging research skills
		Learning methods	Student participation
			Self-presentation
			Field trips
			Direct experience
			Lecture/demonstration
			Audio visual aids
			Community resources
			Remedial workshops
			Self-directed activities
			Independent study

Table 8: Selected physical settings in high schools, a : (D.L. Adams Associates,2011), b : (Smith,2007), c: (Robinson,2005), d: (SHW Group,2008), e: (Chartier-Dalix architects,2011),f: (fammedhh,2015)

Selected photo			
Quality	(a) Conference room	(b) Laboratory	(c) Computer Lab
Count	22	23	21
Percentage	64.7%	67.6%	61.8%
Selected photo			
Quality	(d) Gymnasium	(e) Gathering Traces	(f) Bicycle Path
Count	22	25	23
Percentage	64.7%	73.5%	67.6%

Table 9: Ratio of each setting in girls' and boys' school

	Physical Settings					
	Conference Room	Laboratory	Computer Lab	Gymnasium	Gathering Terrace	Bicycle path
Girls' School	54.5%	52.2%	42.9%	54.5%	60%	60.9%
Boys' school	45.5%	47.8%	57.1%	45.5%	40%	39.1%

Conference Rooms

As shown in Table 8 and 9 teachers selected this setting with not a much different ratio in girls' and boys' school. Developing concentration and encouraging research skills as main objectives, along with self-presentation, lecture/demonstration, and audio visual aids as learning methods are chosen by high school teachers. They explain conference room as one of the most crucial places for a high school. Conference rooms are mostly missing in Iranian high schools and big conferences have to take place in prayer rooms if available. Some educational complexes have an amphitheater which is mostly used for meetings not student conferences (Figure 16). Results show that teachers prefer a rounded organization for conference rooms. Changing in the furniture organization can make this setting possible (Figure 17).

Figure 16: Amphitheater in some schools (Abnieh Tarrahan Alborz, 2008)

Science Laboratories

Laboratories facilitate chosen learning methods as self-directed activities and direct experience which leads to selected objectives as learning through execution, learning by example, encouraging research skills and encouraging group interaction. As shown in Table 8 from the viewpoint of high school teachers laboratories are also one of the important spaces, both in girl' and boys' schools (Table 9). This is also confirmed by UNICEFs CFS (ChildrenFriendlySchool) manual (2009). In Iranian school laboratory is mostly one unit location which is used for all kinds of science projects (physics/biology/chemistry) (Figure18). It is necessary for high schools to consider separate laboratories for these courses, in improved quality (Figure 19).

Figure 17: Typical and conference-room designed with teachers'

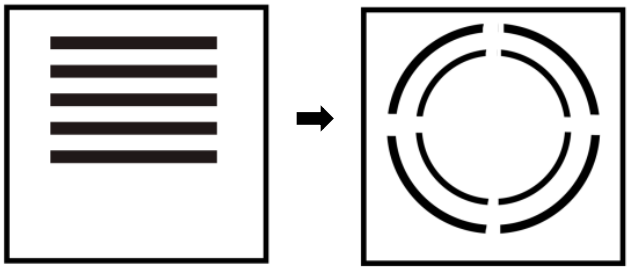


Figure 18: High school small science laboratory (Abnieh Tarrahan Alborz,2008)

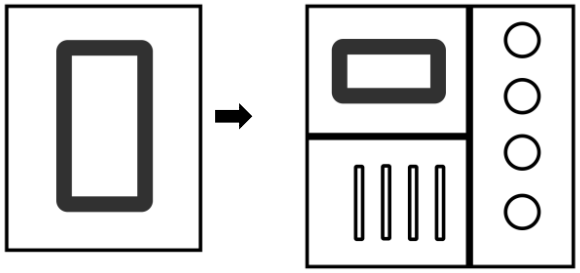


Figure 19: Replacing one laboratory with three separate laboratories

Computer Laboratories

According to UNICEF manual for CFS (2009)," an information technology center should be equipped with computers, internet connection, and any other facility that would allow students and the community to benefit from World Wide Web"(p. 9). Due to technological advances, the computer lab is become as one of the essential spaces in Iranian schools, especially high schools (Figure20). According to the teachers, working with computers helps high school students achieving their objectives like developing motivation for learning and encouraging research skills. It would be much preferable if school administrative improves the quality of these laboratories and plan separate spaces for different activities (Figure 21). The percentage of this selection is approximately the same in girls' and boys' school with a 14% difference (Table 9).

Figure 20: Typical high school computer labs (AbniehTarrahan Alborz,2008)

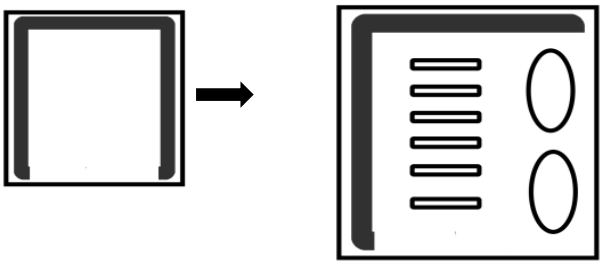


Figure 21: Typical high school computer labs and laboratories designed with teachers' participation

Gymnasiums

As mentioned in Table 8 and 9, paying attention to students' health programs is of much importance in both elementary and high schools; this was one of the teachers' desires in the results. Iranian schools, mostly have no gymnasium. Bigger public schools use the courtyard instead, which is useless in winter, and small schools sometimes take students to a gymnasium outside of the school or use their small courtyard. Some educational complexes have a gymnasium mostly in poor qualities that is usually applied by many other schools as well (figure 22). Designed gymnasium includes separate spaces for different supporting activities, as showers, ward robs and teacher's office (figure 23)

Figure 22: High school gymnasium in poor quality (Abnieh Tarrahan Alborz, 2008)

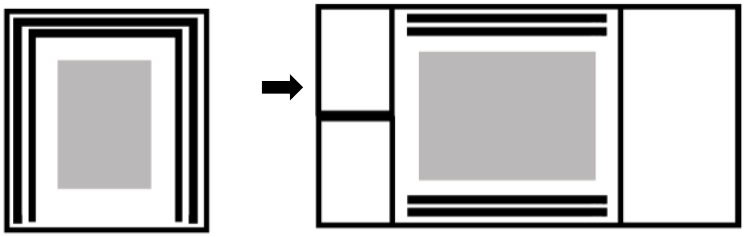


Figure 23: Improving high school gymnasiums quality as teachers' selected

Gathering Terraces

In traditional Iranian schools, semi-spaces as balconies had their own special usage; as mentioned before such space is called Ivan in Iran. It used to be a place for students' gatherings and informal meetings (Figure 3). In spite of Ivan several benefits in schools, terraces lost their place in modern educational buildings. Teachers consider the terrace an important space for linking the buildings together and students' gatherings (Figure 24).In Table 9 the higher rate of gathering terrace selection at the girls' school, is a representation of the girls' need for more social spaces. Another reason for this result can indicate the teacher's tendency to provide more outdoor spaces for girls in Iran.

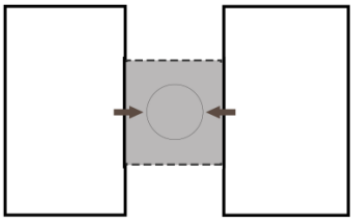


Figure 24: High school gathering terraces planned between two buildings

Bicycle path

Bicycle path is a high priority for teachers in the physical setting selection. (Table 8) As mentioned before, the considerable difference between the bicycle path selection rate in boys' and girls' high school is the manifestation of the need for girls' outdoor activities in Iran (table 9).

Conclusion

Interestingly, lots of selected settings, which are missed in Iranian schools nowadays, were part of traditional Iranian school buildings. It's regrettable that turning schools into modern buildings made us omit lots of functional and crucial spaces. Some other spaces have replaced the ancient ones in nowadays schools due to technology improvements. This beneficial process of selecting a number of teachers as major participants of this research can be quite helpful for future studies. Although teachers were the only selected group of participants in this study, it is predicted that other groups of users will be welcome in further ones. Considering that most educational activities are done under state supervision in Iran, consumers' opinions are not taken into account. Lack of funds and awareness of the benefits of this approach are another reasons in this regard. As long as organizations such as Nosazi (The organization for school renovation in Iran) and ministry of training and education are the only responsible association for school constructions, consumers' participations will be at the minimal level. Generally, the more the users take part in the process, the more innovation there will be at all educational spaces. Considering the users in designing phase of educational buildings are impossible without proper attention from the appropriate governmental authorities. In the future participative projects government can support comprehensive cooperation of different groups as teachers, students, parents, stakeholders and architects, which can lead to a multi-dimensional approach in educational programs.

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[1]A. Rismanchian & O. Rismanchian (2007) mentioned that :
In December 2003 earthquake that struck the city of Bam, Iran and its surrounding villages killed more than 30,000 people. It rendered more than 75,000 people homeless and severely damaged 85% of the buildings stock in the area. Bam was one of the oldest cities in Iran with valuable heritage buildings like Arg-e-Bam, the biggest citadel built by adobe in the world and registered as a UNESCO World Heritage Monument. In the aftermath of the massive destruction, the unique opportunity for re-planning the whole city had to be used to address different urban, social and cultural purposes(p.12)

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