

# Semantic Factors: Students' Sense of Belonging to Outdoor School Spaces

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**ABSTRACT:** School is an environment which brings out students' hidden talents. Paying attention to an appropriate context and environment has a huge impact on achieving this goal. The purpose of this study was to determine and evaluate semantic factors provided by experts influence students' sense of belonging at high school students in terms of Iranian experts. To this end, firstly data were collected through the library study along with preparation of hierarchal semantic factors, affecting the sense of belonging. After preparing the paired comparison questionnaires, the feedback from a number of experts was taken. Data were assessed by Analytical Hierarchy Process (AHP) and Expert Choice11 software. The results of the study showed that the factors related to meaning induced by environment are the most effective ones. In fact, semantic factors which are effective in the relationship of students with their feelings and perceptions have the greatest influence in increasing their belonging to school. Based on the results of the sub-categories, legibility, "evoking memories in the environment" and "Possibility of controlling territories for students," are respectively recognized as the most important factors in creating children's sense of belonging to the school yard. Factors such as age and gender of the student are less effective than other factors in making sense of belonging.

**Keywords:** *Sense of belonging, outdoor school space, semantic factors, Analytical Hierarchy Process (AHP).*

## INTRODUCTION

In today's societies, cultural and economic poverty is one of the factors that has the great impact on teenagers' dropout rates. Some data sources stated that about half of people in low-income communities have not completed high school. Young people who leave school prematurely, their future job will be ambiguous. The probability of illegal behavior and actions against the norms of society among them is very high. Recent studies indicate that dropouts are more in low-income families. Family socioeconomic status is inversely related to academic failure. Factors such as low income, poor housing, lack of supervision and the presence of large numbers of children in the family have impact on dropout (Lavasani, 2013). Our society is quite tangible and is associated with

above-mentioned problems. The need to increase students' interest and encourage them to continue the school education is highly required. To meet this need, according to school spaces as possibilities to create a sense of belonging to the school's students seems necessary. A student spends a lot of school time in the school yard and outdoor spaces. He took the opportunity to communicate in the school yard and practice the social and physical skills. The school yard is one of the first places to start practice their first social experiences. School yard is where the students make their own choices of friends for the first time. Unlike formal classes, yard has free and friendly atmosphere. Outdoor classes (formally and informally) can also form an important part of children's learning (Aziz & Said, 2012). About one-twelfth of their school times, students spend in the school yard. Of course, the attitude and the students' use of school yard, during the years of education from elementary to

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high school seniors, are subject to frequent changes. Considering adolescent psychological and personality changes, their attitudes and perceptions of use of school also changes. The reason is that students in this age range (high school) in terms of the stage of development have the ability to understand the psychological symbolism and abstraction in space and have wishful thinking about their space (Pakzad & Bozorg, 2012). Admittedly, spiritual and cognitive factors related to the relationship between man and environment affecting human concepts, for they will be understood in the sense of belonging and influence them toward school and their academic performance and behavior (Capps, 2003; Goodenow & Grady, 1993). Then, it seems the focus on semantic factors of humans and environment relationship, alongside with other factors like physical features and functionality helps to meet the students' spiritual needs. And the school can have more positive impact on education and students' future.

### Importance of the Issue

Much research has been done in the world on the importance and necessity of creating a sense of belonging, especially in schools and the benefits of belonging to the school to increase student motivation and social health and educational outcomes have confirmed (Capps, 2003; Goodenow & Grady, 1993). These researches often discussed the relation between sense of belonging and learning as well as its impact on social behavior and academic results. Also dropout rates among adolescents are discussed. In Iran, in some research on the areas of education and schools outdoor spaces, the need for a sense of belonging in the school environment has been discussed. However these researches usually were in the form of qualitative research and focused on the elaboration of sense of belonging to the place. Therefore, it seems that according to the importance of this issue and the positive impact can have on students' academic performance, but enough research has not been done on this topic in our country. In several studies about sense of belonging, some factors mentioned sporadically but less effective measures to enhance the sense of belonging of space are investigated in school. Factors like psychological features and communication with classmates and staff and education system used in schools are mentioned as effective on sense of belonging, Apart from that, the impact of the school itself as a place and a setting on student behavior in terms of mental and physical impact may not been addressed enough. In the present study from the perspective of environmental psychology, environmental factors as quantitative sense of belonging to be investigated.

### Theoretical Framework

Late childhood is considered children between the ages of 9 to 12 years, and they serve a purpose for the use of space and select a place according to the utility of the activity licensed under selection. From about the age of 12 years after leaving behind the childhood stage into adolescence, Psychological characteristics and their ability to think and evolve as a teenager are change. From this time on, he could face issues with the style of abstract

thinking and could understand the realities of the external environment, in addition to take benchmark ideals. Symbols and abstract elements used in the representation of place impress the student's perception and understanding of it. Before the onset of adolescence, one cannot focus on the aesthetic aspects. And at this time the needs of the community are met, select locations will be useful for practicing social role and give them a sense of identity (Pakzad & Bozorg, 2012). Then, high school students, who are in the age range of 12 to 17 years are included. Not only do they have the gained ability to understand the Semantic factors of environment, but these factors have a significant influence on the behavior and interactions.

In this study, the effect of the environment on a specific sense of human psychology needs to be addressed. Thus, environmental psychology plays a key role in this research. McAndrew quoted Prochansky, Psychological environment is a subject dealing with interactions and relationships between people and their environment, and believes that the physical environment considered as social environment and sometimes it is not possible to separate these two aspects of the environment (McAndrew, 1993). Place is a space with meaning and combination of "position", "location" and "sense of place". Position indicates the location of place. Location refers to material composition or the appearance of a place to socialize. Location includes buildings, roads and other aspects of visual and tangible place. Sense of place refers to Purer meaning in relation to the place: the emotions that can be provoked by a place. These meanings are personal and may be based on personal characteristics or can be public (Cresswell, 2004). On the other hand, Relf (1976) sees place more than just a space, which possesses three attributes of "the place's physical setting", "its activities, situations, and events" and "the individual and group meanings". He States that if there is a connection or subjective sense in the place then we feel or understand or explain Space.(Falahat, 2006; Javan & Motalebi, 2011; Seamon & Sowers, 2008) (Fig. 1)

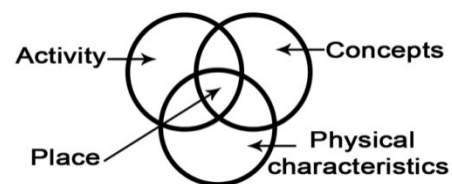


Fig. 1: Place's Component from canter's view, 1971  
 (Source: Falahat, 2005)

Maslow (1954) in his famous pyramid consists of a hierarchy of human needs. The need for a sense of belonging is placed in basic human needs. That shows the importance of paying attention to the needs of human nature. Without providing this need, the complex needs will not be met(Jones, 2009). In other words, the human innate needs are based on potential to establish a meaningful relationship with their surroundings shape and

create a sense of belonging in them.

Gibson's theory of the environmental features (1979)(Sharghi, 2011), describe the performance and capabilities of the physical environment and the landscape beyond them. In this theory, it is assumed that the viewer on the basis of social, economic, cultural and even religious background perceives the potential of environment. In this theory, the Gibson looks at the body of the environment through psychology. Perception is affected by unique mental background of place users. Kytta (2002) says this influences the perception of space as a result of three factors: people, and environment and considers environmental potential which human and Environmental capabilities are two available factors in the environment. And the extent of the capabilities of place would be functional according to every person subjective perception and background that they have the ability to use it (Sharghi, 2011). It is emphasized that substrates forming the human minds influence his ability to perception and his understanding of the environment. Secondly, environmental and physical features stress user's feelings of the belonging to environment. In Schultz opinion sense of place belonging is the result of feeling, perception and combination of memory with space. In his opinion, man has the ability to establish a relationship with the environment through four attributes: Mood, perception and understanding of the environment, dialogue and conversation, being with others. And By creating a mental picture of the place, causing meaning and a sense of place, this process ultimately creates a sense of belonging (Pormand, Mahmoudinezhad, & Ranjazmaiazary 2011). Pirbabaei in their study concluded that in the combination of physical, mental concepts of space and social structures, sense of place is created (Pirbabaei & Sajjadzadeh, 2011). However, Canter defined a sense of belonging to a location the interaction with individual and collective values and attitudes, behaviors, and social activities (Falihat, 2006). Pakzad claims that evoking memories and remembrance of place create sense of belonging and identity in communities. Since the ability to receive process, store and organize the information contained is called memory. Memories and experiences of each person are affected by a common culture and events in the community that makes people share memories with others in a society. This mental convergence calls "collective memory" (Pakzad & Bozorg, 2012). Social relations are the main motivation for creating a sense of belonging. Baumeister in the results of his research has proven that lack of sense of belonging has negative consequences, including psychological distress, increased stress and even physical problems (e.g. decreased immune function) (Baumeister & Leary, 1995). Anderman in their research suggests there is direct relevance between sense of belonging to academic outcomes, psychological and behavioral factors in adolescence. He introduces the psychological sense as a basic requirement, providing those with very positive effect in people's life (Anderman, 2002). Goodenow believes that learning and motivation to study not only is affected by education method but also is a wide range of personal and social relationships and feelings are affected (Goodenow &

Grady, 1993). Effect of Sense of belonging in reducing high school dropout rates are expressed in many studies (Pittman & Richmond, 2007). Moreover, increasing the Sense of belonging at school is associated with lower levels of loneliness and depression (Pittman & Richmond, 2007). Tanner had extensive research on the effect of schools on pupils' results and the school yard and landscape is a component of this research (Tanner, 2009). Shamseddin in their study check affect the school yard form on social behavior and Sense of belonging to school. He came to a conclusion that students prefer gathering spaces that have the ability to see the others, lawns and shade which do not feel like they are being monitored and effective on increasing their Sense of belonging (Shamsuddin, Bahauddin, & Aziz, 2012). Prince during the conclusion of the researches on this area suggests similar results. Notes that the school environment which is perceived as an environment of support and care, and insists on individual effort and improving student, have more adaptive model of cognition and behavior and senses (Prince & Hadwin, 2013). Effect of form on the conceptual model presented by Gustafson, refers to the interaction of three aspects of "person", "people" and "environment" and is to create a sense of place (Gustafson, 2001; Javan & Motalebi, 2011)(Fig. 2).

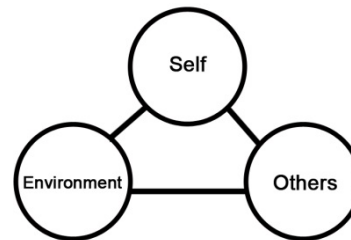


Fig. 2: Place's Component from Gustafson, 2001  
(Source: Javan & Motalebi, 2011, 28)

Table 1 is based on the conceptual model adjusted, and forms the conceptual framework of this study. The contents and opinions of experts in this field are taken together according to Table 1. Semantic factors influencing Sense of belonging is divided into three categories: the first group included the factors that influence individual perceptions of the environment. These factors include emotional and mental and physical characteristics of each individual. A second set of factors that influence a person by virtue of their being placed in the community. Social climate and cultural society that make a society deal with the same situation existed. Third factors are subjective in dealing with in a particular environment and the relationship with it. The individual perception is affect by environment. Perhaps by taking the meaning of the environmental factors in the design and fitting of the semantics associated with the environment, the desired perceptions of the user are set up. As mentioned earlier, the specific characteristic of each individual impact the sense that he would get it from the

Table 1: Semantic and perceptual factors related to the relationship between man and environment

Semantic and psychological factors related to the relationship between man and the environment, creating sense of belonging in school's outdoor space		Personal Factors Affecting the perceptions of the environment (personal factors)							
Subjective factors influencing the perception about the environment		public and social Factors Affecting the perceptions of the environment		the environment					
Sensing the environment	Coordination with environment	Understanding and perception of the environment	privacy/territory	(social factors)	Individual characteristics	Mental image	Demographic information		
Getting the senses	Understanding and using behavioral setting	Understanding the roads and paths	Possibility of controlling territory	Time Spent in the yard	Feeling the privacy	Events and celebrations are held in the school	Emotional connections	Expectations and wishes	The age range
Sense orientation	Readability	Understanding the layout area	Communication with outdoor	Icons (clothing, forms, school logos, ...)	Visual security	Eligibility	Memories	Gender	
	Orientation	vicinity	Experience, evokes, memorabilia	Tradition	Motivation	Meaning			
		Observing the desired distance	Continuation of activities in yard	Cultural symbols	Moods				
			Repeats of activity	Beliefs					

environment. This is because mental factors influence on their behavior in the environment, and the mental image of a factor in people's sense of belonging is in the environment. Physical and non-physical factors help create meanings and emotions that take place in the mind creating the mental image, so creating spaces evokes memories and reminders can be effective in building and strengthening their sense of belonging. Pakzad quoting Rappaport: People based on meanings evoke from the environment react to surrounding environment. On the other hand, people with a same living conditions and environments and a shared historical memories, customs, beliefs and culture, signs and symbols, find the same collective view of their environment. These factors cause people to have similar interpretations. Pakzad calls this common feature as collective memory. He noted that the collective memory of a set of evokes that exist in the society as a narrative and created a sense among members of a community (Pakzad & Bozorg, 2012, 179)

To interact with the environment and remember and understand the environment, human beings used signs and symbols. Symbols can have different meanings in different cultures. Signs usually have the same meaning for people with a shared cultural and mental context induce. As signs influence people's feelings about the place, correct application of them in learning environment and give the desired sense and impressions to the users. A part from individual and collective characteristics of people, the connection of any person with a place and capabilities in a place to facilitate the communication, gives users understanding of Environment. For instance, public space in the schoolyard, conceptual or physical partitions area such as personal space, territory and the possibility of individual privacy in the yard without bothering others or feelings harassed by others. In addition to the benefits of being in the public space, people meet the need to have their own place in the schoolyard and also meet the need of belonging to space. The main component of sense of belonging to a place is territory, which is reflected in environments with clear boundaries and identities. Territory shows possession of a person or group belonging to a district or region. Physical and graphical notations such as "walls, fences, texture and color changes" are indicated (Pormand et al., 2011). Territory allows individuals to control their personal identity and communicate with it. In close association with this concept, privacy can be named. Ability to select individual or group relationship with others for personal independence, and providing emotional discharge connections suitable for the control and containment space is limited and Altman calls this ability as privacy (Altman, 1976). Individuals control desired distance, create privacy and increases sense of belonging to the space. The readability of environment is a quality that makes a place understandable. Noticeable point in the legible space is forming or observing a clear and precise idea of the characteristics of place in people's mental image (Bentley, 1985). It also affects how people feel about the environment.

## MATERIALS AND METHODS

In this study, we examined the library resources in the field of

environmental psychology. After gathering factors affecting on sense of belonging to the semantic content analysis, as a primary classification, we prepared hierarchical table (Hierarchical table of criteria that affects sense of belonging). Next step was surveys of the number of experts in the field of psychology and architecture. And the final classification was determined. Researcher made a questionnaire using paired comparisons of these factors prepared, and the survey method was used to evaluate the weighting factors. Questionnaire was completed with sample society of 11 experts from the fields of psychology and architecture. University of Tehran professors and researchers were selected as non-random selection. Collected data Analyzed by the Software Expert Choice11 using AHP analyze to evaluate all the factors. This process (AHP) is one of the multipurpose techniques of making a decision that was invented by Thomas L. Saaty in the 1970s. Accordingly, for each obtained factor, a numerical value as a measure of value is determined. Judgment

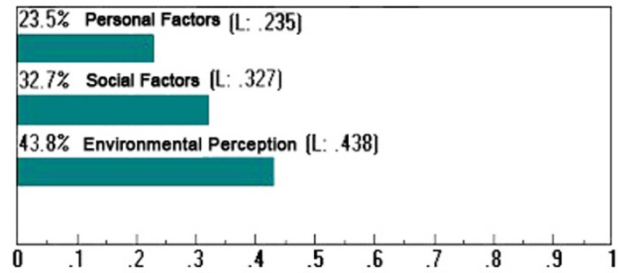
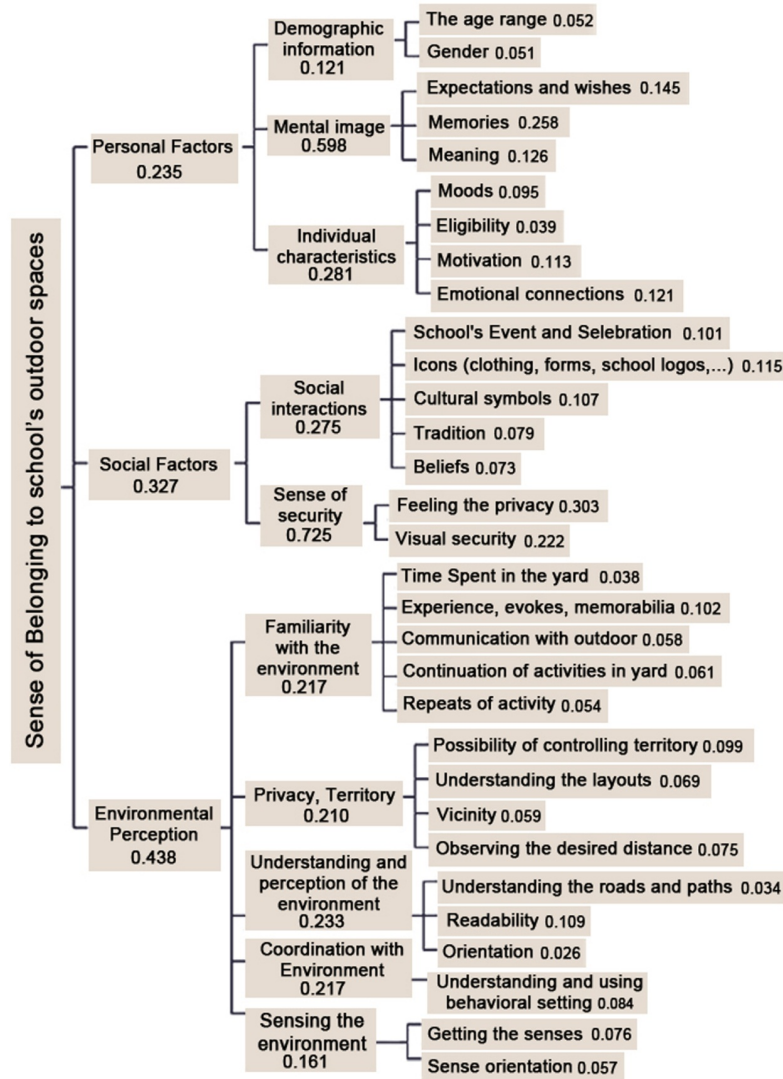


Fig. 3: The percentage of each group of factors affecting the sense of belonging.

was based on factors 9 Quantitative rating scale of Saaty (Forman & Selly, 1996). The specialist's judgment determined which factor was more effective in increasing sense of belonging on outdoor educational spaces. Finally, after identifying the most



Figur. 4: A conceptual model of semantic factors affecting the sense of belonging - writer's supplier

effective factors of research, in order to ensure the reliability of the results, the rate adaptation is used. If compatibility rate (CR) is less than 0.1, comparisons can be obtained compatibility and is accepted (Forman & Selly, 1996) (Fig. 5).

### RESULT AND DISCUSSION

After the "goal" is the top level of the hierarchy, the lower level of the hierarchy is divided into three main factors. "Personal factors affecting the perceptions of the environment", "public and social factors affecting the perceptions of the environment" and "Subjective factors influencing the perception of the environment" (Fig. 3). Briefly, these factors as personal factors and social factors and the environmental perception used in following Figures. Levels 3 and 4 of the hierarchy are the sub-category of parameters and variables.

Outcome of Paired comparisons of three factors influencing

students' sense of belonging in the school are in Figure 4. In this diagram, the importance of environmental perception, 43.8% has the greatest impact, and social and personal factors, 32.7% and 23.5% respectively diagnosed effective on student's sense of belonging.

Also, among the sub-categories of environmental perception, three factors are more important than others. "The understanding and perception of the environment," "familiarity with environment" and "privacy and territory" with 66%, have the greatest impact on creating a sense of belonging of students. And at a lower level, readability, experience, evoking memory, memorabilia and possibility of controlling territory are most important factors (Fig. 5). Since the rate of adaptation of the graph is less than 0.10, comparisons consistency achieved is acceptable. The current study finding and Schultz's comments about the sense of belonging to a place are aligned. In his opinion,

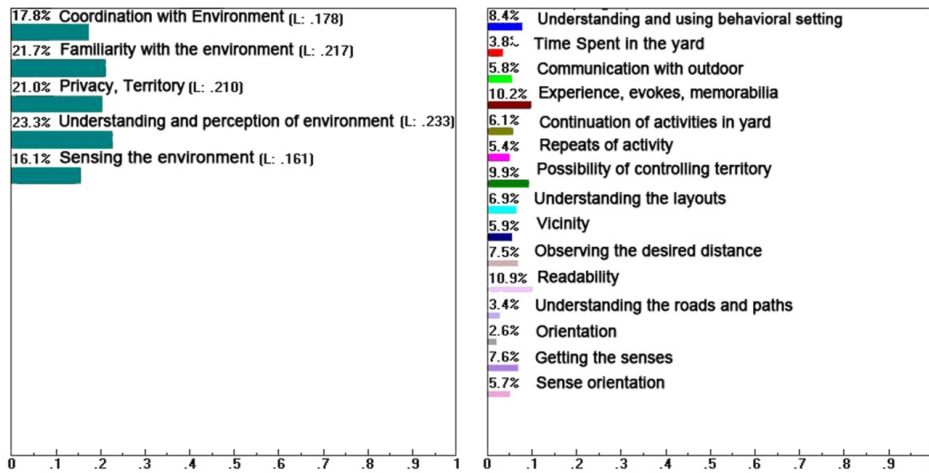


Fig. 5: The importance's of the following factors are classified "the meaning of environment"

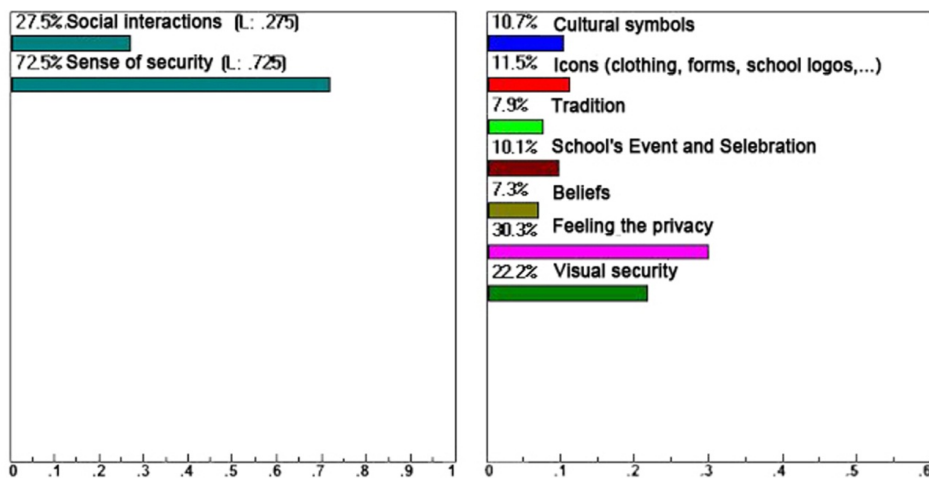


Fig. 6: The importance of factors classified under "social factors"

understanding the environment is an important factor and leads to sense of belonging to it. On the other hand, he knows place as a phenomenon and space may become place in the context of perception and orientation (Pormand et al., 2011).

According to the results, most effective factors are the factors such as two categories personal and social factors, which affect perceptions, and reactions are common among individuals in a society. In other words, common social characteristics are more important than individual properties. Two subsets category of social factors, such as sense of security with the impact factor of 72.5% and the inconsistency 0.00 were compared to the social interactions, and the result showed a higher value. And at a lower level, feeling the privacy (not being monitored) is most important (Fig. 6).

Among the subsets of " personal factors ", mental image of the environment by impact factor of 59.8% and inconsistency rate of 0.003 is far more powerful than any other demographic characteristics on their sense of belonging to school. The result matches with Rappaport views on "the importance of self-meaning associations in the minds of people by their belonging to the environment"(Fig. 7).

### CONCLUSION

The importance and necessity of creating a sense of belonging and the its impact on greater needs of human beings such as pursuing inner talent has been discuss in many studies. Of the studies mentioned above, we can conclude when students know school as their own, they are motivated to study and they are mentally healthy and they can study better. The semantic and psychological factors related to the relationship between students and the schoolyard play an important role in creating a sense of belonging and should not be overlooked. Evaluation results show that subjective factors influencing the individuals' perception faced the environment "environmental perception", compared to factors, such as affecting the individuals'

perceptions of the environment "personal factors," and factors affecting the public perceptions and the social the environment of a "social factors" are greater impact on their sense of belonging to the school. Researchers based on the current study findings indicated important factors, such as experience, evoking memory, memorabilia, and possibility of controlling territory (Figure 5).The results of the study showed that the factors related to meaning induced by environment are the most effective ones. In fact, semantic factors which are effective in the relationship of students with their feelings and perceptions have the greatest influence in increasing their belonging to school. Based on the results of the sub-categories, legibility, "evoking memories in the environment" and "Possibility of controlling territories for students," are respectively recognized as the most important factors in creating children's sense of belonging to the school yard. Factors such as age and gender of the student are less effective than other factors in making sense of belonging.

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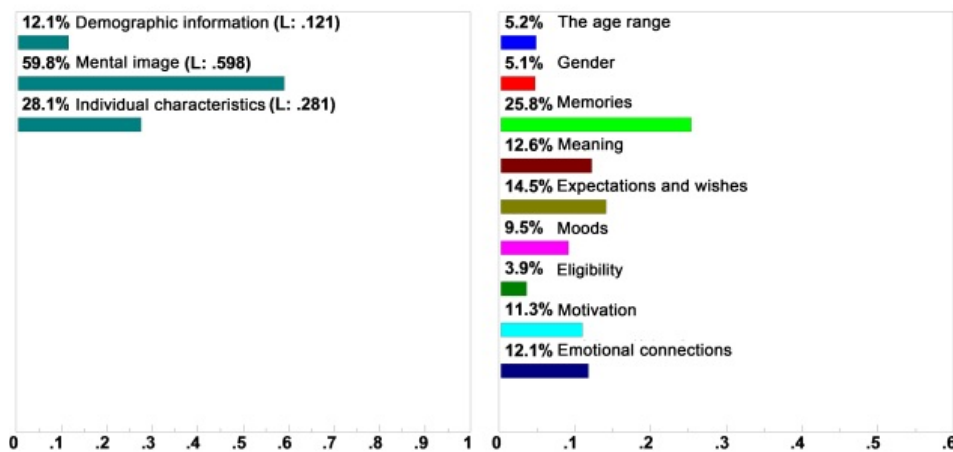


Fig. 7: Percent of the importance of the following categories "personal factors"

in selected middle schools in Region IV and VI educational service centers, Texas. Texas A&M University.

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