

The role of kindergarten's interior spaces in enhancing Children's creativity'

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Abstract

Experts should search for new ways to strengthen students' attachments to their learning environments, because Students spend most of their time in school, Hence the name "second home." It affects students' behavior and mental processes. Thus, attachment is key to personal identity. Attachment to one's school has been shown to correlate positively with academic and social outcomes. Today's many schools struggle to meet the basic psychological and physical needs of their students. Thus, students do not have an interest in their school, they are less likely to go to class, pay attention in class, and become disengaged. To this end, the current article aimed to identify the influential factors affecting students' attachment to their school. First, previous research identifies factors that influence a student's sense of school attachment. Second, several questions and hypotheses are formulated. Finally, a questionnaire is created and given out to 326 students at three International mixed schools in Erbil, Iraq, to validate the beneficial elements and answer the established questions. SPSS is used to do statistical analyses on the data collected. The results show a significant correlation between the sense of school attachment and their educational effectiveness. It also indicates that the quality of space gets evaluated more in terms of activities by male students, while the evaluation of the same space gets done more in terms of social and emotional factors by female students.

Key words: Educational efficiency, Place attachment, Learning spaces, learning environment, Erbil City

1. Introduction

One of the most influential spaces on children's lives are educational spaces. As a result, school environments have the greatest effect and role in shaping the future of children, and their proper design can provide the foundation for the development of children's personality, education, and training as the future. According to one of the most influential theorists in the field of architecture (Lawson), all the architecture projects that need to be designed, none of them can be as important as the design of educational environments; because it is related to a wide range of crucial social and educational activities, as well as the growth and development of children (Kamlniwa, 2010). Students and children are important in building and progressing any society, and their decisions can impact the society, which is vital in today's developed countries. The designed environment can affect behavior and personality through the same process (Soheili et.al 2020). Creating a sense of attachment to the school environment and a sense of well-being among students is one of the factors that should be considered by designers and architects in order to create quality in the design of educational spaces. In the educational setting, cultivating and enhancing such a feeling in the learning environment can foster a sense of belonging among students and give them the energy to engage with the classroom and learn from it (Mehraban et.al 2019). Clearly, students whose physiological needs are not met have less mental energy to devote to learning. Educators, administrators, and teachers are aware that if students' basic needs are not met, learning may not be effectively processed (Borzooeian 2014). Unsatisfied students are unlikely to be motivated to develop creativity and new ideas. Self-actualization requires such needs, physically fit students feel comfort, security, belonging, and respect, they'll be more

receptive and motivated to learn (Borzooeian 2014). Academic performance, well-being, and a smooth transition into teens for high school students depend on having a sense of attachment to school and a variety of social and emotional skills (Anderman 2002; Sari 2012; O'Conner et al. 2011). Sanchez et.al (2005) discovered that a sense of school belonging predicted academic success considerably, impacting motivation, effort, and reduced absenteeism. This finding is consistent with earlier research demonstrating that favorable attitudes about learning and, more specifically, academic self-efficacy can be enhanced by emotions of connectedness to school (Battistich, et.al 1995; Roeser, et.al 1996). However, the lack of frameworks, models, and interventions may make it difficult for schools to successfully promote a sense of school attachment. This paper aims at exploring the factors that enhance students school attachment through a theoretical study for the previous related researches. Such factors can improve students' educational efficiency by creating a sense of attachment. To verify the positive aspects and provide answers to various issues raised by this research, a checklist and questionnaire is designed and distributed to 326 students at three international mixed schools in Erbil, Iraq. The key question is: (What characteristics may educational institutions use to help students form a greater emotional bond with their education?). The data gathered will be statistically analyzed using SPSS.

1.2 Sense of School attachment

Researchers have used a lot of different words to describe the concept of place attachment to school, such as "school connectedness," "school bonding," "school identification," "school attachment," and "school belonging." These words are all different ways of saying the same thing (Osterman, 2000). The most frequently referenced definition of school belonging, defining it as 'the amount to which children feel individually accepted, respected, included, and encouraged by others in the school social environment' (Anderman, 2002; Knifsend & Graham, 2012; Ma, 2003; Nichols, 2006). Attachment to school is frequently associated with and considered as a component of academic motivation study (Ryan et.al 2000; Glasser, 1986). There are many different theories of motivation that can be applied to education, including Glasser's (1986) control theory, which claims that all motivation stems from basic human needs, such as attachment. According to Glasser (1986), students will struggle in school if their basic desire for belonging and attachment isn't addressed. Many variables have been found to be beneficial in the establishment of place attachment in educational spaces, including the human-to-human interaction and the human-to-place relationship (Scannell and Gifford, 2010, Altman and Low, 1992). The development of students' cognitive, emotive, and behavioral skills has a direct bearing on the quality of the school's service.

1.3 place attachment in adolescence

Since adolescents spend so much time at school and gain so much independence during this time, it is widely believed that adolescence is a critical period for the formation of place attachment (Hidalgo and Hernandez, 2001). Attachment to one's parents and school attachment are two aspects that have been associated to a decrease in problem behaviors in children and adolescents, according to Cavendish et al. The adolescent's attachment to the people who cared for him as a child serves as a foundation from which the adolescent may make sense of the world around him (Hamarta, 2004). According to Morsünbül and Cok (2011), attachment plays a significant role in adolescents' ability to deal with changing conditions during adolescence. Adolescence is said to be a time of profound physical and psychological transformations (Cücelolu, 2012). In children

and young people, they form attachments to places. Place attachment is based on developing clusters of positive thoughts that are linked to the meaning of specific places. When people are teenagers, they usually start to become more aware of how much they love the places they grew up in. This is shown by a growing sense of connection to the area and a desire to live there into adulthood. Young individuals who believe they have been totally integrated and accepted within their local community, or who have close ancestors in the area, have the strongest feelings of belonging (Lynch, 1977; McCreanor et al., 2006). Place attachment appears to be more essential throughout middle adolescence (14–17 years old) than early adolescence (10–13 years old), when children are less mobile and independent, or late adolescence (18–22 years old) (Chipuer et al. 2003). As a result, strong place attachment is critical for healthy human development throughout life, especially during middle adolescence. According to Mattebo et al. 2022, a lack of attachment and insecure relationships for both boys and girls students in school have a considerable impact on subjective well-being. This suggests that relationships with the environment and the people in it have a significant impact on subjective well-being. Consequently, this study investigates attachment in students in grades nine, ten, and eleven.

2. Literature review

Educational effectiveness of students is the subject of investigation by a large number of researchers. Some of these researchers focus on the students' physical needs, while others investigate the students' social and emotional needs. It is clear that students who have met his physical and psychological requirements will be able to fully participate in school life and develop a strong sense of attachment to his institution. According to **Allen et al. (2017)**, schools provide an excellent setting for cultivating a sense of belonging because they provide numerous opportunities for group experiences as a result of their structure and placement within a larger social and cultural context. According to research conducted by Allen et al., there are three main benefits to students who feel attachment to his school: (1) improved academic performance (Goodenow 1993, Voelkl, 1997; Sari, 2012), (2) enhanced psychological well-being (Nutbrown, Clough, 2009), and (3) increased prosocial behavior (Lonczak et al. 2002). Also, **Koller & Farley 2019** studied how children become attached to places using Chawla's (1992) theory. It aims to promote place attachment in children's development and well-being. This approach identifies three types of fulfillments: security and belonging, social attachment, and creative exploration. Places of safety and belonging are essential for infants' early experiences and as they grow. Children develop self-esteem when they can design their own play spaces. students in school have attachments to places that support social relationships. **Bouchard and Ber 2017** investigated Student-teacher interactions, peer alliances, and engagement in extracurricular and school-based activities all contribute to a sense of belonging. Lynley and Eric Anderman found that students with a stronger sense of belonging have better cognitive and psychological functioning (L. Anderman & Freeman, 2004), higher academic motivation (including intrinsic motivation) and positive school attitudes (L. Anderman, 2003), and better mental health and social problems (E. Anderman, 2002). Also, it emphasizes the importance of teachers in helping children discover or rediscover their sense of belonging to the classroom and school.

Borzooeian 2014's primary focus is on 'place attachment' Through design, tried to identify methods for establishing and strengthening this emotional connection between school children and their educational environment. Students who lack basic physiological demands have less mental energy to learn. Educators, administrators, and teachers realize that basic student

needs must be satisfied for learning to occur. These are self-actualization demands. In contrast, students who are physically fit feel safe, valued, and respected. They will be more receptive and determined to satisfy their curiosity. Special qualities are required in educational settings to support students. Thus, in architectural design, it is vital to build responsive environments that maximize user options. As a result, several factors for space should be considered (Accessibility, Diversity, Legibility, Flexibility, Visual proportion, color of attachment). **Cheryan et.al 2014** demonstrated how the physical environment of the classroom has an effect on student performance. Two findings are critical: first, the structural features of the building have a major effect on learning. Poor lighting, noise, poor air quality, and inadequate heating in the classroom are all associated with decreased student achievement. Second, scientific research demonstrates the surprising role of symbolic characteristics of a classroom, such as items and wall décor, in enhancing student learning and achievement in that context. Symbols communicate to students whether they are valued learners and belong in the classroom, having a significant impact on their educational choices and performance. **Barrett et.al 2015** backed up the utility of the SIN (naturalness, individuality, and stimulation) conceptual model for organizing and studying the whole range of sensory impressions perceived by a person in a given place. The naturalness design principal accounts for nearly half of the influence on learning in this situation, with the other two each accounting for roughly a quarter. Seven critical design elements have been identified within this structure, in students' academic achievement. Light, temperature, air quality, ownership, flexibility, complexity, and color are the factors to consider. " Pupils' academic progress is based on a wide range of factors that come from all three of the design principles.

Ebrahim Zadeh et al. (2021) described school outdoor areas to enhance learning and relaxation in students. Increase the students physical, mental, psychological, and social talents by fostering environmental attachment. By providing the necessary facilities, the created environment will facilitate the student's development. According to the research findings, the most important criteria to increase the student's attachment to the open space of schools are five main factors and 17 variables. Main factors include (Interactive factors, Individual factors, Physical factors, Physical factors, Social-group factors, Active factors) Finally, **Mozaffar and Mirmoradi (2012)** discussed the impact of natural spaces on children's growth, which encompasses "cognitive," "social and physical," and "emotional" development. Natural spaces at schools should meet these three types of children's needs (educational needs, develop communal and physical needs, Develop emotional needs). The presence of nature in schools improves learning quality. A number of studies show that green environments can aid improve concentration (Grahn, 1997), attention (Taylor, 2001; Wells, 2000), and self-discipline (Taylor, 2002).

3. Theoretical framework

The research analyzes the diverse effects of school details on students' ability to feel more connected to their school and how this affects their academic achievement. It is critical to mention at this point that a suitable school atmosphere influences more than just students; it also affects the conduct of teachers and their training process. This beneficial influence can have a direct effect on students learning and also help them develop a sense of attachment.

Students' sense school attachment, according to the main hypothesis of the study, "has a favorable impact on their educational efficiency," and their sense of attachment to their school

environment is considered an independent variable in the study. It is the goal of the remaining portion of this research to demonstrate that it is successful on the dependent variable, which is the educational efficiency.

Therefore, it is clear that physical needs and psychological needs (such as social and cognitive ones) are inseparable. These along with environmental affordances collectively define and alter the nature of interactions and the process of forming an attachment to a place. These three dimensions act as steps in the process of affecting students physically, socially, and academically. The main aspects of theoretical framework are shown in figure (1). The three most notable dimensions of school specific to place attachment are described below.

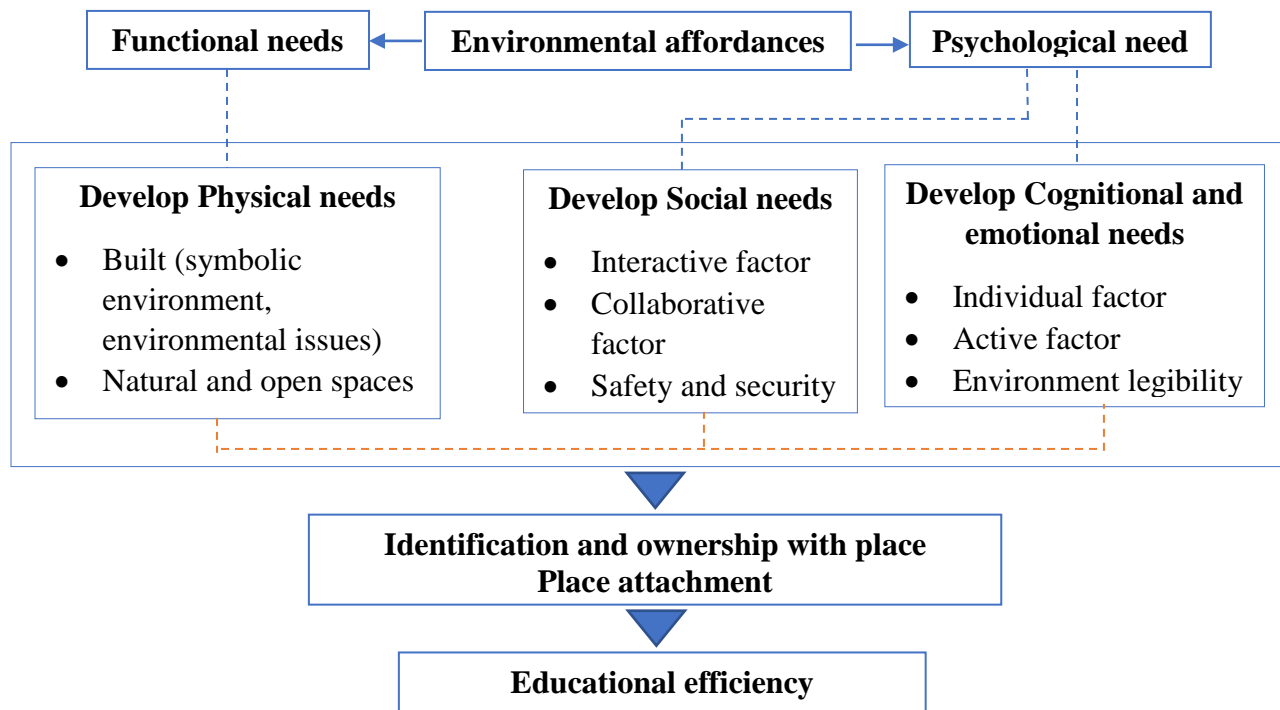


Figure (1): Theoretical Research Framework. (researcher).

3.1 Students functional needs

The students' behavior will improve and a positive learning environment will be established if they are required to meet basic needs while at school. When the academic needs of students are met in an environment that also promotes their social, mental, physical, and emotional health, students are better able to finish their work and benefit from the experience overall (Paul and Kumari 2017). Students' ability to collaborate and learn is impacted by the classroom's (and any learning environment's) physical setting. Students are affected not only by the emotional but also the physical atmosphere of the classroom.

3.1.1 Physical dimension

The term "physical environment of the school" refers to all on- and off-campus school structures. All students and staff must be able to use these facilities in a healthy, safe, and

comfortable manner. Other elements to take into account while thinking about the physical environment of your school include the inside climate, lighting, noise, interior design, furniture, and other indoor amenities. The physical environment of a classroom cannot be underestimated or ignored, given that a classroom is more than just books, lessons, and class projects.

A child's educational growth is greatly aided by an environment that is both physically safe and intellectually stimulating. Success in the classroom depends on a number of factors, including the school's environment, the teachers' attitude, and the students themselves characteristics (Ukeje et.al 1992). There is a strong correlation between the classroom climate and student achievement on a wide range of learning outcomes. Students' attitudes toward learning are positively affected by the classroom's physical, emotional, and artistic elements (Goodlard, 1984). Developmental researchers are becoming increasingly aware of the significance of school climate to adolescents' adjustment. Pilkauskaite-Valickiene et al. state that the perceptions of school climate by middle school children relate to their behavioral and emotional adjustment. Favorable youth development and teenage emotional state are associated with a conducive classroom setting for discussion and positive attitudes toward education.

The term "physical environment" is used to describe the assortment of features and structures on school grounds that help transform the outdoors into dynamic, engaging, and multifaceted learning spaces and activities (Fjørtoft I, Gundersen KA 2007). Gibson's affordances hypothesis 1997 describes how a person's surroundings might serve as a setting for their behaviors and education. previous research mentions students' pleasure in communicating with **the natural setting**, which is referred to as the "engagement of the active environment". The third teacher refers to school buildings, their environments and landscapes, open spaces and classrooms, layout, and decorations (Sepasgozar et.al 2020). Nature was always seen as an important part of design by children. Chawla's idea is confirmed here by the children's desire to construct their own activities in outdoor play spaces while ensuring that they have some type of social connection.

3.2 Students Psychological need

The psychological climate in educational building is the result of a variety of potential environmental conditions that actually have an impact on teaching and have a significant impact on effective teaching. The physical environment affects psychology in ways that are connected to both cognitive and social development. Learning is greatly aided by social interaction. The right conditions can be produced when analyzing how social interactions affect learning through various forms of collaborative learning. According to Vygotsky, social relationships, culture, and history all have a significant impact on how children grow cognitively. The mental process of learning and comprehending through the senses, life experience, and thought is known as cognition.

3.2.1 social dimension

The connection between places and people is revealed via the children's stories. 'Places shape relationships and relationships shape places,' say Fleet and Britt (2011). Many children saw friendships as the basis of the places they lived (Jansson 2015; Rogers 2012). Social connection is when people are close to each other in an interpersonal and interdependent way, which makes them feel like they belong. Social connection, on the other hand, shows how happy and close an individual feels when they interact with other people (Anderman, L. H. (2003). It is

a feeling of being accepted and valued for one's best qualities, rather than being tolerated or not being paid attention to. Because cognitive and emotional processes are linked in the brain, social connection is a must for learning and well-being (Benningfield et.al 2015).

Many "believers" in Vygotsky suggested that students learn through **interaction**. "We learn by engagement with others," says (Doolittle, 1997), "and in doing so, we produce something qualitatively different from what we started with.

People's interactions with one another and their ability to fully participate in activities are influenced by spatial design. As a result, learning environments should promote **collaboration**. Collaboration happens when a group of students works together to complete a task. According to Tharp and Gallimore, collaborative spaces are places where students have access to peers of varying abilities; where verbal and nonverbal interactions between students and teachers occur on a daily basis; where students are free to investigate a variety of activities; and where low levels of adult supervision allow students considerable freedom in what they achieve and how they achieve it. Chawla (1992) notes that children's experiences of place are associated with attachments from home with a beloved family member. When a **safe and secure** environment is created by caregivers, one that is separate from conceivable risks, a child's investigative system becomes stimulated making it possible to assess inspiring environments (Scannell et al. 2016).

3.2.2 cognitive dimension

The information, memories, and beliefs that contribute to the significance of a place are referred to as cognitive (Scannell and Gifford 2014). The development of a mental representation of a place, which includes a mental map of the place and route knowledge of the place's arrangement (R . J. et.al (1997), as well as other information such as knowledge of the place's history and specific place affordances, occurs cognitively as a person becomes emotionally attached to a place. Beyond mental representations of structural and symbolic characteristics of a place, cognitive links to a place include memories of the place, its people, and the events that have taken place in that location (D. L. et.al (1996).

The degree of attachment to a place varies from person to person. **Individuals** choose places and become attached to them based on conscious preferences that arise from their individual characteristics and traits(Low ,McDonough 2001). In fact, this is rooted in how people interact with place Physical and social in the form of cognitive, behavioral, emotional and semantic interactions. The result is the attachment of place in such a way that man depends on. The type of **activities** themselves are able to receive meaning from the environment (Rees 2009).

Kevin Lynch 1960 raises the issue of **environment legibility** and investigates the factors that contribute to this legibility in his book, on the sense of place attachment as one of the most effective features in design. Lynch continues by outlining features and body elements, paths, edges, cues, and nodes as effective in shaping the concept of environmental legibility (Lewicka M et.al 2019). We occasionally use the phrase "I belong to it" when we deeply feel attachment or belongingness, and this trait provides us a greater perspective of the area (Layder, 1993). Walker and Avant (1988) also suggested that a sense of attachment emerges when the concept's distinguishing traits are visible. Legibility, is the ability of a place to be understood. Its significance is based on two factors: shape and pattern of activity.

Table 1. different variables affect students' sense of school attachment (researcher)

Dimensions	Indicators	Design	Items
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of place attachment			parameters	
1. Physical dimension	Physical built environment	Environmental issues	Lighting	Students who receive more natural light (daylight) do better than students who receive less natural light (Tanner, 2008).
			Noise	Excessive External noise impairs learning (Klatte, et.al 2013).
			Temperature	Temperatures between 68° and 74° tend to be ideal for learning (Earthman, 2004)
			Natural ventilation	Exposure to poor-quality air is associated with decreasing student attendance and has a detrimental effect on teachers' ability to teach effectively (Schneider, 2002).
		Symbolic Environment	Movement and Circulation	Spaces where individuals could move freely without feeling constrained or crowded (Tanner2008).
			Objects & Décor	The children in the classrooms with wall displays were more distracted and performed worse on worksheets (Fisher et al., 2014)
			Color	Students' moods are influenced by colorful classrooms, which can make them either concentrated and focused or confused and annoyed (blogger 2015).
			View Transparency	Connection to the beautiful outside nature the use of glass panels to divide the various zones creates a sense of spatial continuity across the space.
			Seating arrangement	The classroom furniture arrangement affects student comfort and interaction with peers and teachers (Burgess & Kaya, 2007).
			socialization	Interactive zones that promote engagement between students and the surrounding community using gazebos for and seats for small conversations
	Natural environment	Physical social and emotional development	Game creation	Creating play spaces appropriate to the gender and age groups
			Outdoor education	Outdoor environmental education fosters the development of knowledge, attitudes, and skills across the curriculum - it is information about the environment ('Head'), skill development in the outdoors ('Hands'), and the development of caring attitudes for the environment ('Heart').
2. Social dimension	Interaction	flexibility	The seating area's range of furniture styles provides for a variety of teaching and learning experiences and activities, meeting all of the learning commons standards for students and researchers (AboWardah et.al 2019)	
		technology	In today's world, schools need to incorporate cutting-edge technology and inventive and interesting classrooms in order to help children learn and grow.	
		Space size	Finn et al. (2003) suggests that students in small class sizes are more noticeable and more likely to engage in learning and social behaviors during class, based on OMJ group theory.	
	collaboration	Collaboration-Oriented Furniture	After deciding on technology, choose furniture that facilitates small-group collaboration. Tables should be shaped like a hyperbola, says Jason Wheatley	
		Breakout spaces	It is critical that breakout spaces facilitate student-teacher, student-student, and teacher-teacher interaction in a variety of ways.	
	Safety and security			Consider the physical and human aspects of security in the design of environments such as visibility and fence, fence, control and supervision of children, and the physical hazards of the school environment.

3. Cognitive dimension	Individual factor	Group and individual ownership	The ability to modify and manage an inhabited space fosters attachment to that space. Additionally, participation in design and development has been shown to boost participants' sense of attachment and ownership (Chawla & Heft, 2002).
		Personalization	Projecting one's self into one's actual surroundings not only gives the place new life, but it also allows one to express one's unique individuality (Marcus, 1992).
		Duration of study	The amount of time an individual has spent in a place is the most consistent predictor of place attachment (Lewicka, M. (2011).
		Gender	Gender is a powerful indicator of how people act. and many studies have found significant differences in attitude and behavior between males and females that have an impact on academic performance.
	interactive factor	Activities & interests	Children interact with the environment through activities that actualize affordances (Kytta 2003).
		Cozy corners	Cozy corners: Design private corners to provide childlike privacy (Ebrahimzadeh et.al (2021).
		Comfort active classroom	Students should be able to undertake a wide range of activities comfortably in classroom. It's important to incorporate components like couches, pillows, rugs and carpets, seats, lecterns and tables of various types in the learning environment to facilitate this well-being (Bautista and Borges 2013)
	Environmental legibility		Legibility enhances a person's perception of the environment which increase place attachment. Lynch continues by outlining features and body elements, paths, edges, cues, and nodes as effective in shaping the concept of environmental legibility (Lewicka M et.al 2019).
	Creation of home environment		By meeting their needs and providing them with a secure and comfortable environment, a good home learning environment fosters students' curiosity and confidence.

4. Research Methodology

A review of educational environment literature, including psychological and architectural studies, yields relevant definitions, hypotheses, checklists, and questionnaires. It is clear that it is necessary to evaluate the factors that contribute to school attachment. Additionally, it is necessary to investigate the relation between school's environment students' ability to learn. In this regard, after extracting the factors that influencing the student's sense of school attachment, based on the objectives of the current study and the existing literature, survey made, questionnaire is created and given to 326 students. This research made use of Aslan et al. 20121 obtain benefit from the questionnaire he used to measure students' attachment. Distribution of the questionnaire was made across three groups of students with high, moderate, and low educational status to examine the correlation between a strong feeling of place attachment and academic success. The establishment of this group facilitates interaction between students' sense of school attachment and their academic performance. Also 46 items used to be on the checklist. Based on these items from prior research and the current study's theoretical framework that influence students' attachment to their schools, all schools are evaluated, and the results are compared with tables obtained from various tests using SPSS.

In order to get the best findings, the validity and reliability of the questionnaire employed in the current study were assessed using the opinions of architectural professors and high school teachers. The Cronbach's alpha test was applied in SPSS software to evaluate the reliability of

the questionnaire and the correlation between questions that addressed the same common components contain 44 items. Values above 0.965 were considered acceptable after applying the Cronbach's alpha test (Table 1). This proves the questionnaires' stability and consistency. Cronbach's alpha has the following value:

Table 2. Cronbach's alpha value.

Reliability Statistics			
sections	Cronbach's Alpha	N of Items	Decision
Place attachment	.907	10	Reliable
Physical needs	.862	11	Reliable
Social need	.879	9	Reliable
Cognitive needs	.912	14	Reliable
Total	.965	44	Reliable

The following are the general hypothesis and questions that shape the objective of this research:
(Students' ability to learn more effectively is enhanced when they feel a strong emotional connection to their school)

What characteristics may educational institutions use to help students form a greater emotional bond with their education?

The results of this survey will shed light on key elements of school architecture that have been shown to encourage a feeling of school attachment among students and boost academic performance.

5.1 Data analysis

Data is analyzed, using the appropriate method chosen in light of the hypothesis generated; finally, the data is combined using a selective strategy to accept or reject the hypothesis. Numerous tables and percentages are used to illustrate descriptive data, while the different analytical tests are employed to interpret inferential data (chi-square test, multiple regression, Spearman correlation test). To exclude more accurate analysis, each analysis of hypothesis includes intersection tables. All data import operations were performed and tested in SPSS software as below.

5.1.1. descriptive statistics (case studies)

Erbil's International Maarif School began operations in 2018. 75,000 m2 of school grounds. 70 classrooms are available can accommodate 1200 students. ISC-Erbil is part of the SABIS School Network, which includes schools from 15 countries. can accommodate 2,500 students. Erbil's Cambridge capital International School opened its doors in 2010. 52,000 m2 of school grounds, 55 classrooms are available can accommodate 1000 students. see figure 2.



Figure 2. bird eye view of different case studies (source school website)

Three private mixed international high schools in Iraq, Erbil city are the subjects of this study see table 2. All of the chosen schools were private ones, whose more homogeneous spatial quality made it possible to generalize more broadly and to collect more relevant information. These schools are chosen because they attempt to meet the physical and psychological needs of their students. However, the majority of public schools fail to meet these needs, making it difficult to examine students' attachment to these schools. Since gender is a key role in place attachment, all of these schools were chosen from mixed-gender schools in order to compare male and female senses of school attachment. Students with high, middle, and poor educational status compared place attachment and academic success.

Current study has concentrated on high school students since they often provide more accurate responses. Because teenagers develop more complex patterns of reasoning and a greater sense of who they are. They also become more interested in creating their own identities and forming significant attachments with people and places outside of their homes and their parents. However, 7th and 8th grade students can be stressful for many children due to new emotions, the desire to form new social ties, and a growing sense of responsibility and independence; therefore, their answer may be influenced by their emotional state and cannot be relied upon.

Table 3. Frequency of students in different schools by (gender, academic level and grade average).

				Gender											
				Female					Male						
				Academic level					Academic level						
				Grade 9		Grade 10		Grade 11		Grade 9		Grade 10		Grade 11	
				N	%	N	%	N	%	N	%	N	%	N	%
School	Chuaifat	Grade average	High	11	40.7%	12	40.0%	10	31.3%	10	43.5%	7	35.0%	7	29.2%
			Medium	10	37.0%	12	40.0%	13	40.6%	7	30.4%	8	40.0%	1	45.8%
			Low	6	22.2%	6	20.0%	9	28.1%	6	26.1%	5	25.0%	6	25.0%
	Maarif	Grade average	High	7	58.3%	8	53.3%	9	34.6%	4	33.3%	6	31.6%	9	47.4%
			Medium	4	33.3%	4	26.7%	13	50.0%	3	25.0%	8	42.1%	5	26.3%
			Low	1	8.3%	3	20.0%	4	15.4%	5	41.7%	5	26.3%	5	26.3%
	Cambri	Grade average	High	4	33.3%	5	50.0%	3	42.9%	8	33.3%	3	37.5%	2	33.3%
			Medium	4	33.3%	3	30.0%	3	42.9%	9	37.5%	3	37.5%	2	33.3%
			Low	4	33.3%	2	20.0%	1	14.3%	7	29.2%	2	25.0%	2	33.3%

5.1.2. inferential statistics (analyzing hypothesis)

1. Analysis of the first hypothesis: Students' ability to learn more effectively is enhanced when they feel a strong emotional connection to their school.

Main hypothesis analyzed how school attachment affects a student's educational efficiency. Table 4 displays the outcomes of the Chi-square test employed in this case. Educational efficiency and school attachment are highly significant, as shown. In students with high educational level, there is a lot of attachment in school, but this has dropped in low educational level students, and almost half of them don't like school or have little interest in it. Attachment is one aspect affecting educational efficiency. The sense of attachment is not the

only element determining educational outcomes, but it can be increased by providing an affective atmosphere. This boosts their school and learning interest.

Table 4. Place Attachment * Grade Average Crosstabulation

Place Attachment * Grade Average Crosstabulation						
			Grade Average			Total
			high(90-100)	medium(75-89)	low(60-74)	
Place Attachment	Low	Count	13	11	24	48
		%	4.0%	3.4%	7.4%	14.7%
	medium	Count	25	19	29	73
		%	7.7%	5.8%	8.9%	22.4%
	High	Count	87	92	26	205
		%	26.7%	28.2%	8.0%	62.9%
Total		Count	125	122	79	326
		%	38.3%	37.4%	24.2%	100.0%
Pearson Chi-Square		Value	Asymptotic Significance (2-sided)			
		42.747 ^a	.000			

2. Analysis of the second hypothesis: students who regard their school as a second home and a place where they may learn and grow have better educational efficiency.

It is clear from the data that students with lower grades do not view their school as a second home, while those with higher grades are more likely to view their institution as a welcoming and safe place as their home which increases their motivation for learning and grow. Table 4 displays the outcomes of the Chi-square test employed in this case which is highly significant.

Table 5. Grade average and Second Home Crosstabulation

Grade average and Second Home Crosstabulation					
			Second home		Total
			yes	no	
Grade Average	high(90-100)	Count	84	41	125
		%	25.8%	12.6%	38.3%
	medium(75-89)	Count	80	42	122
		%	24.5%	12.9%	37.4%
	low(60-74)	Count	21	58	79
		%	6.4%	17.8%	24.2%
Total		Count	185	141	326
		%	56.7%	43.3%	100.0%
Pearson Chi-Square		Value	Asymptotic Significance (2-sided)		
		38.724 ^a	.000		

3. Analysis of the third hypothesis: students' sense of school Attachment is strengthened when a student's educational institution successfully satisfies both their psychological (social and cognitive) and physical requirements.

The statistics clearly demonstrate that there is a strong relationship between each component and place attachment, cognitive and emotional needs have the greatest impact on place attachment, followed by social needs, which have a greater impact than physical needs. At the same time, cognitive needs and social needs are affected by physical needs. to analyses this relationship spearman's correlation is used

Table 6. relationship between place attachment within its dimensions

Place attachment relationship with physical, Social, cognitive needs						
			Place Attachment	physical needs	Social needs	cognitive needs
Spearman's rho	Place Attachment	Correlation Coefficient	1.000	.699**	.742**	.775**
		Sig. (2-tailed)	.	.000	.000	.000
	Physical needs	Correlation Coefficient	.699**	1.000	.739**	.704**
		Sig. (2-tailed)	.000	.	.000	.000
	Social needs	Correlation Coefficient	.742**	.739**	1.000	.775**
		Sig. (2-tailed)	.000	.000	.	.000
	Cognitive needs	Correlation Coefficient	.775**	.704**	.775**	1.000
		Sig. (2-tailed)	.000	.000	.000	.

Correlation is significant at the 0.01 level (2-tailed).

Students at each school have varying degrees of attachment to their school since each school may meet a portion of their physical and psychological needs. The students' different level of attachments to each school are shown in table 13 and it displays the outcomes of the Chi-square test employed in this case.

Table 7. Varying degrees of student's attachment in different school

Degrees of attachment in each school						
			school			Total
			Chuaifat	Maarif	Cambridge	
Place Attachment	Low	Count	17	10	21	48
		%	10.9%	9.7%	31.3%	14.7%
	medium	Count	28	27	18	73
		%	17.9%	26.2%	26.9%	22.4%
	High	Count	111	66	28	205
		%	71.2%	64.1%	41.8%	62.9%
Total		Count	156	103	67	326
		%	100.0%	100.0%	100.0%	100.0%
Pearson Chi-Square			Value	Asymptotic Significance (2-sided)		
			24.986 ^a	.000		

While students in Cambridge are less interested in their school, it is evident that students in Chuaifat International School are very attached to their school, with minimal difference from Maarif International School. In the following tables, in relation to the checklist that is utilized in each school, can be observed` which element affected the level of attachment that students had in these schools. Students in Cambridge International School claim that their physical needs are not

being met, which leads to issues with their social and cognitive needs as well, result in disengagement. However, students in Maarif International School and Chuaifat International School are highly satisfied with their physical needs, which is in line with the items in the checklist necessary for enhancing students' sense of school attachment. as a result, these students are more attached. In table 8. Shown the availability of each indicator in the checklist in each school.

Table 8. frequency of checklist indicators in each school

Availability of place attachment dimensions indicator								
School	Physical indicators	%	social indicators	%	cognitive indicators	%	n	%
Chuaifat	15	71.42%	9	69.23%	7	63.63%	31	68.88%
Maarif	18	85.71%	12	92.31%	5	45.45%	35	77.78%
Cambridge	7	33.33%	5	38.46%	2	18.18%	14	31.11%

4. Analysis of the fourth hypothesis: the quality of space affect attachment and evaluate more in terms of activities by males, while the evaluation of the same space gets done more in terms of social and emotional factors by females.

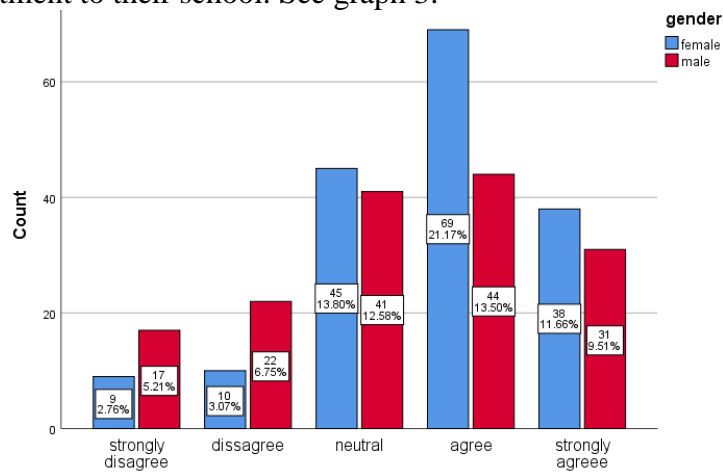
The Chi-square test was used to compare the responses of male and female students to a set of four items on a questionnaire designed to test this hypothesis. The association between place attachment and gender was initially determined using the chi square test, as shown in table 8. However gender relation and place attachment is not significant but female students have more sense of attachment to their school. Even their relation isn't significant but factors that influence their attachment and evaluations of spaces by each gender change. Thus, they will be discussed in the following tables.

Table 8. Relationship between gender and place attachment

Relationship between gender and place attachment						
			Place Attachment			
			Low	medium	High	Total
gender	female	Count	18	37	116	171
		%	5.5%	11.3%	35.6%	52.5%
	male	Count	30	36	89	155
		%	9.2%	11.0%	27.3%	47.5%
Total		Count	48	73	205	326
		%	14.7%	22.4%	62.9%	100.0%
Pearson Chi-Square			Value	Asymptotic Significance (2-sided)		
			5.798 ^a	.055		

The question (4.1.) **do you think your attachment to this school has been strengthened by the strong bonds between teachers and students, as well as between students themselves?** was posed in the questionnaire, to explore the influence of social relationships on female and male students' perspectives. The gender and social relations are significantly correlated, according to the Chi square test (value: 12.634^a, Asymptotic Significance (2-sided): 0.013).

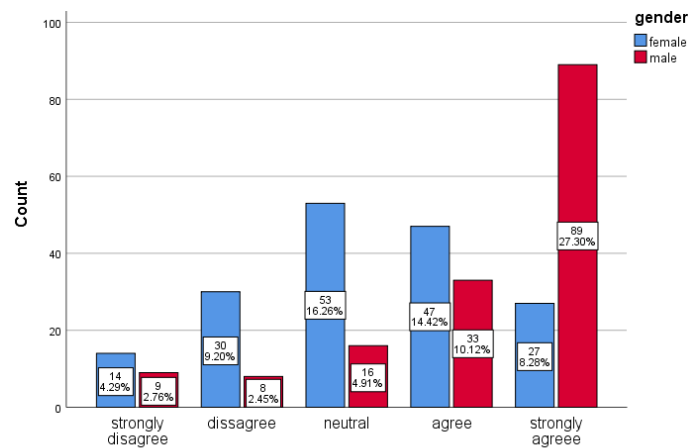
According to the data, more female students than male students feel that having strong social ties affects their commitment to their school. See graph 3.



4.1

Figure 3. show the frequency of (4.1.) sub hypothesis

- The question (4.2) **Do you think your school's extracurricular and recreational activities in a well-designed yard for different kinds of sports and activities strengthened your attachment to it?** was posed in the questionnaire, to investigate how gender roles are affected by the activities that are carried out in a certain place and to become attached with that place. The gender and activities type in a place relation are significantly correlated, according to the Chi square test (value: 68.63; Asymptotic Significance (2-sided): 0.000). The data show that boys, in comparison to girls, are more interested in a place where various activities can occur and a place that can be used for various activities and sport both during and after school hours.

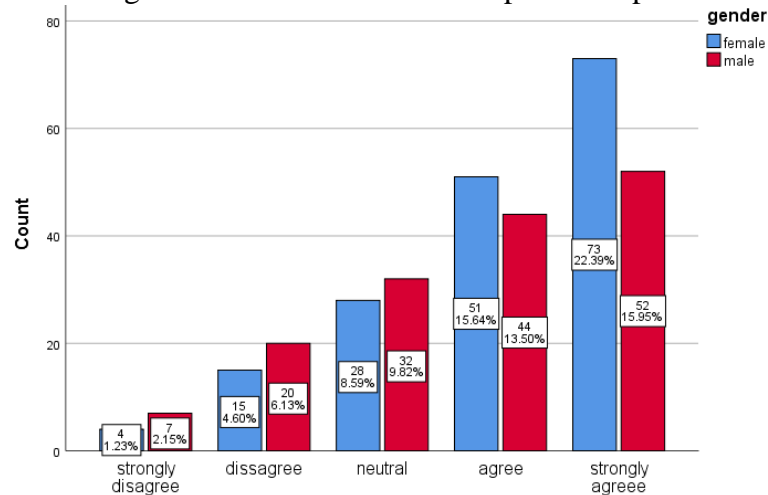


4.2

Figure 4. show the frequency of (4.2.) sub hypothesis

- The question (4.3) **Do you believe that the opportunity to contribute to the design of your classroom's interior like decors, posters and project displays gives you a sense of ownership?** was posed in the questionnaire, to investigate which gender tend to express her/his feeling and identity to the classroom more. The gender and participating in class design relation are not significantly correlated, according to the Pearson Chi square test

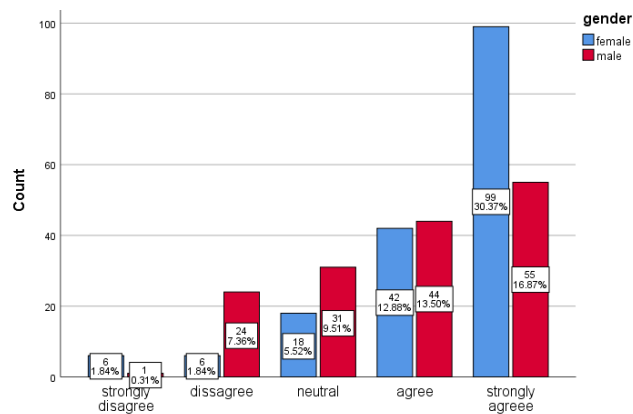
(value: 68.63' Asymptotic Significance (2-sided): 0.000). However, data shows that female students are more likely to decorate their classrooms, expressing their feelings through the use of posters and making it look much like their own personal space. see figure 5.



4.3

Figure 5. show the frequency of (4.3.) sub hypothesis

- The question (4.4) **Do you think if there's a cozy space and offshoots outside the classroom to study or perform personal activities of students would make you happier and more attached to your school?** was posed in the questionnaire, to investigate genders relation with personal spaces in the school. Their relations are significantly correlated, according to the Chi square test (value: 29.724' Asymptotic Significance (2-sided): 0.000).. According to the data presented in figure 6, female students have a higher tendency to have a personal space than male students do. This is likely due to the fact that female students are more likely to experience emotional exhaustion than male students, used for brain storming.



4.4

Figure 6. show the frequency of (4.4.) sub hypothesis

6. Conclusion

The school is one of the social places that play a crucial role in people's lives. On the other hand, school-aged children are in a formative period of their lives; therefore, fostering a sense of attachment in them can influence some aspects of their identities. Additionally, it was discovered that a student's attachment has a direct impact on how effectively they learn. Students who have

a close emotional connection to their school and view it as their second home feel safer and more secure, which increases their motivation to learn and improves educational effectiveness. Thus, to give this sense of school attachment, it is required to assemble the necessary traits to achieve it. The environment's ability to meet physical, social, cognitive, and emotional demands is taken into account as a factor in reaching this goal with 27 sub variables mentioned in this research in details. Additionally, there is no statistically significant correlation between students' attachment and gender; however, there are gender-specific differences in the factors that influence attachment and the way each gender perceives space. So, architects should consider both genders' unique demands while designing schools in order to help students strengthen their sense of attachment.

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