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Spatial Preferences in Educational Environments: Insights into Seating Choices and Influences

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Abstract

The exploration of truth reveals a belief in multiple truths influenced by individual perspectives, shaped by cultural background, age, gender, and location. The concept of one universal truth is challenged, except in scenarios where facts are undeniably proven, such as in scientific observations. The researcher's role is seen as inherently biased, evolving over time into an active participant in their studies. This worldview aligns with constructivism, which posits that knowledge and opinions are constructed by individuals and groups rather than being an absolute reality.

This research inquiry delves into the factors influencing where people choose to sit in a room, questioning the underlying rationale behind these decisions. The study proposes using scenarios with class room layouts to understand preferences, linking them to factors like background, age, gender, and location. The goal is to uncover trends that explain comfort choices, potentially improving architectural design and making individuals more conscious of their spatial decisions. The study aims to reveal both practical insights for design and a deeper understanding of human behavior in relation to space.

Research Question

How do a person's conscious and subconscious factors, including environmental psychology, seating choices, feng shui, and identity in architecture, influence their location preferences, directionality upon entering a space, and repetitive habitation of specific areas, particularly in settings like classrooms?

Overview

Classroom seating choices are shaped subconsciously, with an emphasis on educational settings. It is crucial to comprehend how environmental elements like comfort, safety, and risk affect people's seating decisions. Personality traits and individual differences are more important than studies that generalize seating preferences based on gender.

Important studies are emphasized, such as the territoriality study, which shows that extra space and the safety of personal things have a big influence on seating preferences. Citing research by Herzog, Miller, and Stamps, discussing contextual factors like mystery and perceived risk impact comfort levels and sitting preferences.

There are notable knowledge gaps in the field, and it is proposed that integrating findings from various studies on seating preferences, safety, and spatial preferences could result in better-designed environments.

Literature Review

Environmental preference is a topic that affects every person throughout their daily activities. Regardless of preconceived ideas, the conscious and subconscious play major roles in how and why a person behaves a certain way in a space. These decisions are generally not discussed, which is why I believe it is crucial to understand why people gravitate towards certain environments and what makes them feel comfortable there. By studying these subconscious decisions, architects and psychologists will be able to better understand how to create a perfect environment for certain groups of people. Within this topic, I am particularly interested in seating selection in a space. Why does a student choose to sit closer to the front or back of a classroom? Do exit routes have an effect on user selection? Which spatial factors create a space of comfort for its inhabitants, and how can they be used to improve uncomfortable spaces? Most of the literature available discusses a variety of related but not perfectly applicable topics. Articles range from specific seating arrangements and studies of the classroom to general spatial perceptions and preferences. Some of the articles also investigate personality traits and ethnicities and their relation to environmental preference.

Classroom Environment

The most relevant and important articles related to environmental preference directly address seating preference in the classroom environment. Several of the writings discuss the effect of a student’s distance from their instructor in relation to the grades the student received. In college classroom ecology, the relation of the sex of the student to classroom performance and seating preference is examined. The authors, Brooks and Rebeta, look at the preference of seating for each gender. In this case, the studies found that women are more likely to sit closer to the front of the classroom and tend to receive higher grades because of their attentiveness. Men, however, sit near the back and are more likely to skip classes. This article however posed to be slightly gender biased because this generalization cannot be true in every scenario. There are many people of each gender who have a range of attentiveness. This characteristic varies widely for many different reasons. Work ethic has to do with an individual’s personality rather than their gender **(Brooks, 1991: 305–313)**. The most helpful and interesting article about seating preference was Territoriality seat

preferences in different types of classroom arrangements. This article used an easily understood floor plan to map out different seating configurations. Each seat in the configuration was numbered, and participants were asked to choose the seats they would prefer to use. For each scenario, students gravitated towards similar popular seats and were asked why they made that selection. This method of research combines quantitative and qualitative data methods in a cohesive way to make the research collection easily understood. By looking at the floor plan and glancing at the preferred seating choices, one can easily understand why students prefer certain spaces. Many of the students mentioned having extra leg room or space to keep their purses safely stored. The article suggested that territoriality plays a major role in preferred seating and will affect where a student sits once returning to that space **(Kaya, 2007: 859–876)**. This would be the ideal way to conduct a survey of seating preferences. Information can be systematically observed and gathered, which can then be expanded by questioning the rationale of each person after they are seated. Noting ethnicity, gender, age, and some background information would also be helpful in fully understanding the reasoning behind a person's actions.

Environmental Factors in Seating Preferences

Throughout this research on the topic of environmental preference in design, architecture, and seating selection, several themes and keywords have stood out. A large number of articles related to environmental preference write about danger, coherence, mystery, and perceived safety in a space. Although these keywords are not directly related to a user's preference for a seating arrangement, factors such as danger and mystery still affect the inhabitant's comfort level and possibly their seating selection. For example, in the article The Role of Mystery in Perceived Danger and Environmental Preference, the authors, Herzog and Miller, examine only outdoor pathways. The study is a good example of qualitative research because of the straightforward questions the researchers ask. Questions such as "How likely is it that you would be harmed in this environment?" and "Does it appear that if you entered more deeply into the environment, you would learn more?" Questioning in this manner will help a researcher or architect understand why a person feels threatened and which environmental factors to change to increase comfort levels. In this way, seating preference can also be determined based on perceived safety and comfort within a room's designated seating **(Herzog, 1998: 429)**. Another article that discusses mystery is written by Arthur Stamps, which explains the sense of occlusion and mystery created by the lighting in a space. Entropy and environmental mystery look at the direct correlation between user preference, lighting, and the effect it has on the user's comfort **(Stamps, 2007: 691)**. The article by Herzog and Miller does an excellent job of asking quality qualitative questions, but it lacks relevance to interior environmental preference. The writing by Stamps asks more basic questions about the space and not about danger or the rationale behind a visitor's safety and comfort.

Conclusion

Overall, the research process has left a few gaps in the literature. The article about territoriality touches on many of the main topics and research methods needed to create a seating preference study. Although environmental studies are lacking in number, combining several of the research topics into one study would prove most beneficial. Combining safety, perceived fear, and seating selection can explain why people

avoid certain areas within a space. Also, categorizing gender preferences and looking at a participant's background will provide crucial insight into how architects can design universally comfortable, non-threatening spaces for everyone.

Research Methodology

Q. How do a person's subconscious decisions play a role in determining their seating preference?

Method 1

Questionnaire/ Survey

1. Creating a survey with general seating preference questions for an auditorium setting.
2. Observing where students sit.
3. Marking the locations of the participants.

Method 2

Survey with floor plan

1. Creating several floor plans simulating different seating arrangements.
2. All seat options will be numbered for easy selection.
3. Asking each participant to select their top five seating choices.
4. A short answer to why they picked those seats
5. Comparing quantitatively and qualitatively the most popular locations and reasons

Method 3

Survey with floor plan

1. Creating a floor plan with certain zones of the room highlighted.
2. Asking each participant to rate each zone from one to five.
3. Rank zones of the room based on preference
4. Compare reasons why each zone is preferred.

Analysis

The research method that deemed most suitable was a survey. The survey would be best administered in two types: a questionnaire and a graphic. Overall, a questionnaire would be best for understanding why a participant selected a particular location in a room. This could be used in a situation where the participants are in the process of selecting a seat or have just selected a seat in reality. The second method, the graphic survey, would employ a floor plan for theoretical seating scenarios. This method can and will be used in conjunction with the questionnaire in order to gauge popular seating locations and why participants chose those spots.

Pilot Test 1

1. Classroom observation with a follow-up survey
2. Sources
    - Field Observation Tactics: (Gold, R.L. 1958). Roles in Sociological Field Observations. Social Forces, 36(3), 217-223. This method is used by simply observing a human situation and recording important details. Playing the role of observer-as-participant who observes the situation, then have a brief interaction with the participant afterwards. Only a floor plan is needed for this type of observation, and the analysis will be immediate based on where each person sat.
    - Survey Methods: Herzog, T. R., & Miller, E. J. (1998). The Role of Mystery in Perceived Danger and Environmental Preference. Environment and Behavior, 30, 429. Herzog uses a survey to ask people about their comfort level in a space. The questions are qualitative and can be collected to form an analysis of each space. This will show the amount of comfort in all of the observed spaces. This information can be used in combination with the observed seating preference to understand the rationale behind the selected seat.

3. For the first tactic, the method will involve a two-part system. The first part will collect quantitative data, and the second part will collect qualitative data based on the quantitative data collected. A university-sized classroom will be used for observation, and a floor plan to mark the observation. A survey with qualitative questions will then be used once all of the students are seated in the classroom. 75-100 students would be the ideal test pool for a survey and observation. Therefore, the pilot test will be taken by 5-10 students.

4. The first pilot test will entail visiting an architecture lecture and observing where several people sit throughout the room. Students will be selected from a variety of spaces within the room and marked where they choose to sit on the floor plan of that room. After they are seated, a survey will be distributed asking questions regarding their selection. The survey will include a variety of qualitative questions regarding their seating preference, with a section asking for personal information such as age, gender, and ethnicity.

5. The analyzed classes will be ARCH 576 or ARCH 233. A survey will be distributed to the observed students afterwards, asking about their seating selection.

Sample Questionnaire

The following questions were created for a pilot test for ARCH 576.

- ***Why did you choose this seat in the classroom?***

- ***Did the distance to the professor affect your selection? Why?***

- ***Why did you choose to sit on this side of the classroom? Do you have a reason to prefer the right or left side?***

- ***Do you usually sit in this seat when you come to class? How would you react if someone was sitting in this spot instead?***

- ***Where do you tend to sit in other classrooms? (Example: towards the back, on the right side.)***

- ***How and why does your seating preference differ between other classrooms? Why?***

Pilot Test 2

1. Survey with seating layout in a classroom floor plan with qualitative questions
2. Sources
    - Floor Plan Survey: Kaya, N., & Burgess, B. (2007). Territoriality of seat preferences in different types of classroom arrangements. Environment and Behavior, 39(6), 859–876. All this method requires are several seating arrangements displayed in a floor plan format. Each seating arrangement should have all of the seats numbered so the survey takers can mark the numbers they prefer. This method would be analyzed quantitatively, in which all the data would be gathered into a single chart for each seating arrangement to determine the most preferred seats in each scenario.
    - Survey Methods: Herzog, T. R., & Miller, E. J. (1998). The Role of Mystery in Perceived Danger and Environmental Preference. Environment and Behavior, 30, 429. Similar to many of my sources, Herzog uses a survey to ask people about their comfort level in a space. The questions are qualitative and can be collected to form an analysis of each space. This will show the amount of comfort in all of the observed spaces. This information will be used in combination with the observed seating preference to understand the rationale behind the selected seat.

3. This method will use multiple floor plans with different seating layouts to gauge participant seating preferences. The floor plan method will allow all the participants to choose their most preferred locations and mark them on the plan. Data from this method will be quantitative in nature, which is why a secondary survey will be added. The questionnaire will ask about the user's reasoning

behind their selection. Why that area of the classroom? How they think their personal space will be in their chosen spot, etc. There are many articles and examples of research tactics that describe how to perform qualitative surveys. The pilot test will be taken by 10-15 students. The floor plans will be analyzed by making a chart per plan to establish the most desired seating locations. That information will be used to convey the popularity of the floor plan itself. Once this is done, A comparison of the information from the qualitative survey to the seats selected will be conducted. This should give many reasons why a certain spot is more sought-after than another.

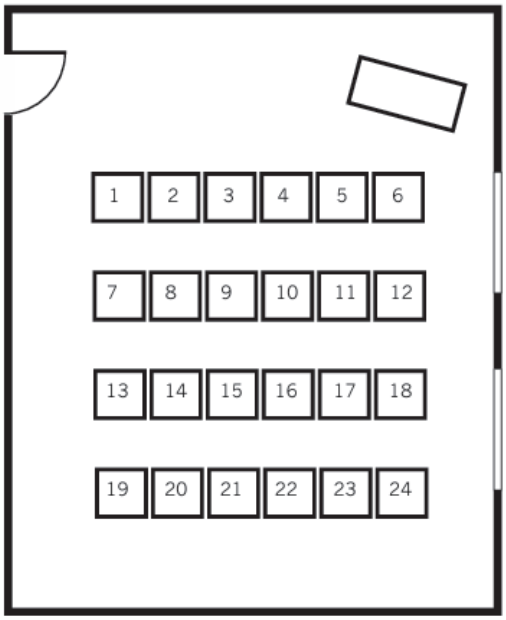
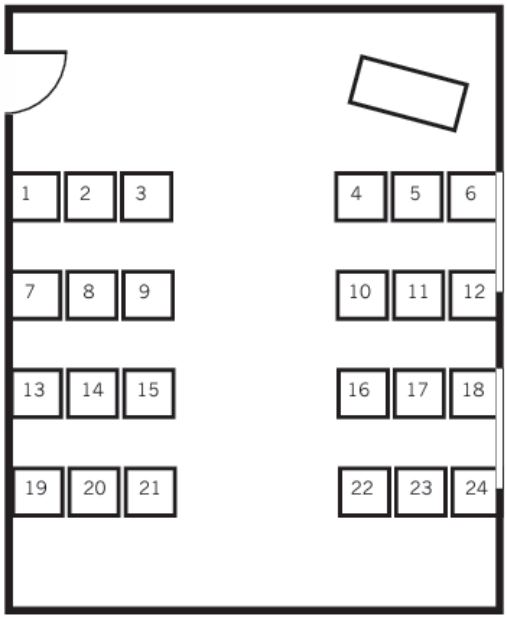
4. For the second pilot test, a survey will be distributed to a variety of ages and classes. In the second part of the survey, an area for age, gender, and ethnicity will be included, which can also be analyzed quantitatively in the floor plans. By adding this information, it will be easy to determine if certain age groups, genders, or ethnicities tend to prefer certain spots. This additional information could also prove all participants prefer certain locations regardless of background. After analyzing, a comparison of the results from the first quantitative floor plan survey with the results of the second qualitative survey will be done to understand why people chose the seats they selected. The combination of these two methods will determine the reasons behind the most desired seating preferences.

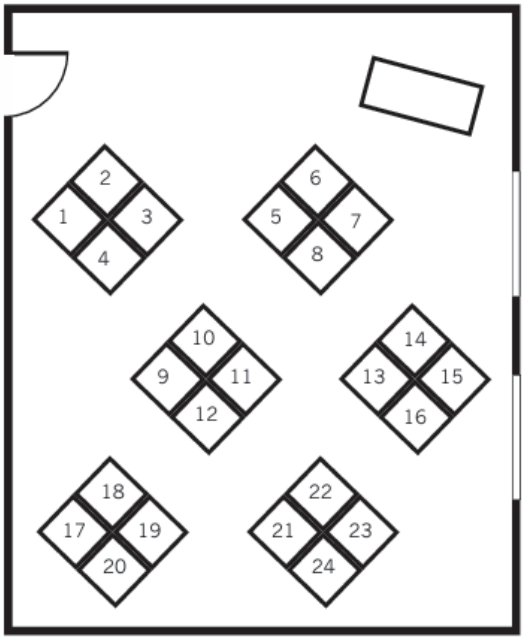
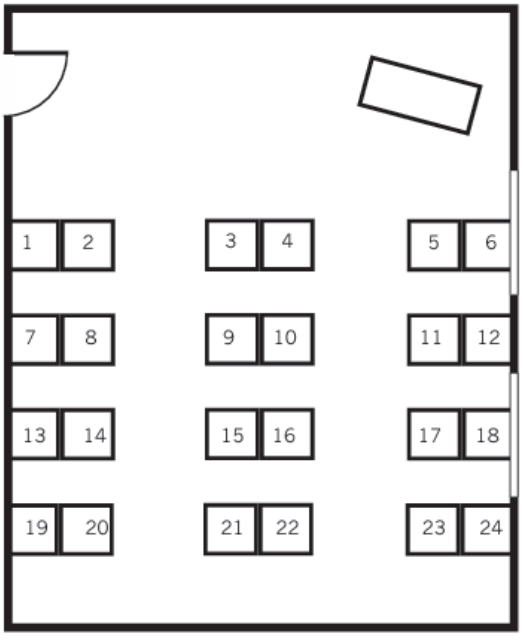
5. The survey will have two parts: one part floor plan and one part questionnaire. Later, the survey will be distributed to the peers in the studio ARCH 233.

Sample Questionnaire

The following questions were created for a pilot test for ARCH 576. Please answer as thoroughly as possible.

Age:	Gender:	Ethnicity:

	
List your five most preferred seats in order from most to least preferred.	List your five most preferred seats in order from most to least preferred.
Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?	Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?

List your five most preferred seats in order from most to least preferred.	List your five most preferred seats in order from most to least preferred.
Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?	Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?

Conclusion

Pilot Test 1:

1. The results of the first pilot test were not as clear as hoped. A set of questions were created, which were distributed to several students in ARCH 233. It seemed that many of the students did not think about where they chose to sit or why they gravitated towards a certain area of a room. Most of the answers received were vague and unhelpful. The majority of students sat wherever their friends sat in a classroom and did not question the reasoning behind that location. If the method were to be changed, it's better to ask a freshman-level class on the first day of the semester. None of the students would know each other, and the majority of the class would have to determine where they would like to sit based completely on their personal preferences.

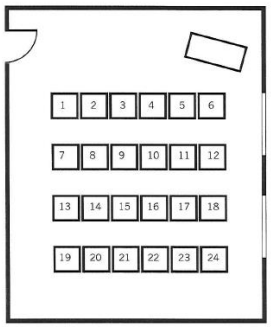
   Test Review: The first pilot test was inconclusive. It went as planned; however, the research questions provided on the survey were too vague to provoke well-thought-out answers. At the end, the students were not marked where each sat on a floor plan as the results obtained will not help with the information gathered from each survey.

Pilot Test 2:

1. The second pilot test went very well. Compared to the first round of testing, this time the answers were concise and gave a better idea of why people choose certain locations. Rather than asking why people sat in a particular seat in reality, participants responded much better to a theoretical situation. Given the choice of having to immediately choose where to sit and explain why, the answering process was easier because there was no decision-recollection involved. However, the survey might have been too long. Perhaps asking for one sentence for each scenario or listing possible answers in a multiple-choice format would help expedite the process.
2. Kaya, N., & Burgess, B. (2007). Territoriality of seat preferences in different types of classroom arrangements. Environment and Behavior, 39(6), 859–876. This article poses a same idea for this research method. The article uses several different seating scenarios to determine whether territoriality is important and where the best seats are located. The study also analyzed each of the seating arrangements by popularity and how frequently a seat was selected.

- Below are some of the pilot test results:

- **Student 1:**

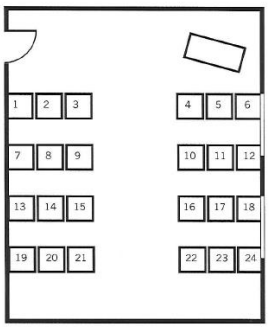


List your 5 most preferred seats in order of most to least preferred

23 20 8 14 17

Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?

I like the back row of classrooms.

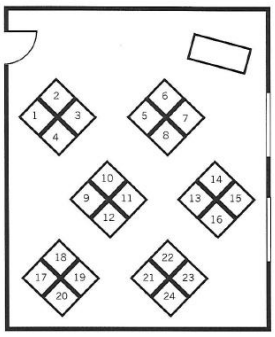


List your 5 most preferred seats in order of most to least preferred

20 14 8 17 11

Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?

Not in the aisle, but not by the wall either still not in the front wall.

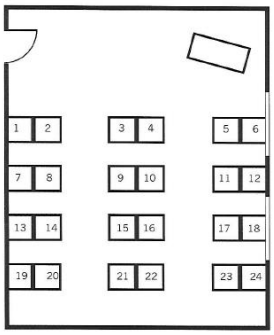


List your 5 most preferred seats in order of most to least preferred

12 9 4 1 23

Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?

Facing the board, it's always a good thing.



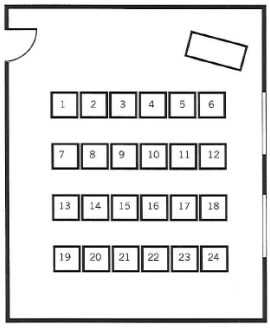
List your 5 most preferred seats in order of most to least preferred

21 15 17 14 20

Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?

They are between the back of the classroom

- **Student 2:**

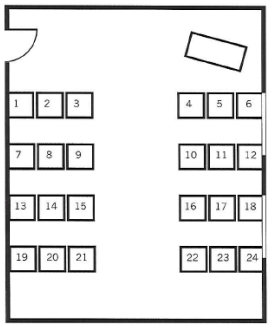


List your 5 most preferred seats in order of most to least preferred

10 9 8 7 15

Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?

second row is ideal for paying attention but also using a phone

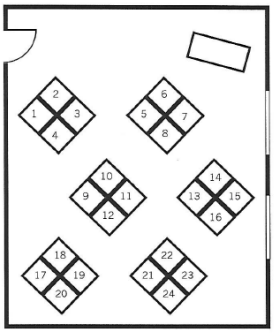


List your 5 most preferred seats in order of most to least preferred

10 11 9 8 7

Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?

Same as before

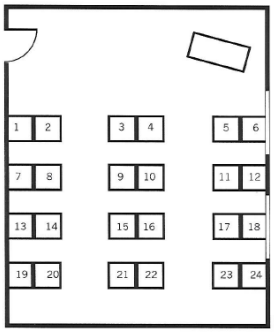


List your 5 most preferred seats in order of most to least preferred

7 12 13 16 8

Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?

I would want to face towards the professor



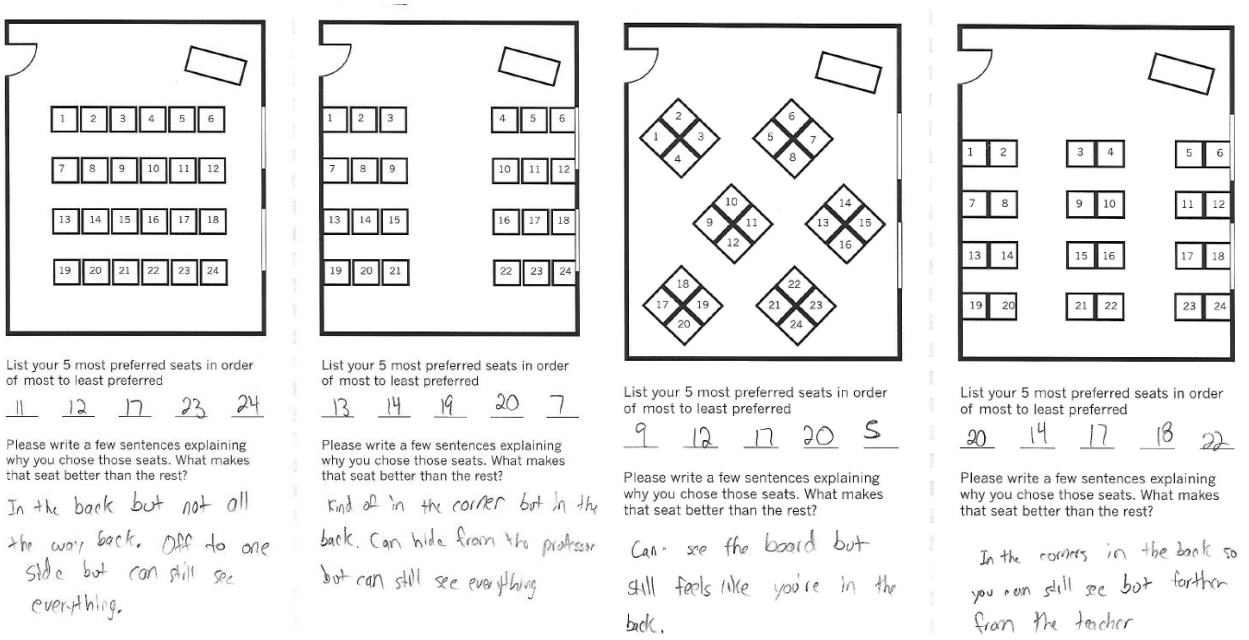
List your 5 most preferred seats in order of most to least preferred

9 16 8 3 4

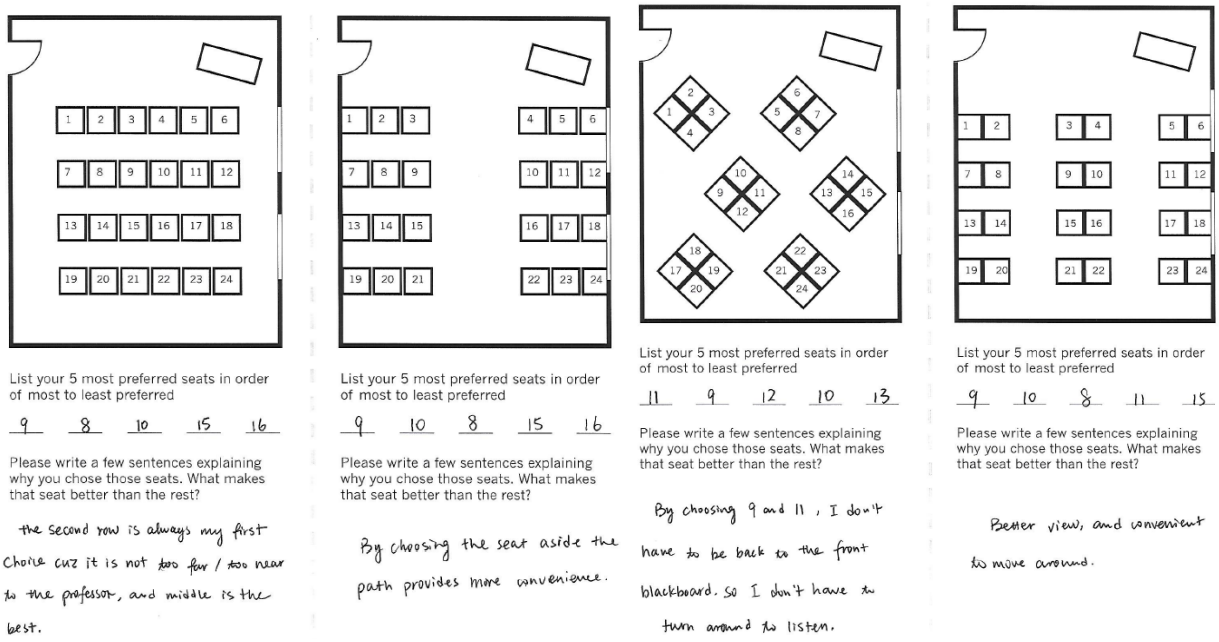
Please write a few sentences explaining why you chose those seats. What makes that seat better than the rest?

I would want front left ish

- **Student 3:**

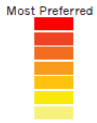


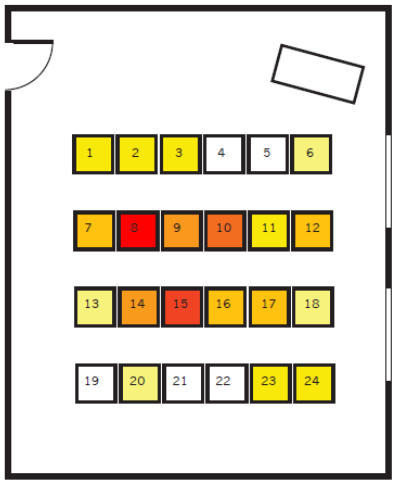
- **Student 4:**

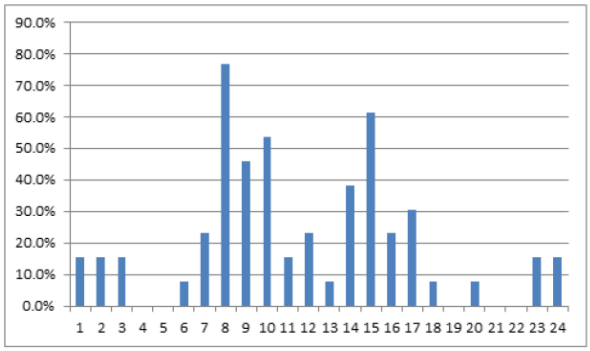


3. *Test Review:* This particular assignment was the most enjoyable part of the research. The data was entered into processing software, which allowed to calculate percentages and the total number of times a seat was selected. The numbers were then taken and mapped according to the most popular seats back on the floor plan of each scenario. The results were exciting and surprising, given that almost 70% of participants from each seating arrangement picked the same seat in their top five choices. The results are as follows:

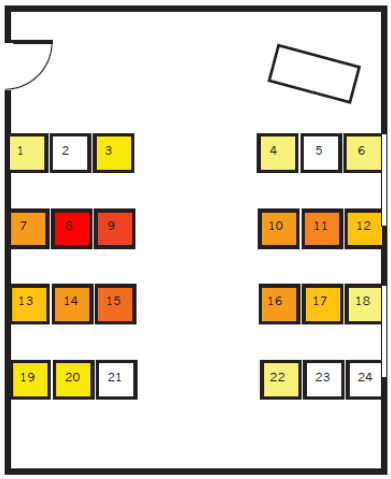
Scenario 1

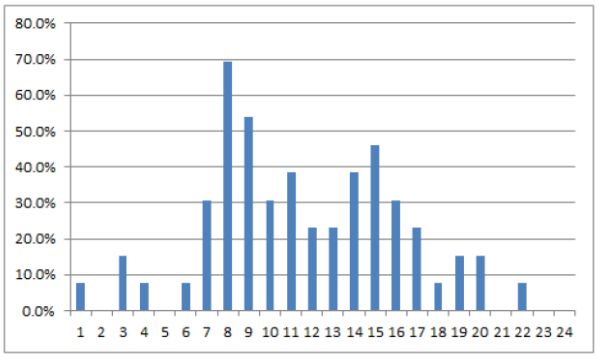




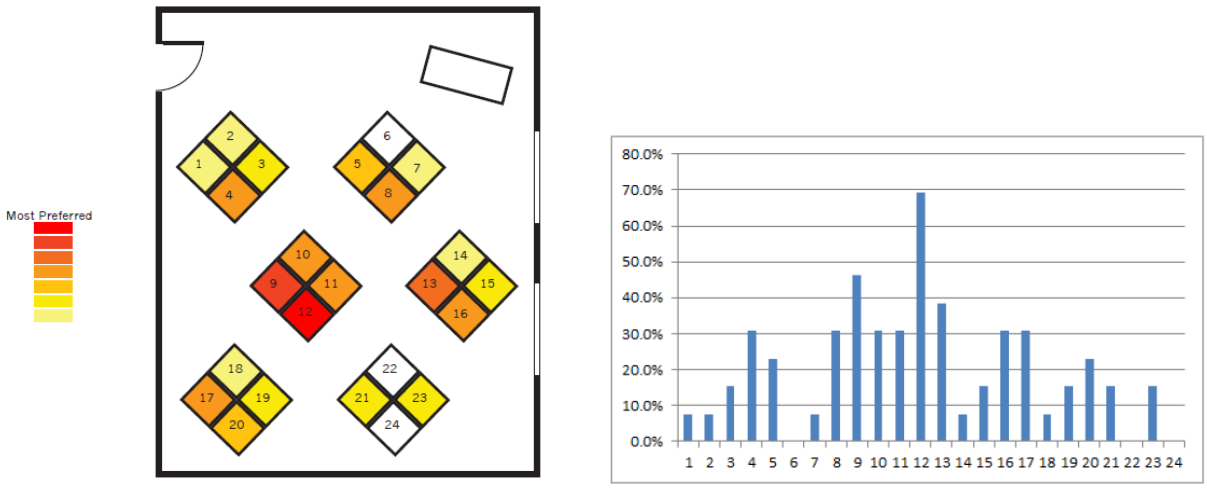


Scenario 2

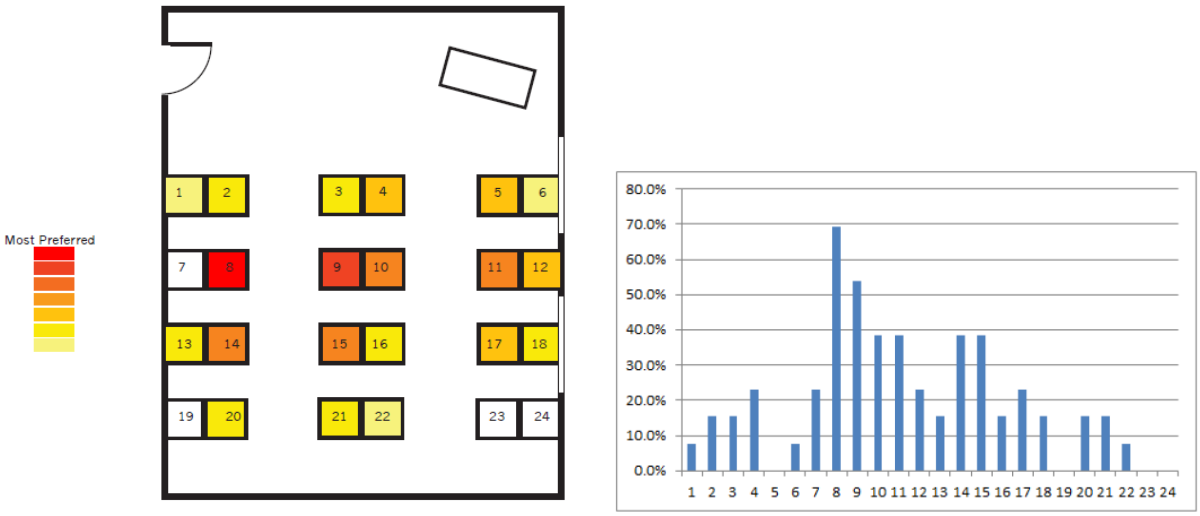




Scenario 3



Scenario 4



Overall, the goal of the research was to carry out more extensive study on seating choice than what the pilot testing allowed for. The second pilot test in particular determined that there is a definite trend in preference when given a floor plan with seating options. In all four seating scenarios, around 70% of the participants chose the same seat in their top five choices. Therefore, the floor plan survey approach can be studied and analyzed further in accordance with the environmental and psychological aspects. The studies show that people are far more consistent in their preferences than what was initially predicted.

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