

# The Role of Students' Perception of Classroom Atmospherics on Second Language Learning Performance

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## ABSTRACT

Second language learning is an important area of research in the language and linguistic domain. Previous researchers have highlighted that classroom atmospherics has a significant impact on students' learning and students' performance. However, the effect of classroom atmospherics (broadly categorized under three heads---Technology, Location, and Aesthetics) on second language learning performance has not been explored with much rigor. Therefore, the present study aims to explore the classroom atmospherics influence on second language learning performance. A data sample consisting of 165 students was collected and analyzed. The study results uncover certain preconditions for second language learning, especially about classroom atmospherics. The study has high implications on language acquisitions and learning, design of classroom atmospherics, environmental psychology, anthropometrics, to name a few.

## 1. Introduction

Learning is a complex psychological process. For ages, researchers were interested to study the complexity of the said psychological process from varied perspectives. Therefore, when we talk about language learning we will be handling two different complex processes on the same plane. Over the past few decades, literature has witnessed some path-breaking researches in the field of language learning/acquisition, especially, in the area of second language learning/acquisition. Similarly, parallel to the said field of language learning studies, researchers were also interested to study the different parameters/ variables, which had affected learning. Amongst those variables, classroom environment/atmospherics is one of the important ones until today. However, it is interesting to note, none of the studies in the existing literature have established a correlation between the classroom environment/atmospherics and second language learning performance. So, it will be worthwhile to explore the nature of such a relationship, if exist, and to identify the degree of correlation between classroom environment and second language learning performance.

By definition, second language learning refers to “both to the study of individuals and groups who are learning a language after learning their first one as young child, and to the process of learning that language” (Troike 2006). It is the language, which is being learned by the individual other than their native language. Literature suggests that approaches to second

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language learning have been originated from various disciplines but researchers of language studies have shown more inclination towards the three different perspectives---linguistic, psychological, and socio-cultural. It is interesting to note that take before the 1960s, the theories of second language learning have revolved around Bloomfield's Audiolingual method and Skinner's Behaviorism (S-R-R). Nevertheless, Chomsky's theory on language acquisition devices has brought a revolution in the field of language learning. His theory claims that it is an innate ability of humans to acquire and use language and gives importance to generative phonology and transformational grammar. He encompasses the linguistic approach of language study. To mention some of the important contributions, Krashen's Monitor Model has adopted a linguistic approach to formulating the respective theories of second language learning. Krashen's Monitor model theory asserts that there is a clear difference between language acquisition and language learning. The acquisition takes place at a subconscious level whereas learning at the conscious level. He firmly believes that "competence gained through learning" (Taylor 1986) acts as a Monitor to modify or check the language which is acquired. Similarly, parallel to linguistic studies, researchers have also adopted psychological frameworks namely Information Processing and Connectionism for studying second language learning. Amongst them, Clahsen's Multidimensional Model, Pienemann's Processability Theory, Bates & MacWhinney's Competition Model, and Parallel Distributed Processing are widely accepted. Social theorists have dealt with the concept of second language learning mainly from two different perspectives, namely, microsocial and macrosocial. The microsocial factor focuses on the immediate learning environment whereas the macrosocial concept is embedded in a broader cultural, social, and political setup.

## 2. Literature Review

Harnold B. Dunkel (1948) has identified some factors affecting second language learning. Amongst them, the most important ones are—the age of the learner, students' intelligence and background level, students' previous linguistic skills, habits and experiences, students' motivation, personality types, etc. Gardner (1985) has identified different variables like aptitude, personality, attitude, motivation, and parent's role for second language acquisition. Gardner's Socio-educational Model (1985) on second language acquisition proposes that "motivation to learn a second language is characterized by three aspects, the desire to learn the language, the motivational intensity to learn the language, and the affective reaction towards learning the language" (7). He refers to this complexity as Motivation for language learning. His work with Lalonde (1985) asserts that the social psychological perspective gives the best understanding of second language acquisition.

Gardner with MacIntyre (1989) has focused on the relationship between anxiety and second language learning. They assert that only foreign language anxiety and state anxiety are having a correlation with performance whereas other anxieties like test anxiety, trait anxiety, and others did not have a correlation with performance. Gardner and Masgorets' (1993, 1994) have focused on the relationship of five different variables like age, attitude, and motivation, availability of the language in the community, and second language learning.

Schimdt's (1990) research work focuses on the role of consciousness in second language learning. He firmly believes that '*subliminal language learning is impossible*' and '*noticing*' at the conscious level is required to make the process of language learning more viable. Dornyei's (1998) work on the role of motivation in second and foreign language learning claims that motivation has always had a positive influence on the rate of learning a second and foreign language. Yang and Wilson's (2006) study on second language learning supports Vygotsky's social constructivist approach to second language learning. They assert that it is true that a person acquires a second language through dialogues, which is initially instrumental. Eiko

Ushida (2005) to study its role in second language learning used Gardner and MacIntyre's framework of students' attitudes and motivation. An interesting study by Knutzen and Kennedy (2012) has proposed that a virtual environment provides an ideal setup for second language acquisition.

Researchers from the field of environmental psychology were also interested to study the impact of the classroom environment on learning in general. A study by Meyer and Turner (2002) has focused on the pivotal role of motivation and emotion on the learning of both teachers and students in the classroom setting. They have found out that teachers' affective responses are important at situational context as well as at the cognitive level to elevate a positive response to learning among the students. Holley and Steiner's (2005) study has entirely focused on the student perspectives on the classroom environment and how it had affected their individual performances. They assert that creating a 'safe space' does not refer to any physical safety rather is to create an environmentally friendly atmosphere where students feel safe to express themselves and reduce the risk of negative outcomes. Winterbottom and Wilkins's (2009) study on classroom atmospherics reveals that improper lighting in the classroom may affect the overall performance of learning as well as can cause headaches and impair visual performances. Cox's (2011) interesting study explores the fact how a student's experience of space affects his/her learning behavior. He claims that basic comfort in the classroom and the university space, audibility, and visibility in rooms are some of the major factors affecting learning in the classroom environment. An interesting study by Zheng, Gerber, and Mino (2013) has revealed that there are mainly three classroom attributes namely ambient, spatial, and technological attributes which had affected the learning and academic performance of the students. Amongst them, ambient and spatial attributes affected the students' perception the most followed by the technological attributes. Uka's (2014) study provides insight that how students' satisfaction results from their immediate physical environment and services is an indicator of the quality of higher education. She claims that social factors, which include the relationship of the student with the faculty, with the administration, and with the other students', may affect the overall students' satisfaction. Similarly, physical factors like "class size and the environment, the technology used during lectures, library and computer laboratory, Wi-Fi connections in the campus, etc" (7) affect students' overall satisfaction. The above-mentioned literature has explored the relationship between students' perception of classroom atmospherics on their second language learning and also the role of gender differences in the perception of classroom atmospherics. Thus, the present study formulates the following hypothesis:

H1: Classroom atmospherics affects the overall student's learning performance, especially, the second language learning performance.

H2: Female students' perception of classroom atmospherics is highly correlated with their second language learning performance than male students.

### **3. Methodology**

#### *3.1. Measurement Instrument*

In the current study, a questionnaire based-survey was taken up. The study was conducted taking student samples from a renowned undergraduate technical institute in India. A questionnaire (adapted from Pat 2013) consisting of 20 questions were randomly distributed to the student. A five-point Likert scale was used (1=strongly agree and 5 = strongly disagree) to acquire their perception of the relationship between classroom atmospherics and learning performance. A pilot test was done to check the reliability and the validity of the questionnaire and it was found that the Cronbach alpha of the questionnaire is 0.71 which is acceptable to carry further the data collection.

### 3.2. Sample

Respondents were randomly selected from various departments in the respective institute. As shown in Table 1, a total sample of 165 university undergraduate students was taken of which 110 were males and 55 were females. Their age varies from 16 years to 20 years. 52.5% of the students were from an urban background.

Table 1.

*Distribution Categories by Gender*

Distribution	Frequency	Percent
Male	110	66
Female	55	33
Total	165	100

A total of 167 responses were collected from the survey and after sanitization of the data  $n=162$ .

## 4. Results and Discussion

To test hypothesis 1, i.e. Classroom atmospherics affects the overall students' learning performance, especially, the second language learning performance, a quantitative (regression) analysis of the collected data was performed. Table 1 below gives the summary output of Regression Statistics and the model's reliability indices i.e. R square which is 0.609 or 60.9%.

Table 2.

*Regression Statistics*

Multiple R	0.780548214
R Square	0.609255514
Adjusted R Square	0.602313138
Standard Error	1.115765961
Observations	166

Table 3.

*Annova Table*

	Coefficients	Standard Error	t Stat	P-value	Alternate Hypothesis
Intercept	7.793	0.552	14.123	4.91E-30	
Aesthetics	0.240	0.183	1.560	0.03	Accept
Technology	0.195	0.121	1.630	0.02	Accept
Location	0.092	0.179	0.516	0.61	Reject

### 4.1. Interpretation of Annova Table and Coefficients

- The p-value of the location construct is more than 0.05 i.e. Hypothesis is rejected which signifies that the location of the classroom does not have any significant impact on students learning performance.
- The p-value of the technology and the aesthetic constructs is less than 0.05 i.e. Hypothesis is accepted which signifies that the technology of the classroom and the overall aesthetic beauty does have a significant impact on students learning performance.

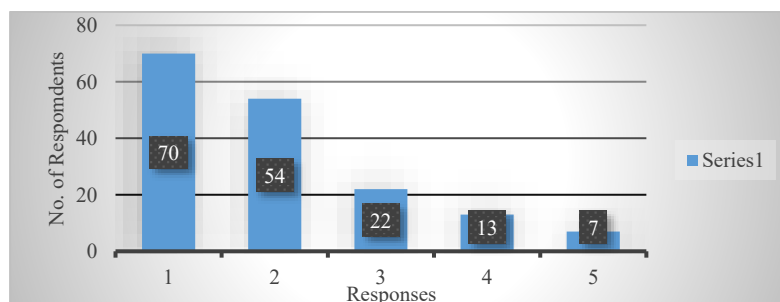


Figure 1. Perception about Technology Attributes

For the technology perception analysis, it was found that 75% of the participants stated that technology-aided classroom plays a crucial role in forming their attitude towards the course. Moreover, they have also stated that a technology-equipped classroom is more important than the overall class design. Participants who have stated that a technology-equipped classroom is more important than overall class design has shown better learning performance with regard to their second language learning performance throughout their one-year course of study at their university.

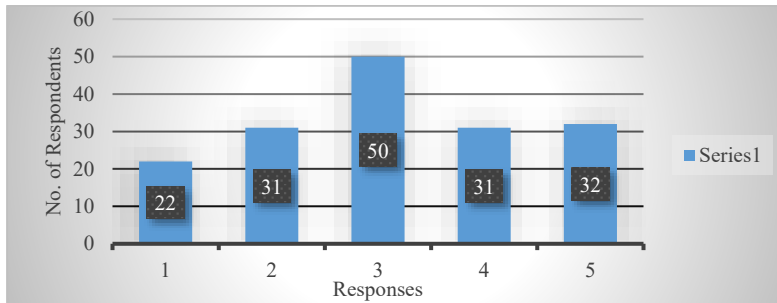
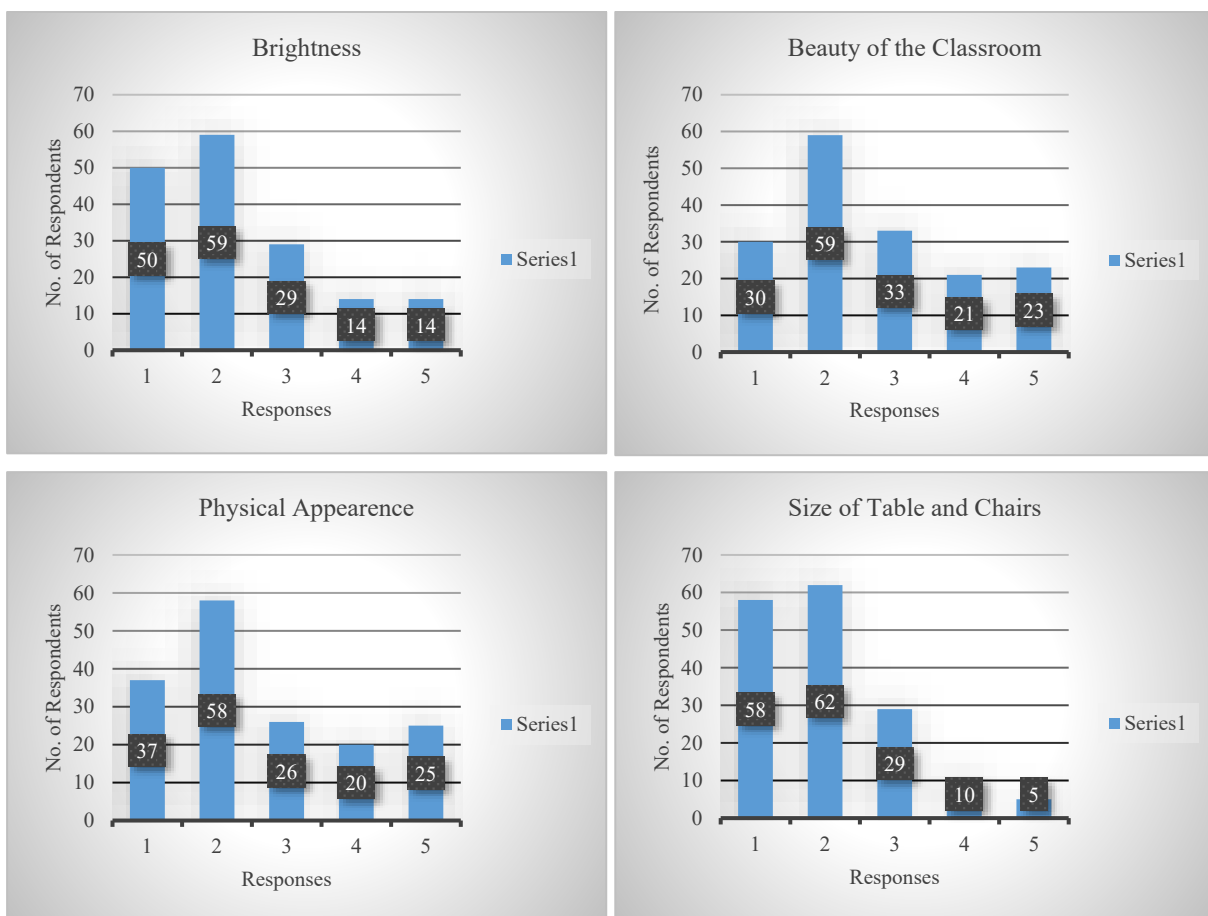


Figure 2. Perception about Location Attributes

For the location of the classroom perception analysis, it was found that 32% of the participants stated that location does affects their learning performance wherein 30% of the participants neither agree nor disagree with the same. However, it was found that 38% of the participants learning performance was not affected by the location of the classroom.



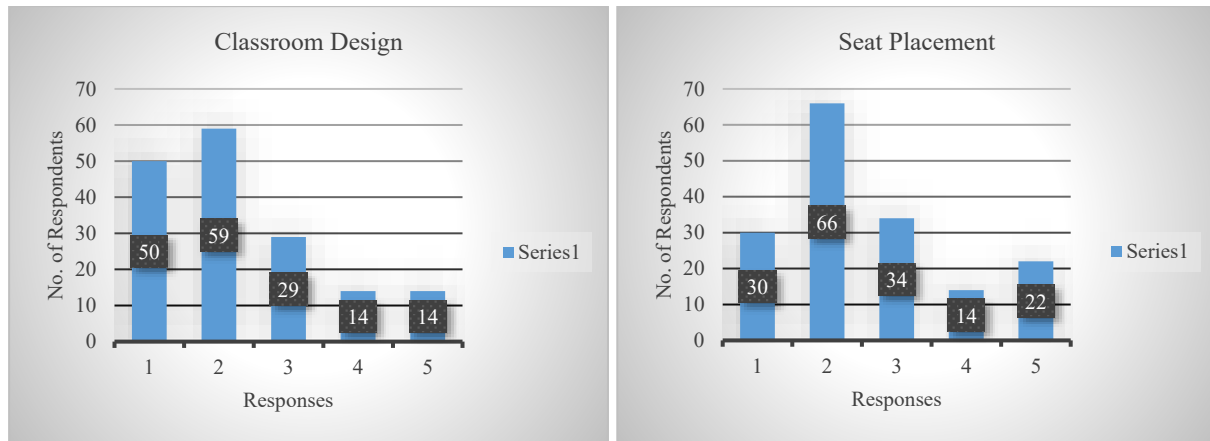


Figure 3. Perception about Aesthetic Attributes(brightness, beauty, physical appearance, size of table and chairs and design)

For the aesthetic perception analysis, it was found that aesthetics of the classroom (with regard to the brightness, beauty, physical appearance, size of table and chairs, classroom design, and seat placement) doesn't significantly affects the participants learning performance. After an analysis of the performance of the students throughout their one-year course of study at their university in the second language learning, it was found that participants who have stated that aesthetic beauty of the classroom is important to have shown significantly better performance than those who have stated that aesthetic beauty of the classroom doesn't affect their general perception of classroom atmospherics. Moreover, the p-value of the technology and the aesthetic constructs is less than 0.05 i.e Hypothesis is accepted which signifies that the technology of the classroom and the overall aesthetic beauty does have a significant impact on students learning performance. The p-value of the location construct is more than 0.05 i.e Hypothesis is rejected which signifies that the location of the classroom does not have any significant impact on students learning performance. Thus, we can say that Hypothesis 1 was supported in terms of technology and aesthetic attributes but not in the case of location attributes. Therefore, Hypothesis 1 was partially borne out.

To test hypothesis 2, a *t*-test was conducted on the scores of perceived classroom atmospherics and their performance in second language learning for both male and female students. There were no significant differences found in the male and female perceived atmospheric conditions and performance levels,  $t(162) = 1.21, p = .22$ . Therefore, Hypothesis 2 was not supported.

## 5. Conclusion

A comprehensive analysis of students' perception of classroom atmospherics of different classroom attributes mainly technology, location, and aesthetics, and the impact of those classrooms and non-classroom attributes on students' second language learning performance was conducted. It was found after a thorough regression analysis of their performance in second language learning throughout their one year of study at the university level that the main attributes namely technology and aesthetic attributes affect their performance in language learning. However, for the location classroom attribute, there are no significant results. Moreover, there were no significant differences found in the male and female perceived atmospheric conditions and their second language learning performance level as well. With reference to some of the previous studies, the present study results also highlighted the importance of students' perception of aesthetic attributes like Yang et al (2006) study where they have found that students' perception of their learning environment highly relied on spatial attributes and ambient attributes.



## 6. Limitations of the Study

The present study has taken into consideration only three attributes of classroom atmospherics namely Technology, Location, and Aesthetics. However, there are numerous aspects that need to be explored in future research. For e.g. Students' perception of teaching practices, instructor's characteristics, preparedness, etc. to study the impact of those variables on learning performance.

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