Relationship Between Perceived Learning Environments and Academic Achievement of Students at Undergraduate Level : A Critical Evaluation

A Synopsis of the PhD thesis

Submitted by

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Chapter Plan

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Chapter – I: Context of the Study

Introduction

The academic performance of undergraduate students is influenced by many factors, including their personal abilities and the learning environment they experience. In higher education, the perceived learning environment (PLE); which includes its physical setting, social aspects, and teaching methods; plays an important role in shaping students' motivation, engagement, and overall success. While older educational models focused mainly on institutional resources and teacher-led instruction, recent studies highlight the importance of how students personally perceive and interpret their learning environment. The link between PLEs and academic achievement among undergraduates can considered to be a dynamic factor that connects theory with evidence to guide better institutional practices.

The idea of PLEs has developed significantly since Moos (1979) first described learning environments in terms of physical, social, and instructional factors. Later tools, such as the Course Experience Questionnaire (CEQ) (Ramsden, 1991), Dundee Ready Education Environment Measure (DREEM) (Roff et al., 1997), and Clinical Learning Environment Scale (CLES) (Dunn & Burnett, 1995), have been used to measure these perceptions, showing that they can predict academic performance. However, there is still limited understanding of how specific aspects of PLE; such as teacher support for autonomy, peer cooperation, or institutional assistance that may affect achievement differently for various student groups.

The researcher deeply analyzed ecological and cognitive theories, including Moos's ecological model (Moos, 1979), Biggs's 3P (Presage–Process–Product) framework (Biggs, 1987), and Tinto's integration theory (Tinto, 1975). These theories suggested that the learning environment influences how much cognitive and emotional effort students put into their studies. Using these perspectives, the study focuses on the major objectives of the study.

At a time when higher education faces challenges such as retaining students and ensuring fairness, this analysis offers practical, evidence-based suggestions for aligning students' perceptions of their environment with better academic outcomes, thereby helping institutions design learning spaces and policies that foster student success and equity.

The next sections provide historical background, theoretical foundations, and research evidence, leading to a structured framework.

Background of the study

The learning environment in higher education has changed greatly over the past few decades, moving from traditional teacher-centered methods to more active, student-focused approaches. This shift reflects a growing understanding that student success is not only the result of personal ability or effort, but also depends heavily on the setting in which learning takes place. The perceived learning environment (PLE); which includes physical spaces, social relationships, teaching practices, and institutional support; has become an important factor influencing student motivation, engagement, and academic performance.

- **Overview of the Learning Environment in Higher Education**

Today's universities are under increasing pressure to create environments that promote both academic achievement and overall student development. In the past, higher education largely focused on delivering content through lectures. However, current teaching strategies stress active participation, collaboration, and the development of critical thinking. This change recognizes that students learn more effectively when they are actively involved in the process rather than just receiving information. The physical aspects of the campus; such as classroom layout, technology, and study areas; work together with social and psychological factors to form a complete learning system. Research shows that students' views of these elements affect their learning style, persistence, and academic results.

Earlier models of learning environments, developed in the late 20th century, concentrated mainly on physical and social aspects that could be easily measured. Over time, these ideas expanded to include emotional and psychological dimensions, as it became clear that students' personal experiences shape the impact of their surroundings. With the development of measurement tools, researchers could study these perceptions more closely, leading to deeper insights into how different elements of the environment work together.

Modern approaches to PLEs focus on student independence, relevant learning content, and opportunities for active and meaningful involvement. While traditional measures

might have looked only at student satisfaction with facilities or teacher availability, current perspectives also consider how learning spaces encourage self-directed learning, inclusivity, and the growth of skills such as self-reflection. This development reflects a broader shift toward student-centered education and recognition of diverse learning needs.

Research on learning environments draws from several important theories. Ecological models show the complex relationship between students and their learning contexts, suggesting that the best learning outcomes happen when the environment matches students' goals and needs. Cognitive theories explain how conditions in the learning environment affect thinking processes, motivation, and how knowledge is formed. Integration models stress that a sense of belonging—both academically and socially—is vital for student success. Together, these theories help give a fuller picture of how PLEs connect to academic achievement.

Today's universities face challenges such as growing student diversity, the integration of digital technologies, and pressure to prove the value of their teaching. This makes it especially important to understand PLEs so educators can build fair and supportive environments. The increased use of hybrid and online learning has also added new dimensions to how students experience education, blending physical and virtual spaces in unique ways.

This research comes at an important time for higher education. By studying how undergraduates see their learning environment and how those perceptions relate to their academic success, the study aims to offer practical guidance for improving curricula, campus design, and student support systems; helping students succeed across varied settings and backgrounds.

Rationale of the Study

Present study is driven by several urgent issues in modern higher education. Although institutions have invested heavily in infrastructure and curriculum upgrades, many still find it hard to achieve consistent academic success among undergraduates. This research addresses the need to understand how students' personal experiences and perceptions of their learning environment influence measurable academic results, especially in diverse and resource-limited contexts like India.

Universities often judge education quality by objective measures such as faculty-student ratios or library resources. However, these do not always match real learning outcomes. This gap suggests that what matters most is how students perceive their environment, not just its physical features. For example, two students in the same classroom may feel entirely different about its learning climate depending on teaching style, peer interaction, or personal expectations. This study closely examines these differences in perception and their link to academic performance, offering a clearer picture of what truly makes a learning environment effective.

Educational reforms like India's National Education Policy 2020 call for learner-focused approaches but offer little practical detail on implementation. By studying how specific aspects of the environment; such as autonomy-supportive teaching and collaborative spaces; affect achievement, this research provides evidence-based strategies to turn policy into real practice. The timing is crucial, as universities now serve more first-generation and non-traditional learners, making it essential to know how to design inclusive spaces that meet varied needs.

Research on learning environments is often spread across different fields—such as educational psychology, architecture, and institutional management—without much connection between them. This study brings these perspectives together in a multidimensional framework that links physical spaces, teaching methods, and social experiences to academic results. Such a combined approach is necessary for institutions aiming for overall improvement instead of isolated fixes.

India faces unique higher education challenges: overcrowded classrooms, inconsistent quality between institutions, and wide social and economic gaps. These shape how students view their environment in ways that differ from Western contexts. Yet, most existing PLE research comes from developed nations. This study addresses that gap by focusing on resource-limited settings, where students may value certain factors; like faculty access; over high-tech facilities. The results will help Indian institutions focus on the most impactful areas for improvement, even with limited budgets.

Unlike studies based only on surveys, this research uses both quantitative data (achievement scores) and qualitative insights (interviews). This approach explores not only whether certain perceptions relate to outcomes but also why. For example, if

fairness in assessment is found important, interviews can clarify whether students define fairness as transparency, flexibility, or the presence of helpful feedback. This level of detail supports tailored solutions.

The research offers practical benefits for all stakeholders:-

- Students can recognise barriers in their environment and seek targeted help.
- Faculty get proof to support changes in teaching, such as using project-based work instead of only high-stakes exams.
- Administrators can make better funding decisions, such as redesigning classrooms rather than making surface-level upgrades.
- Policymakers gain new benchmarks for assessing institutions, going beyond traditional measures like placement numbers.

The rationale for this research lies in its potential to reshape how universities think about and improve learning environments. By seeing students as active interpreters of their surroundings rather than passive recipients, the study shifts the focus from "what we provide" to "how it is actually experienced." This perspective offers a practical, evidence-driven way to boost academic success; especially important for developing higher education systems like India's.

Operational Definitions

In research, an operational definition is a clear explanation of how a concept or variable will be measured and used in the study. It takes abstract ideas and translates them into specific, measurable steps, so that everyone understands them in the same way when collecting and analyzing data.

In this study, the researcher has provided several operational definitions to make the concepts easier to apply and measure as –

i. Perceived Learning Environment:- Perceived Learning Environment pertains to student's perception of their learning environment which was measured by The Dundee Ready Education Environment Measure (DREEM), a trusted questionnaire with 50 questions that helps understand how students in health-related courses feel about their learning environment. It covers five main areas as learning, teachers, academic self-

confidence, atmosphere, and social life with peers and students rate each item on a 5-point scale. It also consisted 9 negative items, The total score is out of 200, which shows whether the environment is very poor (0–50), has problems (51–100), generally positive (101–150), or excellent (151–200).

ii. Academic Achievement of Undergraduate Students:- Academic achievement of undergraduate students in this study is defined as their performance in a three-year standard degree program. The final marks from the 2nd, 4th, and 6th semesters were used as indicators of their academic achievement.

iii. Family Income – In this study, annual family income is defined as the total household income earned over the course of a year. The researcher categorized it into three income brackets: up to ₹500,000 as the low-income category, ₹500,001 to ₹10,00,000 as the moderate-income category, and above ₹10,00,000 as the high-income category.

Chapter – II: Problem of the Study

Review of Literature

Abraham et al. (2008) in their study **"Students' perceptions of learning environment in an Indian medical school"** aimed to compare the perceptions of the learning environment between first-year and clinical phase students at Melaka Manipal Medical College (MMMC) (Manipal Campus) and to examine gender-based differences in these perceptions. This study employed the Dundee Ready Education Environment Measure (DREEM) inventory, a validated instrument for assessing the quality of educational environments. The DREEM survey was administered to 118 first-year and 108 clinical phase undergraduate medical students, with their responses analyzed using a nonparametric statistical method. Findings indicated that first-year students reported higher satisfaction with the learning environment, reflected in their higher DREEM scores, compared to their clinical phase counterparts. Analysis of gender differences showed minimal variation in perceptions. Overall, while both student groups viewed the learning environment positively, the study identified specific areas of concern. These findings informed the adoption of targeted remedial actions to enhance the educational environment at the medical school.

Adas & Shmais (2011) in their work **"Students' perceptions towards blended learning environment using the OCC"** explored how students at An-Najah National University feel about blended learning (BL) in their English language courses, which combines traditional teaching methods with an online platform called the Online Course Container (OCC). OCC provides both live and self-paced activities to help students improve their English skills. The study included 92 students in a general English course, who shared their thoughts on the blended approach through a questionnaire that covered the learning process, ease of use, and content. Interviews were also held for additional feedback. Overall, students had a positive attitude toward this blended learning setup, appreciating the convenience and support of online tools. The findings also showed that students had strong internet and tech skills, likely due to good internet access, making them open to using technology in their language learning journey.

Ahmed et al. (2018) in their study **"Students' perception of the learning environment and its relation to their study year and performance in Sudan"** aimed to assess students' perceptions of the learning environment and examine differences in these perceptions based on academic performance and year of study. A descriptive cross-sectional study was conducted with 638 students from the second, sixth, and tenth semesters at the Faculty of Medicine, Gezira University, Sudan. The Arabic-translated Dundee Ready Education Environment Measure (DREEM) was used, with study year and academic performance as the main variables. Descriptive statistics and one-way analysis of variance with post hoc Tukey-Kramer tests were applied for data analysis. The overall DREEM score was 122/200 (SD=16.6), indicating a generally positive perception of the learning environment. Significant differences were found between students from different study years, with semester 6 students showing the highest mean score. Additionally, high-achieving students had a significantly better perception (mean = 126) compared to low-achieving students (mean = 102). The study suggests that students' perceptions vary by academic performance and study year, warranting further investigation into these differences.

Akkoyunlu & Soylu (2008) conducted a study on **"A study of student's perceptions in a blended learning environment based on different learning styles."** This study explored how students' learning styles influence their views on blended learning, which combines online and face-to-face classes. Researchers worked with 34 students from Hacettepe University in Turkey, using a questionnaire to gather feedback on aspects like how easy the online tools were to use, the effectiveness of evaluations, and their experiences in face-to-face settings. They also used Kolb's Learning Style Inventory to understand each student's preferred way of learning. The results showed that students' opinions varied based on their learning styles, with face-to-face interactions rated most favorably across the board. Interestingly, there was no difference in academic performance based on learning style, indicating that blended learning seems to accommodate different preferences equally well. These insights suggest that while students may favor certain aspects, blended learning offers a flexible environment that can suit a range of learning styles.

Al-Kabbaa et al. (2012) in their study **"Perception of the learning environment by students in a new medical school in Saudi Arabia: Areas of concern"** explored how medical students at King Fahad Medical City in Saudi Arabia feel about their learning environment, which plays a crucial role in shaping their education and future as physicians. Using the DREEM questionnaire, a tool that assesses educational settings, researchers surveyed 237 students from the 2009/2010 academic year. The results indicated moderate dissatisfaction, with an overall score of 111.5 out of 200. No aspects were rated as excellent, and several areas-like the learning atmosphere, teaching methods, ability to focus, and attitudes of teachers and students-were flagged as needing attention. These findings suggest clear opportunities for improvement, and the study recommends implementing changes and re-evaluating with the DREEM tool to track progress in creating a more supportive learning environment.

Statement of the Problem

The researcher reviewed a range of literature addressing the causes, presence, and solutions related to learning environments and academic achievement among various sample groups. This led to a deeper investigation into how learning environments and academic achievement can be measured using different parameters. However, the researcher found that no study significantly highlighted the relationship between the learning environment and academic achievement of students using actual data. While numerous theoretical frameworks have suggested the existence of learning environments and academic achievement, particularly in developing nations, empirical studies are still scarce. Previous research has extensively examined students and teachers at the secondary and higher secondary school levels, but the area of undergraduate education remains largely unexplored. This gap is particularly relevant today, given the increasing demands on students and the evolving needs of the modern higher education system. Therefore, the researcher focused on exploring the learning environments and academic achievement of undergraduate students. A notable knowledge gap was identified between the theoretical understanding and practical application of perceived learning environments and academic achievement at the undergraduate level in West Bengal. Drawing from the researcher contextual analysis and review of existing literature, the following research questions were formulated for the present study: -

1) How do undergraduate level students of West Bengal perceive their learning environment?
2) What is the relationship between undergraduate students' perceptions of their learning environment and their academic achievement in West Bengal?
3) How do different demographic factors result in variation on perceived learning environment of undergraduate level students at West Bengal?

In search of the appropriate answers of aforesaid research questions, the researcher framed and stated the problem of the study as - "**RELATIONSHIP BETWEEN PERCEIVED LEARNING ENVIRONMENTS AND ACADEMIC ACHIEVEMENT OF STUDENTS AT UNDERGRADUATE LEVEL: A CRITICAL EVALUATION"**

Delimitations of the Study

Current study was delimited to followings: -

a) The present study was delimited to only thirteen districts of West Bengal i.e., Purba Bardhhaman, Paschim Bardhhaman, Hooghly, Howrah, Kolkata, Bankura, Purba Medinipur, Paschim Medinipur, Jhargram, North 24 PGS., South 24 PGS., Nadia and Murshidabad.

b) The study was delimited to 1,436 undergraduate students from various districts.

c) The study was delimited to only 2nd, 4th and 6th semester UG level students.

d) The study was delimited to undergraduate students from 26 colleges and universities in West Bengal.

e) Demographic characteristics were delimited to gender, habitation, types of institution, streams of study, present studying class, annual family income and academic achievement only.

Objectives of the Study

Researcher generated objectives based on the research questions and study delimitations. The objectives are as follows: -

i. To understand undergraduate students' perceptions of their learning environment in West Bengal.

ii. To assess the levels of perceived learning environments among undergraduate students in West Bengal.

iii. To examine the correlation between student's perceived learning environments and their academic achievement.

iv. To investigate the variation of various independent indicators viz; gender, habitation, types of institution, streams of study, present studying class, and annual family income of undergraduate students on their perception of learning environments including subscales of it.

v. To examine whether students' perceptions of learning environments significantly predict their academic achievement.

Hypotheses of the Study

Hypotheses were formulated based on stated objectives, as follows: -

$H_0$1: There is no significant difference in perception of students on their learning environment with respect to their gender.

$H_0$2: There is no significant difference in perception of students on their learning environment with respect to their habitation.

$H_0$3: There is no significant difference in perception of students on their learning environment with respect to their types of institution.

$H_0$4: There is no significant difference in perception of students on their learning environment with respect to their streams of study.

$H_0$5: There is no significant difference in perception of students on their learning environment with respect to their present studying class.

$H_0$6: There is no significant difference in perception of students on their learning environment with respect to their annual family income.

$H_0$7: There is no significant correlation between perception of students on their learning environment and their academic achievement.

$H_0$8: Students' perceptions of the learning environment do not significantly predict their academic achievement.

Chapter – III: Method and Procedure

The present study sought to explore the perceptions of undergraduate students in West Bengal regarding their learning environment. To ensure the research method was accurately represented according to the objectives, a descriptive survey research method was employed in this present study. Thirteen districts of the state i.e, Purba Bardhhaman, Paschim Bardhhaman, Hooghly, Howrah, Kolkata, Bankura, Purba Medinipur, Paschim Medinipur, Jhargram, North 24 Parganas, South 24 Parganas, Nadia, and Murshidabad were included in the sampling process. A purposive sampling method was used to select the institutions, while a simple random sampling technique was employed to select the student participants.

The study population comprised undergraduate students from these districts, with a total of 1,436 students participating in the research.

Description of Variables

In this study following independent and dependent variables were taken –

- **Explanatory Variables –**

1) **Gender –** There are two levels considered, i.e. Male and Female.
2) **Habitation –** There are two levels considered, i.e. Urban and Rural.
3) **Types of Institution –** There are two levels considered, i.e. Government and Private.
4) **Streams of study –** There are three categories considered, i.e. Arts, Science and Commerce.
5) **Present studying Class –** There are three categories considered, i.e. 2nd Semester, 4th Semester and 6th Semester.
6) **Annual Family Income -** There are three categories considered, i.e. Low Income, Moderate Income and High Income.

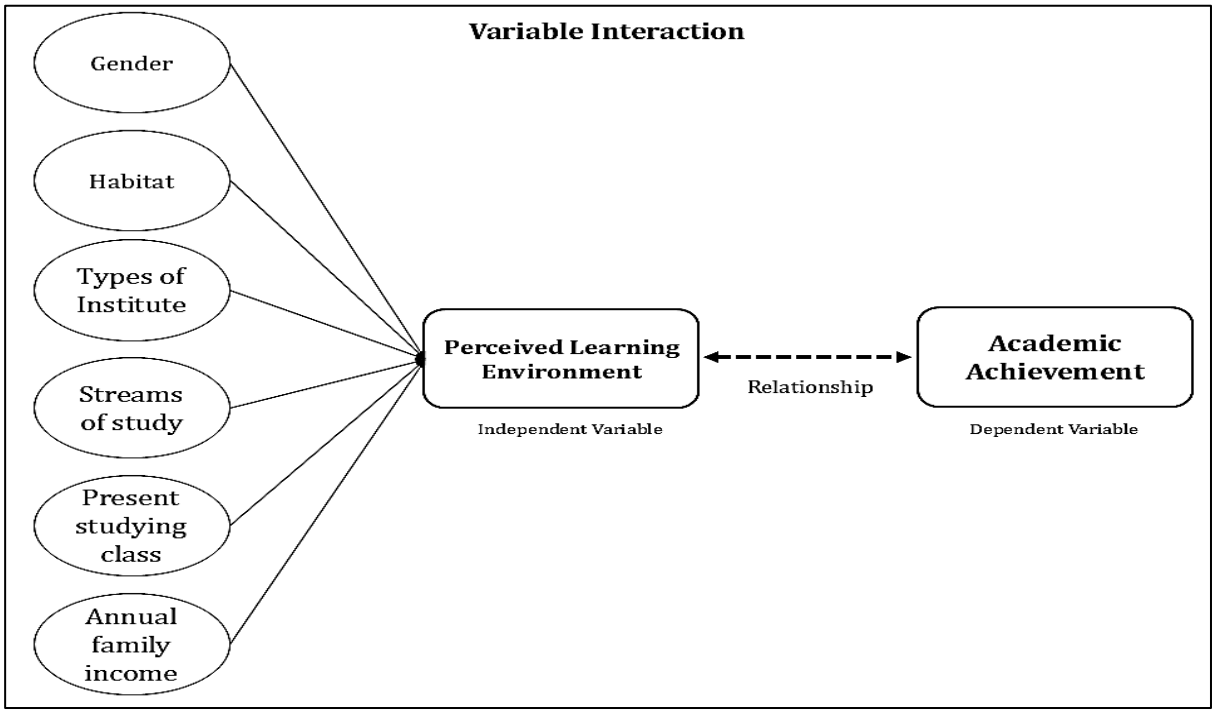
- **Independent Variable** – In this present study independent variable are follows-

1) **Perceived Learning Environment**

- **Dependent Variable** – In this present study dependent variable are follows-

2) **Academic Achievement**

Interaction between variables



Tools Used for Data Collection

In the current study, the primary instruments used to collect data were a survey on students' perceptions of the learning environment at the undergraduate level and students' 2nd, 4th and 6th semester marks, which measure academic achievement with a basic information schedule was employed.

Instrument 1: Dundee Ready Education Environment Measure (DREEM)

The Dundee Ready Education Environment Measure (DREEM), developed and validated by Roff, S. et al. in 1997, is a tool designed to assess the educational environment in medical schools and other academic settings. It is a 50-items questionnaire that evaluates students' perceptions of various aspects of their learning environment i.e., Students' Perception of Learning, Students' Perception of Teachers, Students' academic self-perceptions, Students' perception of atmosphere, Students' social self-perceptions. However, 9 of the 50 items (numbers 4, 8, 9, 17, 25, 35, 39, 48, and 50) are negatively worded and are scored in reverse. The minimum possible score on the scale is 50, while the maximum possible score is 250.

Showing Subscales and Number of Items

Sl No.	SUBSCALES	Number of Items
1.	Students' Perception of Learning	1, 7, 13, 16, 20, 22, 24, 25, 38, 44, 47, 48
2.	Students' Perception of Teachers	2, 6, 8, 9, 18, 29, 32, 37, 39, 40, 50
3.	Students' academic self-perceptions	5, 10, 21, 26, 31, 41, 45
4.	Students' perception of atmosphere	11, 12, 17, 23, 30, 33, 34, 35, 36, 42, 43, 49
5.	Students' social self-perceptions	3, 4, 14, 15, 19, 28, 46
TOTAL		**50**

Scoring norms

Showing scoring norms of the scale

Responses	Interpretation
0	Strongly Disagree
1	Disagree
2	Uncertain
3	Agree
4	Strongly Agree

* Negative items are scored in reverse

Show an approximate guide to interpreting the overall score according to DREEM-

Overall Perception of Learning Environment	
Score Range	**Interpretation**
0 – 50	Very Poor
51 – 100	Plenty of problems
101 – 150	More positive than negative
151 - 200	Excellent

Show an approximate guide to interpreting the score according to Students' Perception of Learning-

Students' Perception of Learning	
Score Range	**Interpretation**
0 – 12	Very Poor
13 – 24	Teaching is viewed negatively
25 – 36	A more positive perception
37 – 48	Teaching highly thought of

Show an approximate guide to interpreting the score according to Students' Perception of Teachers-

Students' Perception of Teachers	
Score Range	**Interpretation**
0 – 11	Abysmal
12 – 22	In need of some retraining
23 – 33	Moving in the right direction
34 – 44	Model Teachers

Show an approximate guide to interpreting the score according to Students' Academic Self-Perceptions-

Students' Academic Self-Perceptions	
Score Range	**Interpretation**
0 – 8	Feelings of total failure
9 – 16	Many negative aspects
17 – 24	Feeling more on the positive side
25 – 32	Confident

Show an approximate guide to interpreting the score according to Students' Perception of Atmosphere-

Students' Perception of Atmosphere	
Score Range	**Interpretation**
0 – 12	A terrible environment
13 – 24	There are many issues needing change
25 – 36	A more positive atmosphere
37 – 48	A good feeling overall

Show an approximate guide to interpreting the score according to Students' Social Self-Perceptions-

Students' Social Self-Perceptions	
Score Range	**Interpretation**
0 – 7	Miserable
8 – 14	Not a nice place
15 – 21	Not too bad
22 – 28	Very good socially

Reliability and Validity

In the current study, a pilot study was conducted by the researcher. The internal consistency of the Dundee Ready Education Environment Measure (DREEM) was assessed using a sample of 250 participants. Since the original English version of DREEM was translated into Bengali for this study, the researcher ensured the maintenance of content, concurrent, and face validity with the assistance of their supervisor. Before final data collection, the reliability of the scale was also checked by the researcher. The following table presents the internal consistency of the data in the current study.

Showing reliability of the DREEM scale

DREEM	Cronbach's Alpha
PILOT STUDY (250)	0.898
FINAL (1436)	0.901

Instrument 2: Basic Information Schedule

A schedule for collecting essential information about the students was prepared and included with the main instrument. This schedule gathered data on students' gender, habitation, types of institution, streams of study, present studying class, and annual family income. In accordance with ethical research guidelines, no personal identification information, such as names, was collected in the schedule.

Procedure

This section provides a detailed explanation of the steps taken to administer the test instruments for data collection, followed by the process of filtering, organizing, and analyzing the results.

Data Collection

During the visit to higher education institutions, the researcher approached the principal or teacher in charge to explain the study's objectives and methods. The researcher clarified the confidentiality terms regarding the information and data provided. An authorization letter from the supervisor, on behalf of the Department of Education at Jadavpur University, was also submitted to obtain the necessary data.

After receiving approval from the college and university administrations, the researcher began collecting data. A total of 33 colleges and universities from all thirteen districts were approached, with 26 granting permission to collect data from their students.

Once authorization was granted, the survey instruments were distributed to the participating students. There was no specific time limit for completing the surveys, and 95% of the students completed the questionnaires in approximately 35 minutes. Data collection took place exclusively on weekdays from January to May 2024.

Data Quality

A total of 1520 students completed the questionnaires. However, 84 participants either did not complete the surveys or provided incomplete information, leading to their exclusion from the dataset. Therefore, data from the remaining 1436 students were used as the sample for this study.

Data Analysis

The researcher used Microsoft Excel to organize the data and IBM SPSS v.20 for analysis, considering various variables. Descriptive statistics, such as mean and standard deviation, were used to analyze the sample characteristics. For inferential analysis, the independent sample t-test, one-way ANOVA, correlation analysis, and regression analysis were applied. These techniques helped draw conclusions about the population based on the sample data.

Normality of Data

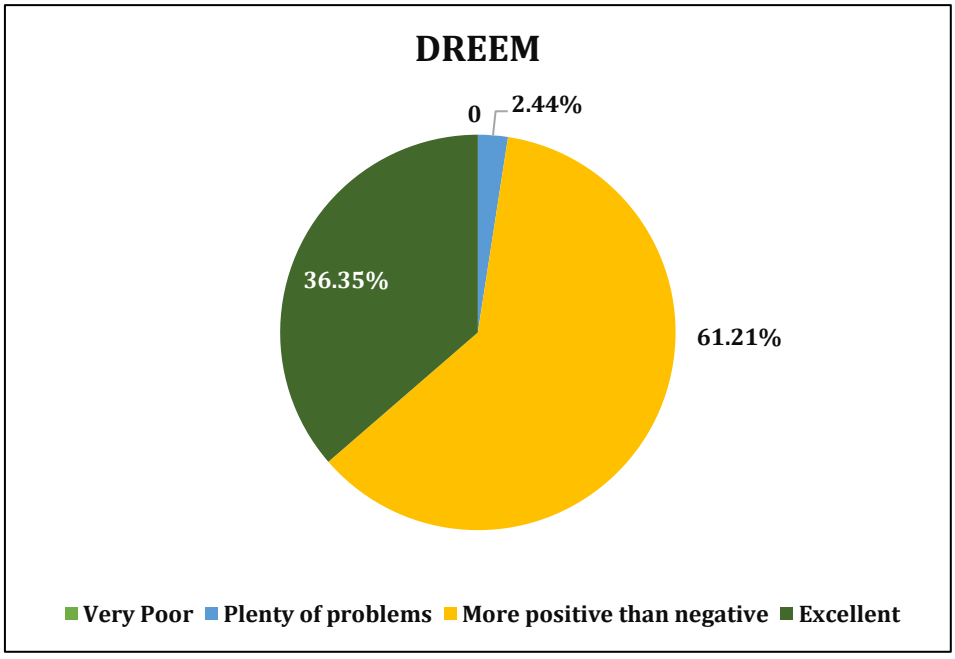
The current study used a large sample size of over 30 participants. The Shapiro-Wilk test was applied to assess the normality of the data. Due to the sample size of 1436, the Kolmogorov-Smirnov test was not applicable. The Shapiro-Wilk test revealed a significant p-value of **0.000*** for the total perceived learning environment variable, indicating that the data distribution was not normal. According to the **central limit theorem,** when the sample size exceeds 30, the distribution of sample means tends to approach normality, even if the underlying population distribution is not normal. In cases like this, where data is collected using purposive sampling from a large population, parametric tests can still be used.

Chapter – IV: Result and Interpretation

Levels of student's perception of their learning environments

Category	Percentage	Count (out of 1436)
Very Poor	0%	0
Plenty of Problems	2.44%	35
More Positive than Negative	61.21%	879
Excellent	36.35%	522

Presenting levels of student's perception of their learning environments



The table showed responses from 1,436 students. No one rated the experience as Very Poor. Only a small group; 35 students (about 2.44%; felt there were plenty of problems. The majority, 879 participants (about 61.21%), felt the experience was more positive than negative. Meanwhile, 522 participants (around 36.35%) respond PLE as excellent.

Major findings

- **Based on objective I & IV**

a. Female students tend to show significantly better perception about their learning environment than male students and rate their experiences slightly more positively in most areas, particularly in perception of teachers, atmosphere, and social self-perception. Male students score marginally higher in perception of learning and academic self-perception, though the differences are minimal.

b. Rural students showed significantly better perception about their learning environment than urban students and consistently reported more positive perceptions in all five categories as learning, teachers, academic self-perception, atmosphere, and social self-perception. The largest difference is seen in perception of atmosphere and social self-perception, suggesting rural students may feel more comfortable and socially integrated in their school environments.

c. Private institution's students showed significantly better perception about their learning environment than govt. institution's students and across all five categories, private school students report more positive perceptions than government school students. The most noticeable differences are in perception of atmosphere and social self-perception, suggesting private school environments may be perceived as more supportive socially and physically.

d. Students from science stream reported significantly better perception about their learning environment than their other counterparts and these students consistently report the highest perceptions across all five categories. Arts students tend to report the lowest scores, particularly in social self-perception and perception of atmosphere. Commerce students generally fall in the middle across most categories.

e. Students from 4th semester reported better perception about their learning environment than their other counterparts but the difference was statistically not significant. Perception of learning and Perception of teachers slightly decreases by 6th semester and Academic self-perception, perception of atmosphere, and social self-perception all improve with each academic year.

f. Students from higher income background showed better perception about their learning environment than their other counterparts but the difference was statistically not significant. Academic self-perception was marginally better in low-income group and in case of perception of teachers very little variation found and went slightly higher in moderate-income.

- **Based on objective II**

a. The overall perception of the learning environment was largely positive, with 61.21% rating it as "More Positive than Negative" and 36.35% as "Excellent," while only 2.44% reported "Plenty of Problems" and none rated it as "Very Poor."

b. Students' perception of learning was largely positive, with 63.09% (n = 906) indicating "A More Positive Perception" and 34.61% (n = 497) rating it as "Teaching Highly Thought Of," while only 2.30% (n = 33) reported that "Teaching is Viewed Negatively" and none (0%) selected "Very Poor."

c. Students' perception of teachers was generally favorable, with 68.94% (n = 990) indicating "Moving in the Right Direction" and 27.30% (n = 392) identifying them as "Model Teachers," while 3.76% (n = 54) felt they were "In Need of Some Retraining" and none (0%) rated them as "Abysmal."

d. Students' academic self-perceptions were largely positive, with 55.01% (n = 790) reporting feeling "Confident" and 41.23% (n = 592) indicating they were "Feeling More on the Positive Side," while only 3.06% (n = 44) noted "Many Negative Aspects" and 0.70% (n = 10) expressed "Feelings of Total Failure."

e. Students' perception of the atmosphere was predominantly positive, with 61.35% (n = 881) reporting "A More Positive Atmosphere" and 35.17% (n = 505) expressing "A Good Feeling Overall," while only 3.48% (n = 50) noted "There Are Many Issues Which Need Changing" and none (0%) described it as "A Terrible Environment."

f. Students' social self-perceptions were generally positive, with 53.20% (n = 764) indicating it was "Not Too Bad" and 33.91% (n = 487) describing it as "Very Good Socially,"

while 12.54% (n = 180) viewed it as "Not a Nice Place" and only 0.35% (n = 5) reported feeling "Miserable."

- **Based on Objective III & V**

a. Significant moderate positive correlation between students' perceived learning environment and their academic achievement. So, it can be said that better perception leads to higher academic achievement and vice-versa.

b. Students' perception of learning environment significantly predicts academic achievement and Approx 25% variance in academic achievement can be explained by student's perception of learning environment.

Showing hypotheses testing matrix

Hypotheses	Remarks
$H_0$1: There is no significant difference in perception of students on their learning environment with respect to their gender.	**REJECTED**
$H_0$2: There is no significant difference in perception of students on their learning environment with respect to their habitation.	**REJECTED**
$H_0$3: There is no significant difference in perception of students on their learning environment with respect to their types of institution.	**REJECTED**
$H_0$4: There is no significant difference in perception of students on their learning environment with respect to their streams of study.	**REJECTED**
$H_0$5: There is no significant difference in perception of students on their learning environment with respect to their present studying class.	**FAILED TO REJECT**
$H_0$6: There is no significant difference in perception of students on their learning environment with respect to their annual family income.	**FAILED TO REJECT**
$H_0$7: There is no significant correlation between perception of students on their learning environment and their academic achievement.	**REJECTED**
$H_0$8: Students' perceptions of the learning environment do not significantly predict their academic achievement.	**REJECTED**

Chapter – V: Discussion and Conclusion

Understanding how undergraduate students perceive their learning environment is key to shaping policies and practices that truly work for them. By also considering teachers' perspectives, policymakers and educators can gain valuable insights into what's missing and what kinds of training or support they need. Research in this area helps identify barriers that prevent early interventions, making it easier to detect and respond to issues in a timely way. Looking closely at factors like school culture, available resources, and the challenges teachers face can guide the development of more engaging and supportive classrooms. These findings not only help design effective professional development programs for teachers but also encourage collaboration between educators, mental health professionals, and other stakeholders. Such teamwork strengthens the overall support system and enriches professional knowledge, ultimately benefiting students. By making research insights more personal and actionable, we can create a learning environment that values well-being alongside academic success and ensures every student feels supported and understood.

The findings of the present study revealed that most students viewed their learning environment in a positive light, with a significant number describing their experience as very good or excellent. This observation is consistent with the results of several earlier studies (Abraham et al., 2008; Ahmed et al., 2018; Noreen et al., 2018), which also highlighted overall favourable perceptions. One possible reason for this positive outlook is that students feel genuinely supported by their teachers, classmates, and the broader campus atmosphere, which together make the learning process more enjoyable and stimulating. Moreover, the easy availability of learning resources and the presence of a healthy, encouraging academic culture seem to strengthen their confidence and enhance their satisfaction with the overall educational journey.

When looking at the role of gender, the present study shows that female students tend to have a slightly more favourable view of the learning environment than their male counterparts. This outcome is consistent with earlier research, such as the study by Sengupta et al. (2017), which also found some gender-related differences in how students perceive different aspects of their educational experience. One possible explanation is that female students often place greater value on supportive interactions, collaborative

activities, and positive classroom relationships, all of which contribute to a stronger sense of belonging. On the other hand, male students may not give the same importance to these social and relational factors, which could explain why their overall perception of the learning environment appears somewhat lower.

With respect to rural versus urban differences, the present study indicates that rural students tend to have a noticeably more positive perception of their learning environment compared to urban students. This outcome is in line with the findings of Asiyai (2014), which also reported that rural students rated certain aspects of their environment more favorably than their urban counterparts. One possible reason is that students from rural backgrounds may place greater value on the facilities, opportunities, and academic exposure provided in higher education, as these often represent a considerable improvement from their prior learning conditions. In contrast, urban students may approach the same environment with higher expectations, which can lead them to be more critical and less easily impressed.

Another key finding of the study is that science students expressed a considerably more positive perception of their learning environment compared to students from arts or commerce streams. This observation is consistent with Sengupta et al. (2017), who also reported that students in science disciplines generally rated their educational environment more favourably than those in other academic areas. One possible explanation is that science programs often provide structured learning opportunities, complemented by practical laboratory work and hands-on activities, which make the learning process more engaging and interactive. On the other hand, students in arts and commerce tend to experience more theory-based instruction, which, though valuable, may sometimes appear less dynamic or resource-rich, leading to comparatively lower levels of satisfaction.

The study also highlighted a positive link between students' perceptions of their learning environment and their academic achievement. Specifically, it showed a moderate positive correlation, which aligns with previous findings by Lizzio et al. (2002), who noted that students' views of their environment had a direct influence on both their academic performance and overall satisfaction. This result indicates that when students perceive their learning atmosphere in a favourable way, they are more likely to remain motivated, actively engaged, and achieve better outcomes. An encouraging and supportive

environment not only strengthens students' confidence but also improves their concentration, ultimately leading to higher academic success.

Some findings from the present study stand in contrast to earlier research, particularly with regard to perceptions based on income. In this study, no significant differences were observed in how students perceived the learning environment across different income groups. However, studies such as Sengupta et al. (2017) reported variations linked to socio-economic background, especially when comparing students from private and government schools. This suggests that income levels may play a more influential role in certain contexts or institutions. A possible explanation for the current results is that, in this setting, students; regardless of their financial background; are provided with equal access to institutional resources, qualified teachers, and academic opportunities. Consequently, their perceptions are likely shaped more by shared academic and social experiences than by their income status.

Another observation from the current study is that fourth-semester students reported a more favourable perception of their learning environment compared to students in higher semesters. This result contrasts somewhat with earlier studies, such as those by Pai et al. (2014) and Akkoyunlu & Soylu (2008), which indicated that students' perceptions tend to decline in later years, particularly during clinical phases, when academic stress and workload increase. One possible reason for the present finding is that fourth-semester students are still fairly new to the system, remain enthusiastic, and are positively adjusting to their academic experiences, which allows them to view their environment more positively. As students' progress to later semesters, however, greater academic demands, heavier responsibilities, and the routine familiarity of the environment may result in more critical evaluations of the same setting.

In the present study, it was observed that students' academic self-perception showed improvement as they progressed through each academic year. This finding differs from the observations of Kember & Leung (2009) and Nijhuis et al. (2005), who argued that the learning environment; particularly in problem-based learning contexts; does not always lead to direct improvements in students' self-regulation or self-perception. In contrast, the results of the current study clearly demonstrate that students' self-perception strengthens as they move forward academically, suggesting that progression

through the academic years contributes positively to how they view their own abilities and growth.

The present study revealed a very positive perception of teachers, with 68.94% of students rating them as "Moving in the Right Direction." This result shows a slightly different picture compared to Bakhshialiabad et al. (2015), where students also expressed generally positive views about their teachers but at the same time highlighted areas that still needed improvement, especially concerning the quality and effectiveness of teaching delivery.

Another important finding of the present study was that student participation appeared to be more closely linked with differences in income levels and academic streams. This outcome differs from earlier studies such as those by Zafeiriou et al. (2001) and Leow & Neo (2015), which emphasized that participation in learning activities; particularly in collaborative or activity-based settings; had a stronger influence on students' perceptions than socio-economic background**.**

Educational Implications of the Study

Current research has multiple educational implications as follows –

1. **Promoting Teacher Development and Engagement**: - As students expressed highly positive views toward their teachers, this underscores the importance of nurturing faculty capacities. Regular professional development workshops in innovative pedagogy, classroom management, and student-centered learning can help sustain and further improve students' experiences with their instructors.

2. **Creating Equitable Learning Environments**: - Since differences appeared across gender, income, and rural–urban backgrounds, it is essential to provide an inclusive environment where all students feel equally supported. Introducing mentorship programs, collaborative learning spaces, and teaching practices sensitive to diversity can help ensure that no group feels left behind.

3. **Balancing Learning Opportunities Across Disciplines**: - The stronger perceptions held by science students seem related to structured teaching, labs, and hands-on experiences. Arts and commerce students could benefit from similar

interactive methods, such as project-based tasks, case studies, and activity-oriented learning, to make their education more dynamic and engaging.

4. **Supporting Senior Students Academically and Emotionally**:- Fourth-semester students reported more favorable perceptions compared to students in later years. This suggests the need for institutions to provide added academic support and stress-management initiatives for senior students. Offering counseling services, peer support groups, and strategies to distribute workload more evenly can help reduce burnout and sustain motivation.

5. **Linking Positive Perceptions to Academic Success**: - Since students' perceptions of the learning environment were positively linked with academic performance, institutions should actively cultivate a culture of openness, encouragement, and collaboration. A more supportive climate boosts confidence, engagement, and motivation, thereby improving learning outcomes and achievement levels.

6. **Ensuring Equal Access to Resources and Opportunities**: - The absence of significant differences in perception based on income reflects the positive impact of equal access to resources and opportunities. This highlights the importance of policies that guarantee fair resource allocation, affordable learning materials, and equal academic exposure to all students, regardless of financial background.

Limitations of the study

i. Narrow Geographical Representation: - The investigation was limited to thirteen districts of West Bengal, which means that the results may not truly represent the perceptions of students from other districts, regions, or the country as a whole. This restricts the broader applicability and generalization of the findings.

ii. Constrained Sample Size and Diversity: - Although the study included 1,436 undergraduate students, this number may still not fully reflect the wide variety of student experiences across the entire state or nation. A larger and more heterogeneous sample could have offered richer and more representative insights.

iii. Focus on Specific Semesters Only:- The research examined only students in the 2nd, 4th, and 6th semesters, leaving out the perceptions of newcomers in the 1st semester as

well as final-year students. This limited focus narrows the understanding of how perceptions of the learning environment shift across the complete undergraduate span.

iv. Consideration of Limited Demographic Factors: - The study explored only a set number of demographic variables, namely gender, habitation, type of institution, stream of study, current class level, annual income, and academic achievement. Other meaningful influences—such as motivation, psychological readiness, personality traits, or parental support—were not included, which might have added greater depth to the findings.

v. One-Time Assessment Design: - The cross-sectional design of the study provides a snapshot of student perceptions at a single point in time. Consequently, it does not capture how these perceptions might change over time, or how they could be influenced by curriculum reforms, shifting academic expectations, or evolving teaching practices.

Scope for further study

Although the present study is fairly comprehensive, it is important to recognize certain limitations that accompany it. Nevertheless, in spite of these constraints, the outcomes of the research offer meaningful insights and create valuable opportunities for future investigations as -

i. Future research can go beyond the thirteen districts of West Bengal to cover other states or regions. Doing so would allow comparisons across varied socio-cultural and institutional settings, thereby strengthening the generalizability and broader relevance of the results.

ii. Subsequent studies could involve students from the beginning and final semesters, as well as those at the postgraduate level. This would provide a more complete picture of how perceptions of the learning environment change and develop throughout the entire academic journey.

iii. In contrast to the cross-sectional design of the present study, future research may employ a longitudinal framework. Tracking students' perceptions over time would help reveal patterns of change and how these are linked to academic performance, motivation, and overall satisfaction.

iv. Further investigations might also take into account additional psychological and social factors such as levels of motivation, stress management, individual learning styles,

parental influence, peer relationships, and personality traits. Including such variables could provide deeper insights into the elements shaping student perceptions.

v. Another promising avenue is to test the impact of specific interventions; such as mentorship or peer-support programs, counselling and stress-management initiatives, or innovative teaching practices; on enhancing students' perceptions of their learning environment and improving academic outcomes.