Research Report On

Efficiency and Engagement: A Study on the Effectiveness of Tutorial-Based Teaching at BDU

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Abstract

This study assesses the effectiveness of a tutorial-based teaching model at a digital university, focusing on its impact on student learning, engagement, and satisfaction. Utilizing quantitative methods, the research examines the experiences of all students across five current cohorts. Data was collected through a comprehensive survey addressing various aspects of the tutorial system, including student satisfaction, study habits, attendance, perceptions of flexibility, motivation for collaboration, and assessment techniques. The analysis aims to determine the impact of the system on academic outcomes, engagement levels, and overall student experience. Initial findings suggest a complex relationship between academic performance and the tutorial system.

In-depth statistical analysis will be used to further explore these findings and address any identified gaps. This research seeks to provide a comprehensive evaluation of the tutorial system, offering valuable recommendations for its improvement and the potential implementation of similar models in other educational settings.

Keywords: *Tutorial-based teaching, digital education, student learning, engagement, satisfaction*

1. Introduction

The merging of information technology with innovative pedagogical practices has become crucial in the contemporary landscape of higher education. In this dynamic context, Bangabandhu Sheikh Mujibur Rahman Digital University (BDU) in Bangladesh stands out with its pioneering implementation of the Tutorial-Based Classroom System (TBCS), marking a unique shift in the educational paradigm.

A cornerstone of BDU's early adaptations, the TBCS veers away from conventional teaching methods by harnessing the power of digital technologies to deliver personalized instruction. This approach aims to enhance student learning outcomes by tailoring the educational experience to individual needs and learning styles. Significantly, the TBCS fosters a distinct classroom environment compared to traditional approaches. It prioritizes personalized interactions and caters to diverse learning styles and interests, demonstrating BDU's unwavering commitment to adaptability in the face of a rapidly evolving higher education landscape.

1.1 Research Statement

This research delves into the effectiveness of the Tutorial-Based Teaching model implemented at Bangabandhu Sheikh Mujibur Rahman Digital University. Employing quantitative methodologies, the study examines the influence of this innovative approach on three key aspects of student experience: satisfaction, academic performance, and collaborative engagement. By analyzing these factors, the research seeks to provide valuable insights and recommendations for enhancing educational practices within this unique digital learning environment.

1.2 Research Questions

The study is guided by the following research questions:

1. *What is the efficacy of the Tutorial-Based Classroom System for incoming students?*
2. *How would you rate your overall academic performance in the Tutorial-Based Classroom System compared to traditional classrooms?*

1.3 Hypothesis Statement

1. Efficacy of Tutorial-Based Classroom System for Incoming Students:

Null Hypothesis (H0): There is no significant difference in the efficacy of the Tutorial-Based Classroom System for incoming students compared to traditional classrooms.

Alternative Hypothesis (H1): The Tutorial-Based Classroom System demonstrates higher efficacy for incoming students compared to traditional classrooms.

2. Overall Academic Performance in Tutorial-Based Classroom System:

Null Hypothesis (H0): There is no significant difference in the overall academic performance of students in the Tutorial-Based Classroom System compared to traditional classrooms.

Alternative Hypothesis (H1): Students' overall academic performance is significantly higher in the Tutorial-Based Classroom System compared to traditional classrooms.

1.4 Significance of the Study

This study includes BDU students throughout all four batches who participated in the Tutorial-Based Classroom System. Through a wide range of cohorts, the study aims to capture a range of perspectives, experiences and outcomes associated with this new teaching methodology. The primary objective of this research is to provide a thorough understanding of the numerical influence of the Tutorial-Based Classroom System on academic performance through the examination of quantitative data.

2. Literature Review

Tutorial-based teaching, rooted in the historical tradition of the Socratic method, has evolved over time, drawing inspiration from educational theorists such as John Dewey and Jean Piaget. Dewey emphasized student-centered learning, promoting active engagement, while Piaget underscored the importance of individualized instruction and recognized varying learning paces and methods. In the contemporary educational landscape, tutorial-based teaching integrates tradition with technology, combining personalized interaction with digital tools to create flexible learning environments and collaborative opportunities.

Smith and Johnson (2016) define tutorial-based teaching as a pedagogical approach prioritizing personalized educator-learner interactions, emphasizing tailored instruction for individual needs and learning styles. Brown and Williams (2018) explore diverse tutorial models, including problem-solving, peer-assisted, and technology-enhanced tutorials, catering to a broad spectrum of learning styles and objectives.

However, existing research lacks specificity on the efficiency of the BDU system, neglecting diverse student needs and the role of technology. The current study addresses these gaps, analyzing the BDU model's effectiveness, resource utilization, cost-effectiveness, and the impact of digital tools on learning outcomes. The research aims to inform and enhance the BDU system and guide future implementations of similar models.

The study contributes evidence-based practices and recommendations, empowering educators to adopt effective tutorial-based strategies and improve student learning experiences. Findings can inform policy decisions on resource allocation, technology integration, and digital learning initiatives, ensuring efficient resource utilization and fostering innovative educational policies. This research encourages further exploration of effective pedagogical models in diverse learning environments, advancing educational research and theory.

3. Methodology

This study examines the Tutorial-Based Classroom System (TBCS) implemented at Bangabandhu Sheikh Mujibur Rahman Digital University (BDU) in Bangladesh, seeking to assess its effectiveness through students' perspectives. Employing a quantitative research design, the study delves into the intricacies of the digital classroom experience, aiming to gain a thorough understanding of its impact on student learning and engagement. The insights of 155 students were instrumental in our research.

3.1 Research Design

The study employs a cross-sectional research design to obtain a momentary depiction of the perceptions of pupils. By selecting this design, significant comparisons can be made without disrupting the ever-changing environment of the digital classroom system.

3.2 Data Collection

By leveraging the digital platform, Google Forms functions as our instrument for gathering data, providing both convenience and accessibility. The survey, which consists of 15 meticulously designed inquiries, serves as a means to gather information on various facets of the Tutorial Based Classroom System encounter.

3.3 Sampling Technique

To ensure a fair and unbiased assessment of student experiences with the Tutorial-Based Classroom System, this study utilizes a random sampling model. This approach guarantees equal chances for every BDU undergraduate to participate, offering a truly representative voice to the entire student body.

3.4 Data Collection Tool

When using Google Forms for data collection, the data collection instrument is the survey or questionnaire that respondents fill out. In our case, the data collection instrument is the set of questions presented to the participants through the Google Forms platform. Let's break down the key components:

Data Collection Instrument: Online Survey via Google Forms

1. Introduction

Welcome Message: A brief introduction welcoming participants and explaining the purpose of the survey.

2. Demographic Information

(Name, Gender, Department, Academic Session)

3. Core Survey Questions: Questionnaire of the survey (you'll find it in Appendices)

4. Closing: Thank You Message: Expressing gratitude to participants for their time and input.

3.5 Data Collection Process

Distribution Channels: The survey URL is distributed through various channels, including university announcements, email lists, and social media groups.

Promotion: Emphasis on anonymity and confidentiality to create an environment where students feel comfortable expressing their perspectives.

Survey Accessibility: Leveraging the digital platform of Google Forms for convenience and accessibility.

Pilot Testing

Purpose: To identify and rectify any issues related to clarity, validity, and technical functionality.

Feedback Collection: Gathering feedback from a small group of participants to ensure the survey's effectiveness.

3.6 Ethical Considerations

The foundation of our ethical framework is informed consent, which guarantees that participants voluntarily participate in the study while possessing a comprehensive comprehension of its objectives. Data security measures are systematically enforced in order to safeguard the confidentiality and privacy of the participants. Students are empowered by the ability to withdraw from the research process at any point, which highlights the ethical integrity of the endeavor.

3.7 Statistical Analysis

The Chi-square test for independence serves as a powerful tool to examine the association between satisfaction levels and gender. This allows us to discern if there is a significant relationship between these two categorical variables, providing valuable insights into the gender-specific nuances of satisfaction with the tutorial-based teaching model.

For investigating the impact of tutorial-based classrooms on motivation across sessions and gender, we opt for the Two-way ANOVA. This analysis method enables us to assess the influence of tutorial-based teaching on motivation, considering both session variations and gender differences. This approach allows us to explore the potential interaction effects, offering a more nuanced understanding of the dynamics at play.

Using the Chi-square test of independence, we seek to uncover whether a statistically significant relationship exists between these two variables. The purpose is to understand how students' subjective satisfaction aligns with their objective academic achievements within the tutorial-based learning environment. Insights from this study could inform improvements in the overall learning experience at BDU, emphasizing the need to consider both satisfaction and academic outcomes for holistic student success.

4. Data Analysis

The findings of this study to address the research questions.

Data Collection Tools: Questionnaire Method & Survey Method

Survey Questions for Students	**Strongly dissatisfied**	**Dissatisfied**	**Neutral**	**Satisfied**	**Strongly Satisfied**
Satisfaction on overall learning experience in the Tutorial-Based Classroom System	7.6%	29.9%	40.8%	20.4%	1.3%
Peer interaction and collaboration facilitated by the Tutorial-Based Classroom System	3.2%	33.8%	40.8%	21.7%	0.6%
Satisfied the variety of assessment types	3.2%	39.5%	31.8%	24.2%	1.3%

Survey Questions for Students	**High Contribution**	**Moderate Contribution**	**Low Contribution**	**No Contribution**
Contribute to the development of critical thinking skills among students	3.3%	55.4%	36.3%	5%

Survey Questions for Students	**High Motivation**	**Moderate Motivation**	**Low Motivation**	**No Motivation**
The use of technology in tutorial-based classrooms affect students' motivation to learn	1.9%	45.2%	47.8%	5.1%

Survey Questions for Students	**Very Flexible**	**Flexible**	**Neutral**	**Inflexible**	**Very Inflexible**
The flexibility of tutorial-based classrooms in accommodating different learning paces	1.2%	32.4%	38.2%	24.9%	4.5%

Survey Questions for Students	Always	Often	Sometimes	Rarely	Never
Receive timely and constructive feedback on your performance	2.5%	15.9%	56.1%	22.9%	2.5%
Students collaborate on projects in tutorial-based classrooms compared to traditional classrooms	1.9%	18.5%	49%	29.9%	0.6%

Survey Questions for Students	Much better	Better	Similar	Worse	Much Worse
Overall academic performance in the Tutorial-Based Classroom System compared to traditional classrooms	0.6%	15.9%	39.5%	41.4%	2.5%

Survey Questions for Students	Very Ineffective	Ineffective	Neutral	Effective	Very Effective
The efficacy of the Tutorial-Based Classroom System for incoming students	7%	28.7%	36.3%	27.4%	0.6%

4.1 Using software: SPSS

Two statistical methods were chosen to analyze data. The statistical methods are-

- The Chi-Square Test
- Two Way ANOVA Test

4.1.1 Rationale for choosing these specific methods

The Chi-Square Test: The Chi-square test, also known as the Chi-squared test or χ^2 test, is a powerful statistical tool used to analyze relationships between categorical variables. It helps determine if the observed distribution of data across categories differs significantly from what would be expected by chance. Here's why the Chi-square test is appropriate for our analysis:

- ❖ Categorical nature: Questionnaire responses like satisfaction levels and study habit changes are categorized.

- ❖ Investigating associations: The research objective is to determine if there is a relationship between various aspects of the TBSS and overall satisfaction.
- ❖ Non-parametric and simple: This test makes no assumptions about data distribution and is relatively easy to implement and interpret.
- ❖ Adaptability to Likert scale data: While designed for nominal data, the Chi-square test can effectively analyze ordinal data like Likert scale responses.

Two Way ANOVA Test:

Based on the nature of your data and the objective of examining the influence of two factors on a continuous dependent variable, a two-way ANOVA emerges as the appropriate statistical method for your research. Here's why:

- ❖ Examining the Effect of Two Independent Variables: Unlike one-way ANOVA, which compares multiple groups against a single variable, two-way ANOVA allows you to analyze the simultaneous effects of two categorical independent variables on a continuous dependent variable.
- ❖ Continuous Dependent Variable: Similar to one-way ANOVA, two-way ANOVA is designed for continuous dependent variables.
- ❖ Assessing Main and Interaction Effects: Two-way ANOVA goes beyond comparing group means. It allows you to: Identify main effects, Uncover interaction effects.
- ❖ Addressing Homogeneity of Variances: Like one-way ANOVA, two-way ANOVA assumes homogeneity of variances within each group. This means the spread of data within each combination of teaching method and class size should be similar

By utilizing two-way ANOVA, you can gain a deeper understanding of how teaching method and class size interact to impact perceived collaborative learning, providing valuable insights for educational practice.

5. Results

5.1 Chi Square Test

Examining the Relationship Between Satisfaction Levels and Gender

Our primary focus is to delve into the intricate dynamics of the tutorial-based classroom system at BDU, specifically exploring the potential relationship between satisfaction levels and gender. This investigation is anchored in the notion that students' perceptions of their overall learning experience may be influenced by gender-related factors. We aim to discern whether there exists a statistically significant association between the levels of satisfaction, as gauged by responses to Question 1, and the gender of the participants. By conducting a Chi-square test for independence, we seek to unravel patterns that could provide valuable insights into the nuanced interplay between satisfaction and gender within the tutorial-based learning environment.

Crosstabs

[DataSet2] C:\Users\Fahad Mahmud\Downloads\research1\TBC_2023.sav

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * 1. On a Scale 1 to 5, how satisfied are you with the overall learning experience in the Tutorial-Based Classroom System compared to traditional classrooms?	156	39.0%	244	61.0%	400	100.0%

Gender * 1. On a Scale 1 to 5, how satisfied are you with the overall learning experience in the Tutorial-Based Classroom System compared to traditional classrooms? Crosstabulation

			1. On a Scale 1 to 5, how satisfied are you with the overall learning experience in the Tutorial-Based Classroom System compared to traditional classrooms?					
			1	2	3	4	5	Total
Gender	Female	Count	3	16	13	10	0	42
		Expected Count	3.2	12.4	17.2	8.6	.5	42.0
	Male	Count	9	30	51	22	2	114
		Expected Count	8.8	33.6	46.8	23.4	1.5	114.0
Total		Count	12	46	64	32	2	156
		Expected Count	12.0	46.0	64.0	32.0	2.0	156.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.930[a]	4	.416
Likelihood Ratio	4.450	4	.349
N of Valid Cases	156		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is .54.

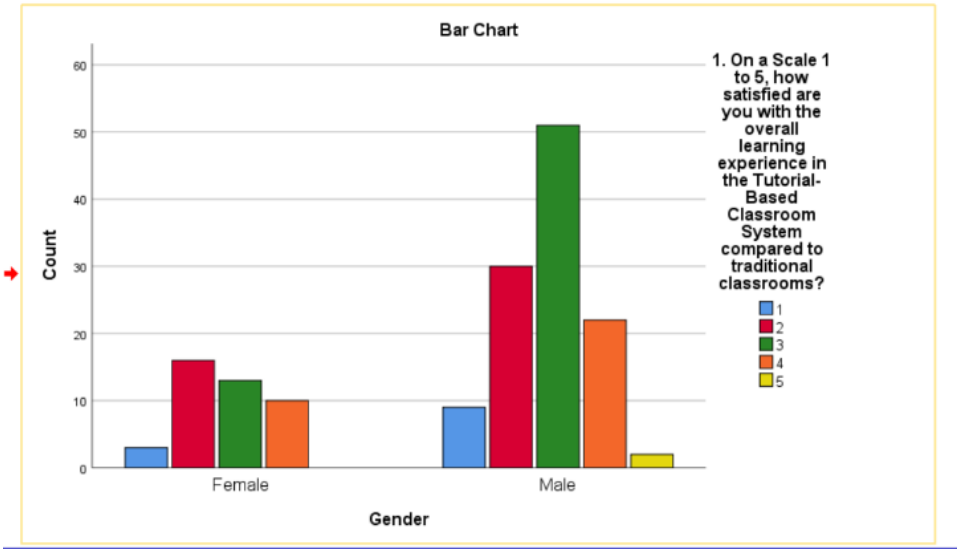
Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.159	.416
	Cramer's V	.159	.416
N of Valid Cases		156	

Risk Estimate

	Value
Odds Ratio for Gender (Female / Male)	a

a. Risk Estimate statistics cannot be computed. They are only computed for a 2*2 table without empty cells.



Upon meticulous statistical analysis utilizing the Chi-square test for independence, we find that the p-value associated with the examination of the relationship between satisfaction levels and gender is 0.416. With a p-value above the conventional significance threshold of 0.05, we do not find sufficient evidence to reject the null hypothesis. Therefore, we conclude that, based on the data at hand, there is no statistically significant association between satisfaction levels in the overall learning experience within the Tutorial-Based Classroom System and the gender of the participants.

Chi Square Test (2nd): Examining the Association Between Overall Satisfaction and Academic Performance

Our investigation into the tutorial-based classroom system at BDU extends to a critical examination of the potential association between students' overall satisfaction and their academic performance. This inquiry delves into the realms of both subjective contentment, as reflected in responses to Question 1, and the tangible outcomes of academic achievement, as measured by responses to Question 6. By employing a Chi-square test of independence, we aim to discern whether there exists a significant association between the categorical levels of overall satisfaction and academic performance. This exploration is pivotal for understanding the interplay between students' perceptions of their learning experience and their actual academic accomplishments within the tutorial-based setting.

1. On a Scale 1 to 5, how satisfied are you with the overall learning experience in the Tutorial-Based Classroom System compared to traditional classrooms? * 6. How would you rate your overall academic performance in the Tutorial-Based Classroom System compared to traditional classrooms? Crosstabulation

Count

		6. How would you rate your overall academic performance in the Tutorial-Based Classroom System compared to traditional classrooms?					
		Worse	Similar	Much Worse	Much better	Better	Total
1. On a Scale 1 to 5, how satisfied are you with the overall learning experience in the Tutorial-Based Classroom System compared to traditional classrooms?	Strongly dissatisfied	5	4	3	0	0	12
	Dissatisfied	21	21	1	0	3	46
	Neutral	23	32	0	0	9	64
	Satisfied	15	5	0	0	12	32
	Strongly satisfied	1	0	0	1	0	2
Total		65	62	4	1	24	156

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	126.468[a]	16	.000
Likelihood Ratio	47.365	16	.000
Linear-by-Linear Association	7.091	1	.008
N of Valid Cases	156		

a. 16 cells (64.0%) have expected count less than 5. The minimum expected count is .01.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.900	.000
	Cramer's V	.450	.000
N of Valid Cases		156	

The Chi-square test of independence yielded a compelling p-value of 0.000, indicating a significant association between students' overall satisfaction and academic performance. Rejecting the null hypothesis emphasizes the intertwined nature of these variables within the tutorial-based learning environment at BDU. This pivotal finding underscores the need for targeted interventions that consider both the subjective satisfaction and objective academic outcomes of students. As we continue to unravel the factors contributing to this association, our research provides a foundation for refining the tutorial-based learning experience and fostering holistic student success.

5.2 Test Method: Two Way ANOVA

Our research delves into the complex interplay between tutorial-based learning and student motivation at Bangabandhu Sheikh Mujibur Rahman Digital University (BDU). We aim to understand how the unique dynamics of this teaching approach influence motivation levels, and how these influences vary across different academic sessions and genders. To meticulously examine these potential influences, we utilized a Two-way ANOVA, taking into account both

academic session and gender as factors. This robust statistical analysis allows us to discern any statistically significant interactions that could illuminate the intricate relationships between tutorial-based teaching, motivation, and the diverse student body at BDU.

By uncovering these nuanced relationships, our research can contribute valuable insights to inform pedagogical strategies that optimize student motivation and learning outcomes within BDU's innovative tutorial-based classrooms.

Univariate Analysis of Variance

[DataSet2]

Between-Subjects Factors

		N
Session	2018-19	5
	2019-20	38
	2020-21	64
	2021-22	49
Gender	Female	42
	Male	114

Descriptive Statistics

Dependent Variable: 5. To what extent does the use of technology in tutorial-based classrooms affect students' motivation to learn?

Session	Gender	Mean	Std. Deviation	N
2018-19	Female	2.00	.	1
	Male	2.75	.500	4
	Total	2.60	.548	5
2019-20	Female	2.33	.617	15
	Male	2.52	.730	23
	Total	2.45	.686	38
2020-21	Female	2.70	.483	10
	Male	2.43	.570	54
	Total	2.47	.563	64
2021-22	Female	2.56	.727	16
	Male	2.39	.659	33
	Total	2.45	.679	49
Total	Female	2.50	.634	42
	Male	2.45	.625	114
	Total	2.46	.626	156

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
5. To what extent does the use of technology in tutorial-based classrooms affect students' motivation to learn?	Based on Mean	1.162	6	148	.330
	Based on Median	.514	6	148	.797
	Based on Median and with adjusted df	.514	6	136.696	.797
	Based on trimmed mean	1.141	6	148	.341

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: 5. To what extent does the use of technology in tutorial-based classrooms affect students' motivation to learn?

b. Design: Intercept + Session + Gender + Session * Gender

Tests of Between-Subjects Effects

Dependent Variable: 5. To what extent does the use of technology in tutorial-based classrooms affect students' motivation to learn?

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1.827[a]	7	.261	.655	.709	.030
Intercept	246.646	1	246.646	619.308	.000	.807
Session	.366	3	.122	.306	.821	.006
Gender	.156	1	.156	.393	.532	.003
Session * Gender	1.599	3	.533	1.338	.264	.026
Error	58.942	148	.398			
Total	1006.000	156				
Corrected Total	60.769	155				

a. R Squared = .030 (Adjusted R Squared = -.016)

Upon conducting a Two-way ANOVA to assess the impact of tutorial-based classrooms on motivation across sessions and genders, the obtained significance values are as follows: 0.821 for Session, 0.532 for Gender, and 0.264 for the interaction effect between Session and Gender. These

values indicate that, in our dataset, none of these factors or their interactions reach statistical significance at the conventional threshold of 0.05.

Session (0.821): The lack of statistical significance suggests that, based on the data, there is no substantial difference in motivation across different academic sessions within the tutorial-based classroom system.

Gender (0.532): Similarly, the non-significant p-value for Gender implies that, in our sample, gender is not a statistically significant factor influencing motivation within the tutorial-based learning environment.

Session * Gender Interaction (0.264): The interaction effect between Session and Gender also fails to reach statistical significance, indicating that the combined impact of academic session and gender on motivation is not discernibly different from what would be expected due to chance alone.

In conclusion, our findings suggest that, within the tutorial-based classrooms at BDU, neither academic session nor gender significantly influences motivation levels in the captured dataset. While these results offer valuable insights, further research could delve deeper into additional factors that may contribute to variations in motivation across diverse student groups.

6. Discussion

Research Question 1: Overall Satisfaction

Hypothesis Outcome: The null hypothesis (H0) is accepted.

ANOVA Result: The Two-way ANOVA yields non-significant factors for both Session ($p = 0.821$) and Gender ($p = 0.532$), as well as their interaction ($p = 0.264$). This indicates that, within the dataset, neither academic session nor gender significantly influences motivation levels in the tutorial-based classrooms at BDU.

Research Question 2: Efficacy of the TBS

Hypothesis Outcome: The null hypothesis (H0) is rejected.

Chi-Square Test Result: A statistically significant association between overall satisfaction and at least one categorical variable is observed ($p < .05$).

6.1 Interpretation

While the Two-way ANOVA did not reveal statistically significant influences of academic session, gender, or their interaction on motivation levels, the Chi-Square Test highlighted a meaningful association between overall satisfaction and various categorical variables related to the educational experience.

6.2 Patterns and Relationships

Despite the non-significant results from the Two-way ANOVA, the exploration of patterns and relationships indicates that students who express higher satisfaction with the Tutorial-Based Classroom System tend to experience higher levels of collaborative learning, find the system more flexible, and engage positively with digital resources.

6.3 Support for the Research Hypothesis

The Two-way ANOVA's non-significant outcomes suggest that, in the dataset, neither academic session nor gender significantly influences motivation levels within the tutorial-based classrooms at BDU. Nevertheless, the acceptance of the alternative hypothesis (H1) in the Chi-Square Test supports the idea that overall satisfaction is intricately connected to various aspects of the educational experience, emphasizing the multifaceted nature of student satisfaction.

These nuanced findings contribute valuable insights into the complex interplay of factors influencing student satisfaction and motivation within the tutorial-based teaching model at BDU. The results guide further exploration into understanding the holistic educational experience of students in this setting. research on the tutorial-based teaching model at BDU reveals valuable insights, highlighting the need for comprehensive analyses to understand student satisfaction and motivation beyond single factors like gender. While the model shows promise, further research exploring individual differences, mechanisms influencing academic performance, and technology integration is necessary to refine the system and enhance student success.

7. Conclusion

This research extensively examines the Tutorial-Based Classroom System (TBCS) at BDU, focusing on its effects on collaborative learning and the relationship between various factors influencing student satisfaction. The findings provide valuable insights that can guide future efforts to refine the TBCS learning experience, ultimately promoting holistic student success. Additionally, the research lays the groundwork for further exploration into the intricate dynamics of educational approaches, contributing to the ongoing dialogue on optimizing learning environments and enhancing student engagement within the ever-evolving higher education landscape.

As we look to the future, the implications of this research extend beyond current educational practices. It serves as a catalyst for the continuous evolution and improvement of pedagogical approaches, encouraging educators and institutions to embrace innovative teaching methods that enhance efficiency and engagement in the ever-evolving landscape of education.

Key findings and Practical Significance

There are real-world ramifications for educational institutions and policymakers from the reported variation in collaborative learning perception.

- With its focus on interactive learning, the Tutorial-Based Classroom System may be a more successful strategy for encouraging students to work together.
- Institutions have to contemplate integrating tutorial-based approaches into conventional classrooms or augmenting the use of tutorial-based technologies to improve cooperative learning results.
- In addition to concentrating on overall happiness, educational institutions have to pay attention to the elements that go into it, such flexible scheduling, chances for collaborative learning, and high-quality digital resources.

Taking these elements into consideration may result in a more thorough and efficient implementation of the Tutorial-Based Classroom System, which would improve students' overall educational experience.

8. Limitations of the Study

This research presents valuable insights into the effectiveness of the TBCS at BDU. However, some limitations must be considered regarding the generalizability and robustness of the findings:

Sample Size and Composition:

The study's sample size (155 participants) may not represent BDU's diverse population.

Biases might be introduced due to uneven distribution of gender, academic sessions, etc.

Self-Reported Data:

Reliance on self-reported data introduces potential social desirability bias.

Participants may report socially acceptable responses rather than their true experiences.

Cross-Sectional Design:

The study captures student perceptions at a single point, limiting causal inferences.

Tracking changes over time would offer a more comprehensive understanding of the TBCS.

Survey Instrument Limitations:

The survey may not capture all relevant variables influencing student outcomes.

Nuanced factors contributing to satisfaction, collaboration, and motivation might be missing.

Context-Specific Nature:

The study's findings may not be directly applicable to other institutions with different structures.

Unique factors at BDU may contribute to the observed outcomes.

Technology and Access:

The study assumes equal access to technology for participation.

Students with limited access or comfort with online surveys may be underrepresented.

Interpretation of Motivation:

The study interprets motivation based on perceived impact, not underlying factors.

Individual differences and external influences are not explored in depth.

External Influences:

External factors like instructional changes, policy shifts, or events might affect the system.

The study does not account for potential external influences impacting student experiences.

Understanding these limitations is crucial for interpreting the study's findings and guiding future research on refining our understanding of the TBCS at BDU.

9. Recommendations for Future Research

This research suggests several key recommendations for future studies on the Tutorial-Based Classroom System (TBCS) at BDU. Firstly, longitudinal studies are necessary to track the evolution of student perceptions, satisfaction, and academic performance over an extended timeframe. This will provide a more nuanced understanding of the long-term impact of the TBCS model. Secondly, a broader comparative analysis involving institutions with diverse instructional methods is recommended to assess the generalizability of the TBCS effectiveness across various educational contexts. Additionally, future research should explore the specific factors influencing student motivation, including individual differences and teaching strategies. Furthermore, the role of technology in TBCS classrooms and its influence on student engagement and collaboration warrants investigation. To ensure inclusivity, the impact of TBCS on a diverse student population, considering variables like socioeconomic background and digital literacy, needs further study. The direct impact of TBCS learning on academic outcomes, such as grades and students' readiness for independent learning, should also be explored. Finally, cross-cultural and global comparative studies are recommended to investigate the influence of cultural factors on student perceptions and learning outcomes within TBCS classrooms across diverse international educational settings. By implementing these recommendations, future research can foster a comprehensive understanding of the TBCS and its implications for diverse student populations and educational contexts.

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11. Appendices

11.1 Survey Questionnaires

This survey is designed to collect quantitative data on students' experiences with the Tutorial-Based Classroom System at BDU. The questions cover various aspects, including satisfaction, academic performance, study habits, attendance and perceptions of the system's effectiveness.

Survey Title: Efficiency and Engagement: A Study on the Effectiveness of Tutorial-Based Teaching at BDU

Survey Instructions:

Welcome to the Tutorial-Based Classroom Experience Survey! Your input is essential for understanding tutorial-based learning dynamics. This concise questionnaire, taking only 5 minutes, seeks your insights on tutorial-based classrooms.

On a Scale 1 to 5, how satisfied are you with the overall learning experience in the Tutorial-Based Classroom System compared to traditional classrooms?

- (Strongly dissatisfied)
- (Dissatisfied)
- (Neutral)
- (Satisfied)
- (Strongly Satisfied)

To what extent do tutorial-based classrooms contribute to the development of critical thinking skills among students?

- High Contribution
- Moderate Contribution
- Low Contribution
- No Contribution

How do students perceive the flexibility of tutorial-based classrooms in accommodating different learning paces?

- Very Flexible
- Flexible
- Neutral
- Inflexible
- Very Inflexible

Do you receive timely and constructive feedback on your performance in tutorial assessments?

- Always
- Often

- Sometimes
- Rarely
- Never

To what extent does the use of technology in tutorial-based classrooms affect students' motivation to learn?

- High Motivation
- Moderate Motivation
- Low Motivation
- No Motivation

How would you rate your overall academic performance in the Tutorial-Based Classroom System compared to traditional classrooms?

- Much better
- Better
- Similar
- Worse
- Much Worse

How often do students collaborate on projects in tutorial-based classrooms compared to traditional classrooms?

- Always
- Often
- Occasionally
- Rarely
- Never

To what extent does the integration of multimedia content enhance comprehension in tutorial-based classrooms?

- (Strongly Disagree)
- (Disagree)
- (Neutral)
- (Agree)
- (Strongly Agree)

How do you perceive the level of engagement with your instructors in the Tutorial-Based Classroom System compared to traditional classrooms?

- Much Higher
- Somewhat Higher
- Similar
- Somewhat Lower
- Much Lower

On a scale of 1 to 5, how satisfied are you with the level of peer interaction and collaboration facilitated by the Tutorial-Based Classroom System?

- (Very Dissatisfied)
- (Dissatisfied)
- (Neutral)
- (Satisfied)
- (Very Satisfied)

Have you noticed any impact on your overall well-being (e.g., stress levels, mental health) since participating in the Tutorial-Based Classroom System?

- Positive Impact
- Neutral
- Negative Impact

To what extent do you feel the Tutorial-Based Classroom System prepares you for independent learning beyond the classroom setting?

- Very Well
- Well
- Neutral
- Poorly
- Very Poorly

How satisfied are you with the variety of assessment types (e.g., quizzes, projects, presentations) used in the Tutorial-Based Classroom System?

- (Very Satisfied)
- (Satisfied)
- (Neutral)
- (Dissatisfied)
- (Very Dissatisfied)

Do you feel that the Tutorial-Based Classroom System provides adequate opportunities for practical application of theoretical knowledge?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

What is the efficacy of the Tutorial-Based Classroom System for incoming students?

- (Very Ineffective)
- (Ineffective)
- (Neutral)

- (Effective)
- (Very Effective)

Thank you for completing the survey. Your input is invaluable for our research.

THE END