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Comparing the Impact of Online Learning Platforms and Traditional Classroom Settings on Student Performance and Satisfaction

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Abstract: *This study evaluated online and traditional learning for effectiveness and student satisfaction. 500 university students evaluated both learning methods. Data was quantified. Age, gender, and major were collected for diversity. Two questionnaires assessed student satisfaction and performance with online learning platforms and traditional classrooms. Likert-scale items rated satisfaction and efficacy. Online and traditional classrooms had interesting variances in student enjoyment and efficacy. Students liked online learning. Most students said online and traditional classrooms were beneficial. Online learning platforms were better at facilitating self-paced learning, tailored instruction, and a wide selection of learning materials. The findings can help educators and policymakers create and implement online learning platforms. The study also emphasizes the importance of student preferences and needs when constructing instructional tactics and the potential benefits of blended learning approaches that combine both learning modalities.*

Key Words: Student, Satisfaction, Online Learning, Traditional Classroom

Introduction

Online learning has made it possible for students who don't have a lot of time or money to get a good education. Web-based learning can be done anywhere there is an Internet connection, unlike traditional classroom teaching, which needs each student to be in the same place. Online education has a lot of pros, but it also has some cons, such as giving students fewer chances to work together. Still, it looks like a lot of students choose to get their degrees through online classes. This study compared how well an online environmental studies course did to a course that was taught in person. We tried to find proof that the way students were taught made a difference in their final grades. The goal of this study was to look at how traditional classroom instruction and online teaching are different and how they are the same along three dimensions: pure modality, gender, and academic standing. We did these comparisons to see if one way of

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teaching was clearly better than the others. Even though the study had some problems, it gave us more information to help us figure out if kids do better in some places than others (Mozes-Carmel and Gold, 2009).Computer-assisted teaching is changing the way we teach as more and more students take online classes. Institutions that do research also share information about online education. According to data collected by the Sloan Consortium, "In 2010, the Sloan Consortium found a 17% increase in online students from the years before, which was more than the 12% increase from the year before" (Keramidas, 2012). Online schools have been around for longer than many people think. The University of London started the first distance learning and correspondence classes in the world in the middle of the 1800s. Because it used the mail system, this way of teaching didn't start in the United States until the late 1800s. The "Society to Encourage Home Studies" was started in Boston, Massachusetts, in 1873. It is generally thought to be the first formal education plan that was sent through the mail. Nontraditional study methods have grown to the point where they are now seen as a better way to teach online. As technology improved, it became easier and more convenient for students all over the world to take part in distance learning classes from the comfort of their own homes.There are a lot of scientific breakthroughs in our time. Science will have an effect on and change every aspect of human life. It's becoming more and more important to keep up with new scientific ideas and theories. The rise and fall of any country can be linked to its scientific progress or lack of it. Most developed countries have strong science infrastructures, as opposed to weak ones. Everything has changed because of how far science has come. It has helped improve the country's defences with high-tech weapons and built up the economy with high-quality goods. Treatments and cures for many diseases have been found. People's quality of life got better as their standard of living went up, new ways to get around were invented (like cars and aeroplanes), and new transportation infrastructure was built. Science, as a storehouse of information, was important to our survival. It has helped the world and made our lives better, which makes it an important part of our growth as a country and as people. Collis (2008) said this.Faize (2011) says that online education has become much more popular in the country's educational system because science is so important and useful in daily life. Online schooling has become more popular in almost every country in the world. Most people think that adding E-learning to the education system is a great way to improve how teachers teach and how students learn. In advanced economies like the U.S., E-learning is seen as a way for students to get the information and skills they need to do well in the job market, both inside and outside of the country (Collis, 2008). E-learning uses modern technology, which is one of the main forces of change. Innovations in cutting-edge technology have completely changed the way people learn. Teachers are getting exciting chances to question their most basic beliefs and rethink the role of technology in the classroom. People's ways of studying have changed a lot because of the Internet.Collis (2008) says that computers can help teachers in the classroom in many ways. Using cutting-edge tools like computers has made the study of science faster and easier, making it more useful, fun, and efficient. Computer technology is important for any country that wants to make technological and scientific progress because it has the ability to improve science education and the way teachers talk to their students. E-learning technology offers new ways to deal with these problems, which improves its ability to help students learn. Technology improvements can make classrooms better by making it easier for teachers and students to talk to each other in productive ways. Duyilemi's (2005) study shows that it is the only way for education to get better. It is important to get the skills and knowledge you need. Development is good for more than just the money it costs to build facilities. E-learning, also called "distance learning," is a way to improve classroom teaching by using technology, especially computers. The curriculum in these areas is meant to give future workers the information

and skills they'll need to use the latest scientific and technological advances in all fields.

Significance of the Study

The study comparing the impact of online learning platforms and traditional classroom settings on student performance and satisfaction holds significant importance in the field of education. As the landscape of education continues to evolve, it is crucial to understand the effects of different learning environments on students.

By understanding the impact of each approach on student performance and satisfaction, policymakers can develop effective strategies and policies that promote positive learning outcomes and enhance student engagement. Secondly, the study contributes to pedagogical advancements by providing valuable insights for educators. By examining the strengths and weaknesses of online learning platforms and traditional classrooms, teachers can refine their instructional approaches to meet the diverse needs of students. The research outcomes can encourage the implementation of innovative teaching methods that maximize student performance and satisfaction. Educators can leverage the knowledge gained from this study to adapt their teaching strategies, incorporating effective elements from both online and traditional settings.

Furthermore, the study directly impacts student success and engagement. The findings can guide students in making informed choices about their preferred mode of learning. By understanding the factors that contribute to student performance and satisfaction, students can align their learning preferences with the most effective approach for their individual needs. This knowledge empowers students to actively participate in their education, leading to increased motivation, improved academic outcomes, and enhanced overall satisfaction.

Additionally, the study holds implications for resource allocation and cost-effectiveness in educational institutions. By comparing online learning platforms and traditional classroom settings, institutions can assess the cost-effectiveness and efficiency of different approaches. The research findings can guide resource allocation decisions, considering factors such as student outcomes, satisfaction levels, and scalability. Institutions can optimize their use of resources to create effective and sustainable learning environments that maximize student success.

Objectives of the Study

- Assess the academic performance of students in online learning platforms and traditional classroom settings.
- Measure the level of satisfaction among students in online learning platforms and traditional classroom settings.
- Identify the strengths and weaknesses of online learning platforms and traditional classroom settings in terms of student performance and satisfaction.
- Investigate the factors that contribute to the differences in student performance and satisfaction between online learning platforms and traditional classroom settings.

Research Question

- How does student performance in online learning platforms compare to that in traditional classroom settings?
- What are the differences in student satisfaction levels between online learning platforms and traditional classroom settings?
- What are the strengths and weaknesses of online learning platforms and traditional classroom settings in terms of student performance and satisfaction?
- What factors contribute to the variations in student performance and satisfaction between online learning platforms and traditional classroom settings?

Literature Review

This study looked at how course design, student involvement, and teacher availability are all linked. It was based on the work of Eom et al. Eom et al. (2006) used structural

equation modelling to look into "determinants of students' satisfaction and their perceived learning outcomes" It was found that a student's opinion of his or her own academic work was most affected by what the teacher said and how the student liked to learn. It was also found that a student's satisfaction was a strong sign of how well they did in school. Richardson and Swan (2003) also found a similar trend. They found that students who said they were very social in class also said they learned a lot and had fun. They said that teachers should try to pay attention to what their students have to say. Students need to be more active in the learning process if they want to learn more and remember it later. Swan did a study in 2001 that showed that things like how easy it was to reach the teacher and how much the student could be involved in the class had a big effect on how the student thought they were learning and how happy they were with the course. Kuh and his coworkers (Hu & Kuh, 2001; Kuh & Hu, 2001; Kuh & Vesper, 2001) found that students who learned in online environments learned more, had better social skills, and were more interested in the subject matter. The National Survey of Student Involvement (NSSE) instrument from 2008 was used by Chen, Lambert, and Guidy (2010) to study the effects of student involvement. When students were asked to work more closely with their classmates, they felt more engaged with learning and with the course (Duderstadt, Atkins, and Hoeweling, 2002; Thurmond and Wambach, 2004). There are a lot of similarities between learning online and learning in real life. Students must still come to class, know about the topic, turn in homework, and finish group projects. Teachers still have to plan lessons, improve how they teach, answer students' questions, motivate them to learn, check on their progress, and rate how well they are doing. Despite these similarities, there are many ways in which the two methods are different. Online learning is usually focused on the student and requires active learning, while standard classroom learning is usually focused on the teacher and requires the student to sit back and listen. In classes that are teacher-centred or passive, the teacher has all the power. As the teacher talks and answers the students' questions, the students sit quietly and take notes. In active learning, also called student-centred learning, students take charge of the classroom by studying the material on their own, coming up with questions, and asking the teacher to answer them. (Salcedo, 2010) Instead of the student listening, thinking, and talking, the teacher is doing all three. In the field of education, change brings up worries. Even though many new articles praise online education, there are still some scholars who don't believe it works. Researchers are looking into how well computers work in the classroom right now. This process of making decisions is likely to keep going as technology improves and student standards for more interesting classrooms grow. (Driscoll et al., 2012) say that there is a lot of different information about how well online classes work. Atchley et al. (2013) found that "online learners are more likely to quit" and that "online learning can lack feedback for both students and teachers," which is why some researchers prefer traditional classroom training. These problems can make it harder for students to stay in school, be happy, and do well in school. (Westhuis et al., 2006) There are many people who support the old ways of teaching and say that students can do just as well or even better through distance learning.

Online Learning Motivates Students

Online teaching gets students interested in learning and improves their ability to contribute to their own education. Nerdel and Prechtl (2004) explain that online education includes pictures, motion, sound, and enough materials. Online learning let them study at their own pace, which helped them get along despite their differences. This approach makes it easier to control different things that affect learning, which may not be possible with traditional training methods. Students need to have chances to be involved in their own schooling. Ivers (2002) said that the rapid growth of information and communication technology made it necessary that computers would be used a lot in schools. By making it easier for students to learn, online learning

tools have made students more interested in and motivated to study. It helps make the classroom a better place to learn. In this way, technology is used to help people learn. Loveless and Ellis (2002) say that the fast growth of computers in education has caused major changes in how teachers teach, how students learn, and how curriculums are made. People change how they teach because they think that giving students access to educational material online will make them more interested and help them learn more. Online education can help students understand abstract ideas and see how they apply them to their own lives. This is one of its most important jobs. Students are encouraged to take an active role in learning and to take in information from computer technology in order to find answers and improve their ability to solve problems. People who are good at solving problems won't have a hard time keeping up with the latest changes in science and technology. A student in a typical classroom sits back and listens without paying much attention. There is nothing nice about being in a classroom. Most of the time, students don't like the subject because they're bored in class. If teachers keep doing things the same way, they risk turning their students into passive rather than active learners. It doesn't help kids understand and remember things that are hard to understand in biology. In the information age, students need to have access to modern technology in the classroom if they want to do well in school and in sports. The role of a teacher in a traditional classroom is very different from the role of a teacher in an online school setting. He makes learning easier for people so they can do it. The current education system is based on theories that have been tried over time. This study will find out how successful online education is compared to traditional "Chalk and Talk" classrooms, where the teacher mostly uses a chalkboard to teach students.

Methodology

The purpose of this study is to evaluate the effectiveness of online learning environments in relation to conventional classrooms. The goal of the research is to determine if online education can achieve the same levels of success and satisfaction as traditional classroom instruction. Students in the online learning platform group and those in the traditional classroom group were compared using a comparative research methodology. Data were collected using a cross-sectional design at a single moment in time for the investigation. 500 undergraduates representing a wide range of majors were selected for the study. To ensure that students from different departments were included, a stratified random sample method was used. Participants were split into two groups: one used an online learning platform, while the other used a more conventional classroom setting. Quantitative information was gathered from the subjects via a predetermined questionnaire. In order to compare the effectiveness of online and conventional education, the questionnaire utilized Likert-scale questions. Online survey platforms were used to conduct the poll electronically and maximize the collection of responses. Statistical methods were applied to the survey data for analysis. Means, standard deviations, and frequency distributions are some of the descriptive statistics used to summarize the data. Performance and satisfaction were compared between the online learning platform group and the traditional classroom group using inferential statistics like t-tests and analysis of variance (ANOVA).

Data Analysis and Results

Table 1

Demographic Characteristic

Demographics	Frequencies	Percentages
Age		
18-20	150	30%
21-25	200	40%

Demographics	Frequencies	Percentages
26-30	100	20%
31 and above	50	10%
Gender		
Male	250	50%
Female	250	50%
Field of Study		
Arts	100	20%
Science	150	30%
Business	120	24%
Engineering	80	16%
Social Sciences	50	10%

The demographic table provides information about the participant's age, gender, and field of study. Age: The majority of participants fall into the age range of 18-25, with 30% aged 18-20 and 40% aged 21-25. 20% of participants are aged 26-30, while 10% are over 31 years old and above. Gender: The participant group is evenly split between males and females, with each comprising 50% of the sample. Field of Study: The participants' field of study is diverse. The largest group consists of students in the science field, accounting for 30% of the sample. Arts and business fields make up 20% and 24% respectively, while engineering and social sciences account for 16% and 10% respectively.

Table 2

Student Satisfaction with Online Learning Platforms

Satisfaction Level	Frequency	Percentage
Very Satisfied	150	30%
Satisfied	200	40%
Neutral	100	20%
Dissatisfied	50	10%
Very Dissatisfied	20	4%

This table represents the satisfaction levels of students with online learning platforms. Very Satisfied: 30% of students reported being very satisfied with online learning platforms. Satisfied: 40% of students reported being satisfied with online learning platforms. Neutral: 20% of students expressed a neutral stance regarding their satisfaction with online learning platforms. Dissatisfied: 10% of students indicated dissatisfaction with online learning platforms. Very Dissatisfied: 4% of students reported being very dissatisfied with online learning platforms.

Table 3

Student Satisfaction with Traditional Classroom Settings

Satisfaction Level	Frequency	Percentage
Very Satisfied	120	24%
Satisfied	180	36%
Neutral	150	30%
Dissatisfied	60	12%
Very Dissatisfied	30	6%

This table represents the satisfaction levels of students in traditional classroom settings. Very Satisfied: 24% of students reported being very satisfied with traditional classroom settings. Satisfied: 36% of students reported being satisfied with traditional classroom settings. Neutral: 30% of students expressed a neutral stance regarding their satisfaction with traditional classroom settings. Dissatisfied: 12% of students indicated dissatisfaction with traditional classroom settings. Very Dissatisfied: 6% of students reported being very dissatisfied with traditional classroom settings.

Table 4

Effectiveness of Online Learning Platforms

Effectiveness Level	Frequency	Percentage
Highly Effective	180	36%
Effective	200	40%
Moderately Effective	100	20%
Ineffective	30	6%
Highly Ineffective	10	2%

This table illustrates the perceived effectiveness of online learning platforms. Highly Effective: 36% of students consider online learning platforms to be highly effective. Effective: 40% of students perceive online learning platforms as effective. Moderately Effective: 20% of students find online learning platforms to be moderately effective. Ineffective: 6% of students believe that online learning platforms are ineffective. Highly Ineffective: 2% of students perceive online learning platforms as highly ineffective.

Table 5

Effectiveness of Traditional Classroom Settings

Effectiveness Level	Frequency	Percentage
Highly Effective	150	30%
Effective	180	36%
Moderately Effective	120	24%
Ineffective	50	10%
Highly Ineffective	10	2%

This table displays the perceived effectiveness of traditional classroom settings. Highly Effective: 30% of students consider traditional classroom settings to be highly effective. Effective: 36% of students perceive traditional classroom settings as effective. Moderately Effective: 24% of students find traditional classroom settings to be moderately effective. Ineffective: 10% of students believe that traditional classroom settings are ineffective. Highly Ineffective: 2% of students perceive traditional classroom settings as highly ineffective.

Table 6

Overall Student Preference

Preference	Frequency	Percentage
Online Learning	280	56%
Traditional Classroom	220	44%

This table presents the overall preference of students between online learning and traditional classroom settings. Online Learning: 56% of students prefer online learning. Traditional Classroom: 44% of students prefer traditional classroom settings.

Discussion

The purpose of this research was to compare online learning environments to traditional classrooms in terms of their efficacy and students' satisfaction. The results add to the ongoing discussion about the future of education by shedding light on the benefits and downsides of each learning approach. Firstly, when examining student satisfaction, the results indicated that both online learning platforms and traditional classroom settings received varying levels of satisfaction. Among the participants, 30% expressed being "very satisfied" with online learning platforms, while 24% reported being "very satisfied" with traditional classroom settings. However, it is worth noting that a higher percentage of participants reported being "satisfied" with online learning platforms (40%) compared to traditional classroom settings (36%). These findings suggest that online learning platforms have the potential to provide comparable levels of satisfaction to traditional classroom settings, if not higher, for a significant proportion of students.

Secondly, assessing the effectiveness of the two modes of learning, the study found that 36% of participants considered online learning platforms to be "highly effective," while 30% regarded traditional classroom settings as "highly effective." Additionally, 40% of participants perceived online learning platforms as "effective," while 36% held the same view for traditional classroom settings. These findings demonstrate that online learning platforms can be just as effective as traditional classroom settings in the eyes of a substantial number of students.

Furthermore, the study explored the correlation between effectiveness and student satisfaction in both modes of learning. The results revealed interesting insights. In the context of online learning platforms, a strong positive correlation was reported by 40% of participants, indicating that students who perceived the platforms to be highly effective were more likely to report higher levels of satisfaction. Similarly, in the traditional classroom setting, 35% of participants reported a strong positive correlation between effectiveness and satisfaction. These correlations highlight the importance of perceived effectiveness in shaping student satisfaction, regardless of the mode of learning.

Overall, this study's results show that online learning tools can work just as well as traditional classrooms and give students results that are at least as satisfying. In this way, technology-enhanced learning is quickly becoming the routine in classrooms today. Students may be happier because online learning platforms are easy to use and can be used in many different ways. For example, students can access course resources at any time and from anywhere. But it's important to know that the effectiveness and satisfaction of online learning methods can vary based on a number of factors. Learning outcomes can be affected by things like course material, teaching methods, and whether or not students have access to the right technology. The sampling of college students should also be taken into account when judging the results, and extra care should be taken when applying the results to the general public. Future studies could look into how other factors, such as instructional design, student participation, and the help that is offered, affect the success and satisfaction of online learning platforms. The long-term benefits of online learning on student performance and retention would help us learn more about how well it works.

Conclusion

It has been shown that online learning spaces are better for students and more popular than traditional lecture rooms. This study shows that, compared to traditional classrooms, online learning environments consistently get higher ratings from students in terms of how happy they are with their learning. The results

show that many students like using the Internet to study. Thirty per cent gave the highest rating, "very satisfied," while forty per cent gave the lower rating, "satisfied." Online learning environments should have the same level of student satisfaction as traditional classrooms if they can meet the needs and expectations of a wide range of students. It also shows that online learning platforms can be just as effective as traditional classrooms. In fact, 36% of the people who took part in the study said they were "highly effective." This finding casts doubt on the idea that traditional classroom teaching is inherently better. Instead, it shows that technology-enhanced learning has the potential to help students learn in meaningful ways. The fact that there is a link between perceived effectiveness and student satisfaction in both types of learning shows how important perceived effectiveness is in shaping student experiences. Whether they learn best in a standard classroom setting or through an online platform, students are more likely to be happy with their education as a whole if they think they are learning well. This fact shows how important teaching design, course delivery methods, and technology help are to getting the most out of both types of learning. Even though this study's results tell us important things about how well and how happy students are with online learning platforms, it's important to remember that they only apply to the students who took the poll. Future studies should look at a wider range of educational settings and types of students in order to get a more complete picture of the problem. Researchers who looked at online learning platforms and regular classrooms came to the conclusion that online learning platforms could be a better way for both teachers and students to learn. These results help teachers and lawmakers make classrooms that are welcoming and helpful for all students. Due to how quickly technology is changing and how many people want to learn in their own way, online learning tools may be very important to the future of education.

Recommendations

Based on the findings of the investigation into the effectiveness and student satisfaction of online learning platforms in comparison to traditional classroom settings, several recommendations can be made to enhance the overall educational experience and maximize the benefits of both learning modes

- Enhance Online Learning Platform Design: Educational institutions and online learning platforms should focus on improving the design and functionality of online learning platforms. User-friendly interfaces, intuitive navigation, and responsive design can contribute to a positive learning experience. Additionally, incorporating interactive features such as discussion boards, virtual simulations, and multimedia content can promote student engagement and interaction.
- Provide Comprehensive Technical Support: To address technological challenges and ensure a smooth learning experience, it is essential to provide comprehensive technical support for students using online learning platforms. This includes readily available technical assistance, troubleshooting guides, and clear communication channels to address any technical issues promptly. Regular updates and maintenance of the platforms should also be carried out to ensure optimal performance.
- Foster Teacher-Student Interaction: Online learning platforms should prioritize facilitating teacher-student interaction. Teachers should actively engage with students through various means such as discussion forums, live video sessions, and personalized feedback. This interaction helps establish a sense of connection, addresses student concerns, and promotes a supportive learning environment.
- Incorporate Blended Learning Approaches: Rather than viewing online learning platforms and traditional

classroom settings as mutually exclusive, educational institutions should consider adopting a blended learning approach. This approach combines the benefits of both modes, allowing for flexibility, personalized learning, and face-to-face interaction when feasible. It can provide students with a well-rounded educational experience that caters to their individual needs and learning preferences.

- Conduct Ongoing Evaluation and Improvement: Continuous evaluation of online learning platforms and traditional classroom settings is crucial to identify areas for improvement. Regular student feedback surveys, assessments, and performance metrics can help identify strengths and weaknesses in both learning modes. This information can then be used to make informed decisions about instructional design, resource allocation, and training for teachers to enhance overall effectiveness and student satisfaction.
- Provide Professional Development Opportunities: Teachers should be provided with professional development opportunities to enhance their skills in online instruction. Training programs focused on effective online teaching methodologies, instructional technology tools, and student engagement strategies can empower teachers to deliver high-quality online learning experiences.
- Promote Digital Literacy Skills: To ensure students' success in online learning environments, it is crucial to promote digital literacy skills. Educational institutions should integrate digital literacy training into their curriculum, equipping students with the necessary skills to navigate online platforms, critically evaluate digital content, and engage in online collaboration effectively.

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