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A comparative study of traditional and online learning methods: implications for Educational outcomes in higher Education

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Abstract

It is now common practice to compare and contrast conventional classroom instruction with online alternatives due to the dramatic impact that fast technological development has had on the academic environment. Comparing the effects of these two pedagogical stances on student achievement is the goal of this research. This research uses a mixed-methods approach to look at how different institutions and fields of study affect students' involvement, satisfaction, and academic success. Interviews with both students and teachers, as well as review of their academic records, were used to gather data. Learning outcomes may be improved by the use of effective digital tools and pedagogical practices in online learning, which offers flexibility and accessibility in contrast to conventional learning approaches that provide strong face-to-face contact and organised learning settings. In light of these results, it is clear that schools should implement a hybrid model of education that draws on the best features of both types of instruction to improve student achievement. Educators and legislators seeking to improve the standard of higher education may use the study's practical findings to further the continuing conversation on educational innovation.

Keywords: traditional learning, online learning, higher education, educational outcomes, blended learning, student engagement, academic performance

Introduction

One of the many areas that has been profoundly affected by the rise of digital technology is education. The transition from conventional classrooms to online learning platforms has gathered significant steam as more and more universities embrace technology advancements. This shift prompts important enquiries into the relative merits of online and conventional forms of education, as well as the effects of both on student achievement.

The foundation of higher education has historically been traditional learning, which is defined by physical classrooms, regulated curriculum, and face-to-face teaching. Its advantages include an organised setting that promotes concentrated learning, quick feedback, and direct connections between people. Traditional approaches, on the other hand, have their limits, such as pupils' inability to adapt to changing circumstances due to factors like distance and time.

Online learning, on the other hand, takes use of digital platforms to provide instructional information in a way that is both flexible and accessible. Now more than ever, students from all over the world may study online, at their own speed, thanks to the proliferation of digital resources like Massive Open Online Courses (MOOCs). Although there are many advantages to online learning, there are also some disadvantages. Students may struggle with self-discipline, computer literacy, and the absence of face-to-face connection, all of which may impact their participation and the results of their learning.

In order to better understand the relative efficacy and consequences of online and conventional learning techniques for educational results in higher education, this research intends to do a comparative comparison of the two. This study aims to provide a thorough assessment of these learning methods by looking at several aspects including academic achievement, student involvement, and general happiness. Educators, legislators, and institutions may use the data to better understand how to create optimal learning environments and enhance educational methods.Online learning is becoming more common, therefore it's important to look at the pros and cons of it compared to more conventional ways of education. Future initiatives for improving learning experiences in higher education will be shaped by this study, which will also add to the continuing conversation on educational innovation.

Literature review

The efficacy and influence of traditional learning, which is characterised by in-person teaching in a classroom context, has been the subject of much research. From 2016 to 2021, studies shed light on many important features of conventional classrooms:

Students and teachers in conventional classrooms benefit greatly from one-on-one conversation, according to research like that of Smith et al. (2017). Smith, Johnson, and Lee (2017) found that students were more engaged and satisfied when they received quick feedback and were part of a collaborative learning environment.

Academic Success: Brown and Green (2018) discovered that students often get higher results in school when they use conventional learning techniques. This is because these approaches provide more structured settings and personalised help. According to the research, students in conventional classrooms do better when they have access to mentors and get academic support more quickly (Brown & Green, 2018).

Drawbacks: Although there are many benefits to conventional learning, some students may not be able to take advantage of them due to factors like distance or schedule conflicts (Jones & Miller, 2019). This inflexibility can make it harder for students from marginalised backgrounds to take part in college life.

Changes in educational dynamics have resulted from the proliferation of online learning. From 2016 to 2021, researchers have examined the pros, cons, and efficacy of online education:

Because of the accessibility and flexibility offered by online learning platforms, students are able to study at their own speed and from anywhere in the world (Anderson, 2020). This adaptability has garnered accolades for its ability to meet the needs of students with varying backgrounds and schedules, which in turn helps to attract students who would not fit in with more conventional classroom settings (Anderson, 2020; Garcia, 2019).

Several research have investigated how online education affects students' involvement and performance in the classroom. Online education has several advantages, such as increased accessibility, but it also demands students to be highly motivated and self-disciplined (Nguyen, 2018). Participation was lower in online classes than in more conventional classrooms, which may have an impact on students' ability to learn (Nguyen, 2018).

Tech and Pedagogy: Strong tech infrastructure and well crafted pedagogical approaches are essential for successful online learning. According to studies conducted by Clark and Mayer (2021), online courses may greatly benefit from the addition of multimedia and interactive components in order to increase student involvement and the efficiency of their learning. According to the research, when compared to more conventional teaching approaches, well-executed online learning aids may provide equivalent or better results (Clark & Mayer, 2021).

Research comparing online and conventional classroom instruction has recently surfaced, shedding light on the relative merits of the two:

Student Satisfaction and Academic Performance: Wang et al. (2020) compared online and conventional classroom settings to see which was more beneficial to students. According to Wang, Chen, and Li (2020), online courses that are well-designed and include interactive and supporting elements may achieve comparable results as conventional techniques, even though old methods frequently result in better satisfaction and performance.

Blended learning models, which include aspects of both online and conventional learning, were investigated by Thompson and O'Reilly (2021). The research showed that hybrid techniques might combine the best features of both systems to provide a well-rounded education. According to Thompson and O'Reilly (2021), the results indicate that combining online and in-person interactions may improve educational results generally.

Both conventional classroom instruction and internet resources have their advantages and disadvantages, as discussed in the literature from 2016 to 2021. Online learning may assist a broad student population due to its accessibility and flexibility, in contrast to conventional

learning venues that give organised, engaging experiences. New hybrid learning models are showing promise as a way to combine the best features of both approaches. Higher education educational results may be better understood by comparing and contrasting conventional and online learning approaches, and this paper lays the groundwork for such investigation.

Objectives of the study

1. To Assess and compare the academic performance of students participating in traditional learning versus those engaged in online learning environments.
2. To Investigate the levels of student engagement in traditional and online learning settings.
3. To Examine students' satisfaction with their learning experiences in both traditional and online formats.

Research methodology

In order to evaluate and contrast conventional classroom instruction with online resources and determine which is more effective in terms of student achievement, this study used a descriptive research strategy. In order to get a complete picture of how well each learning strategy works, the technique makes use of quantitative approaches. Students and faculty at different universities fill out standardised questionnaires that provide quantitative data. Questions in the surveys aim to gauge students' involvement, academic achievement, and general happiness with both online and conventional classrooms. Grades and test scores are examples of academic performance indicators that are retrieved from school records in order to provide objective assessments of the results of education. To put the results in perspective with larger trends and behaviours, the research also compares and contrasts previous literature and case studies. Through the use of statistical methodologies, we compare the two learning approaches and find that they significantly vary in terms of student involvement and academic success. When analysing qualitative data, thematic analysis is a powerful tool for gaining a better understanding of the participants' perspectives and experiences.

Data analysis and discussion

Table 1 – Demographic information

Demographic Category	Category	Number of Students	Percentage (%)
Age	18-20 years	45	30.0%
	21-23 years	60	40.0%
	24-26 years	30	20.0%
	27 years and above	15	10.0%
Gender	Male	70	46.7%
	Female	75	50.0%
	Non-binary/Other	3	2.0%
	Prefer not to say	2	1.3%
Year of Study	First Year	50	33.3%
	Second Year	35	23.3%
	Third Year	30	20.0%
	Fourth Year	20	13.3%
	Postgraduate	15	10.0%
Field of Study	Arts and Humanities	20	13.3%
	Business and Management	40	26.7%
	Science and Technology	50	33.3%
	Social Sciences	20	13.3%
	Engineering	15	10.0%
Mode of Learning	Traditional (In-person)	70	46.7%
	Online	50	33.3%
	Hybrid	30	20.0%
Socio-Economic Status	Low Income	25	16.7%
	Middle Income	90	60.0%

Demographic Category	Category	Number of Students	Percentage (%)
	High Income	35	23.3%
Technological Proficiency	Beginner	15	10.0%
	Intermediate	70	46.7%
	Advanced	65	43.3%
Geographic Location	Urban	100	66.7%
	Rural	50	33.3%

A wide variety of traits across several categories are shown by the demographic study of the 150 college students. According to the data, most students are in the 21–23 age bracket (40.0% of the total), however there is a sizeable contingent of students in the 18–20 age bracket (30.0%). Accordingly, undergraduates make up the vast majority of the student body, with a sizable minority of students aged 27 and above (10.0%).

A little more than half of the students are female (50.0%), whereas almost half are male (46.7%). A low degree of gender diversity is highlighted by the tiny number of students who identify as non-binary or choose not to declare their gender.

Students in their first year make up the biggest group in terms of academic development at 33.3%, followed by those in their second and third years at 23.3% and 20.0%, respectively. This indicates that most students are in their first year of college or are just beginning their academic careers, while there are relatively few in their last year or in their graduate studies (13.3% and 10.0%, respectively).

Among all academic specialisations, science and technology ranks highest (33.3% of students), followed by business and management (26.7%). The diverse academic interests of the student population are reflected in the lesser proportions of Arts & Humanities, Social Sciences, and Engineering.

The majority of students choose to attend lessons in person (46.7% of the total), while a sizeable minority prefer to study online (33.3% of the total). A lower percentage (20.0%) use hybrid learning techniques, suggesting that more and more people are open to flexible learning possibilities, but still leaning towards more traditional approaches.

Nearly 60% of students fall into the middle-income bracket, with lesser percentages of pupils from the low-income bracket (16.7%) and the high-income bracket (23.3%). Based on this distribution, it seems that the student body comes from a wide range of economic backgrounds.

Students have a high level of technological skill; the majority of them are either advanced users (43.3%) or intermediate users (46.7%). The fact that only 10% are complete newcomers suggests that this is a technologically advanced student population that can easily adjust to different types of learning environments.

A lesser percentage of students hail from rural regions (33.3%), whereas the vast majority (66.7%) reside in metropolitan areas. Higher education institutions are mostly located in metropolitan locations, and this distribution reflects that.

An all-encompassing picture of the student body is painted by the demographic analysis, which draws attention to important patterns and traits that might guide future studies and school initiatives.

Table 2 – Comparative analysis of traditional and online learning

Aspect	Mode of Learning	Mean Score	Standard Deviation	Rating Scale (1-5)
Academic Performance	Traditional (In-person)	3.8	0.7	1.0 - 5.0
	Online	3.4	0.8	1.0 - 5.0
Engagement Levels	Traditional (In-person)	4.1	0.6	1.0 - 5.0
	Online	3.7	0.7	1.0 - 5.0
Overall Satisfaction	Traditional (In-person)	4.2	0.5	1.0 - 5.0
	Online	3.8	0.6	1.0 - 5.0

When looking at students' academic achievement, engagement levels, and general happiness, it's important to compare conventional versus online learning settings.

The average academic achievement score for students in online learning settings was 3.4, whereas students in conventional (in-person) learning contexts reported a better score of 3.8. Traditional learners seem to have more stable performance levels, since the standard deviation for traditional learning is 0.7, which is somewhat lower than the standard deviation for online learning, which is 0.8. This provides additional evidence that students do better in more conventional classroom settings, maybe because they have more opportunities for one-on-one time with teachers and classmates.

Students' Levels of Engagement: Students in conventional classrooms have greater levels of engagement, with an average score of 4.1, in contrast to 3.7 for online learners. More consistency in participation is shown by the lower standard deviation (0.6) for conventional learners compared to the higher variability (0.7) seen among online learners. Based on these results, it seems that students could be more engaged and active in traditional classroom settings where they can ask questions and contribute ideas than in more informal online settings.

On the whole, students are more satisfied with their educational experiences in conventional classrooms (mean score: 4.2 vs. 3.8 for online courses). Online learning has a little larger variation in satisfaction levels (0.6 standard deviation), in contrast to conventional learning (0.5 standard deviation), which indicates that students are generally satisfied. This pattern suggests that students are more satisfied with conventional learning environments, which may be because of the extensive assistance and contact that are accessible to them in these settings.

In conclusion, online learning environments continue to provide great value, even while conventional learning settings demonstrate higher levels of performance, engagement, and satisfaction. It is possible that schools might improve their students' learning experiences and results by combining the best features of the two approaches.

Conclusion

In comparison to online learning settings, conventional classrooms often provide better academic achievement, more engagement, and higher levels of overall happiness, according to the research. The organised form of conventional classrooms, the one-on-one contact between teachers and students, and the regularity with which students participate all contribute to greater academic success, engagement, and pleasure for students in these settings. While there is no doubt that online education offers many advantages, such as convenience and accessibility, it does not succeed in creating the same degree of enthusiasm and contentment for learning. Based on these results, it seems that conventional classrooms provide several benefits that make studying there more successful and enjoyable. Nevertheless, the adaptability of online learning is vital, and a more well-rounded and efficient method of instruction might result from combining the best features of conventional and online modalities. Harnessing the advantages of both learning environments might be achieved by combining both strategies, which could accommodate varied learning preferences and improve educational performance generally.

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