LEARNING OUTCOMES AND MENTAL HEALTH IN ONLINE EDUCATION DURING COVID-19

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Abstract:
The COVID-19 outbreak led to a swift transition from traditional classroom learning to online education, impacting learning outcomes and student mental health. This research aim to student's learning outcome, mental health and satisfaction towards online education during Covid 19. The data needed for the study was collected from 100 students in Cochin using convenient sampling method. The collected data has been analysed using various statistical tools. The findings from this study enhance our understanding of how mental health influences learning in online settings and provide guidance for developing more resilient and supportive educational frameworks.

Key Words: Learning Outcomes, Mental Health, Online Education, Covid 19, Changes, Pandemic, Etc.,

Introduction:
The COVID-19 outbreak has brought about significant changes in the field of education, prompting educational institutions worldwide to transition from traditional in-person teaching to online learning platforms. This sudden shift has not only tested the technological capabilities of educational establishments but has also highlighted the importance of mental health and academic performance of students engaged in remote learning.

Online education, despite its advantages in terms of flexibility and accessibility, has presented its own set of challenges. Students have had to adapt to new digital environments, take charge of their own learning, and deal with the social isolation resulting from lockdowns and restrictions. These factors have inevitably affected their mental well-being, subsequently impacting their academic achievements and overall learning outcomes.

During the pandemic, concerns related to mental health such as anxiety, depression, and stress have been on the rise. The lack of face-to-face interactions with peers and educators, combined with the pressures of adjusting to online learning, have exacerbated these issues. Recognizing the link between mental health and academic performance in this context is essential for devising effective strategies to support students.

This research project aims to investigate the influence of mental health on learning outcomes in online education amid the COVID-19 crisis. By delving into these dynamics, the study intends to offer valuable insights on how educational institutions can enhance students' mental well-being and academic success in a remote learning setting.

Review of Literature:
Allen and Seaman (2020) conducted a study on the extensive effects of the pandemic on online learning. Their research demonstrated that while some students found online education beneficial due to its flexibility and accessibility, others struggled due to a lack of engagement and structured learning environments. They also noted that students from lower socioeconomic backgrounds faced significant barriers in accessing necessary technology and stable internet connections.

Bao (2020) performed a case study at Peking University to investigate the specific challenges and strategies of online teaching during the pandemic. Bao's research highlighted the disparities in academic performance caused by the shift to online education. The study identified key factors affecting student outcomes, such as technological access, teaching methods, and the role of continuous feedback. Bao recommended diverse assessment strategies and interactive learning tools to improve student engagement and performance in an online setting.

Dhawan (2020) analyzed the overall impact of online learning during the COVID-19 crisis, focusing on learning outcomes and mental health. The study found that increased screen time and lack of social interaction significantly contributed to heightened stress and anxiety among students. Dhawan emphasized the importance of interactive tools and asynchronous learning options to maintain student engagement and accommodate different learning paces. The research also stressed the need for mental health resources and support systems to help students cope with the psychological impacts of the pandemic.

Gonzalez et al. (2020) investigated the effects of COVID-19 confinement on students' academic performance in higher education. Their research highlighted the digital divide, showing how disparities in access to technology and internet connectivity significantly impacted students' learning experiences. The study revealed that students from rural areas and low-income households were particularly affected.

Statement of the Problem:
The sudden shift to online education due to the COVID-19 pandemic has raised concerns about its efficacy and impact on students. While some students have coped well, others have encountered significant hurdles in maintaining their academic performance and mental well-being. This study seeks to comprehend these challenges, assess the outcomes, and propose recommendations for future online education practices.

Significance of the Study:
This study is crucial as it offers a comprehensive understanding of learning outcomes and mental health in online education during the pandemic. The results can aid educators, policymakers, and institutions in devising more effective online learning strategies, enhancing mental health support systems, and bridging the digital divide. Ultimately, this research aims to contribute to the improvement of educational practices and student well-being in the ever-evolving realm of online education.

Objectives:
- To evaluate the influence of online education on students' learning outcomes during the COVID-19 crisis.
- To assess the mental health implications of the switch to online education for students.
- To determine the student's level of satisfaction towards online education during Covid 19.

Limitations of the Study:
- This research is limited to students in Cochin. Its findings and recommendations may not be applicable to all regions.
- Relying on self-reported data may introduce biases or limitations.
- Time and cost are the factors that have limited the sample size to 100.

Research Methodology:

Area of the Study:
Cochin was chosen for this study.

Sampling Design:
Randomly sampling technique was used to select the sample of 100 students from Cochin.

Data Collection:
- Primary Data: The study is entirely based on primary data gathered through well structured questionnaire.
- Secondary Data: Secondary data is gathered from journals, articles, and magazines, as well as various relevant websites.

Analysis and Interpretation:
Based on the data collected from the tourist, analysis and interpretation were performed. Further, the following specific tools were used.
- Simple Percentage
- Factor Analysis
- Chi-square Analysis

Table 1: Analysis of Demographic Profile

Variables	No. of Students	Number	Frequency
Gender	Male	56	56
	Female	44	44
Age	Less than 15 years	41	41
	16 - 20 years	33	33
	Above 20 years	26	26
Area of Residence	Rural	53	53
	Urban	47	47
Educational Qualification	Upto School Level	36	36
	UG/Diploma	40	40
	PG	24	24
Family Income	Less than Rs.25,000	30	30
	Rs.25,001 - 50,000	41	41
	More than Rs.50,000	29	29

Source: Primary Data

Table 1, the demographic profile of the students reveals that 56% are male and 44% are female. Regarding age, 41% are less than 15 years old, 33% are between 16 and 20 years old, and 26% are above 20 years old. The area of residence shows a slightly higher proportion from rural areas (53%) compared to urban areas (47%). In terms of educational qualification, 36% have education up to the school level, 40% have a UG/Diploma, and 24% have a PG qualification. Family income distribution indicates that 30% of students come from families earning less than Rs. 25,000, 41% from families earning between Rs. 25,001 and 50,000, and 29% from families earning more than Rs. 50,000.

Table 2: Factors Influencing Students Learning Outcomes and Mental Health towards Online Education

Factors	Statements	Factor Loadings	Eigen Value	% of Variance Explained
Learing Outcome (0.964)	Academic Performance	0.824	11.643	22.635
	Learning Resources and Tools	0.811		
	Engagement and Participation	0.877		
	Student Motivation and Self-Discipline	0.775		
	Academic Support and Resources Satisfaction	0.785		
	Academic Support and Resources	0.875		
Mental Health (0.847)	Stress Level	0.625	5.456	9.791
	Academic Pressure and Performance	0.845		
	Work-Life Balance	0.524		
	Family and Social Support	0.623		

Source: Primary Data

Table 2 reveals that high reliability (0.964) and significant eigen value (11.643) indicate that these factors collectively explain 22.635% of the variance in learning outcomes. Engagement and participation (0.877) and academic support and resources (0.875) have the highest factor loadings, suggesting they are the most influential on students' learning outcomes. Academic

performance (0.824) and learning resources and tools (0.811) also play crucial roles, along with student motivation and self-discipline (0.775) and satisfaction with academic support and resources (0.785).

The mental health factors have a reliability of 0.847 and an eigen value of 5.456, explaining 9.791% of the variance. Academic pressure and performance (0.845) have the highest factor loading, indicating a significant impact on mental health. Stress level (0.625) and family and social support (0.623) are also important factors. Work-life balance (0.524) has the lowest loading but still contributes to the overall mental health of students.

The above table reveals that engagement and participation, academic support and resources, and academic pressure and performance are the most significant factors influencing students' learning outcomes and mental health in online education.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of sampling Adequacy	0.542
Approx. Chi-square	231.56
Bartlett's test of Sphericiy df	55
Sig.	0.000

The table 3, KMO and Bartlett's test is signifying he value i.e. 0.542 is greater than the value 0.55 Bartlett's signifies the relationship between correlation tables.

Table 4: Chi-Square Test Significant Relationship between Demographic Profile and Students Level of Satisfaction towards Online Education during Covid-19

Factors	Level of Satisfaction			Total	χ^2 Value	Table Value	Remarks
	Low	Moderate	High				
Gender							
Male	18	21	17	56	1.68	5.991	NS
Female	11	20	13	44			
Age (Years)							
Less than 16 years	12	17	12	41	7.73	9.488	NS
16 - 20 years	12	9	12	33			
Above 20 years	12	8	6	26			
Educational Qualification							
Up to School Level	10	15	11	36	2.587	9.488	NS
UG / Diploma	13	15	12	40			
PG	7	12	5	24			
Family Income							
Less than Rs.25,000	11	9	10	30	8.35	9.488	NS
Rs.25,001 - 50,000	15	17	9	41			
More than Rs.50,000	6	14	9	29			
Area of Residence							
Rural	19	20	14	53	1.032	5.991	NS
Urban	15	17	15	47			

Source: Primary Data

The analysis of the significant relationship between the demographic profile and satisfaction level of students towards online education during COVID-19 is presented below for each factor:

Gender:
Among male students, 18 reported low satisfaction, 21 moderate, and 17 high, totaling 56. Among female students, 11 reported low satisfaction, 20 moderate, and 13 high, totaling 44. Gender with a χ2 value of 1.68 against a table value of 5.991, indicating no significance (NS)

Age (Years):
For students less than 16 years old, 12 reported low satisfaction, 17 moderate, and 12 high, totaling 41. Students aged 16-20 years had 12 reporting low satisfaction, 9 moderate, and 12 high, totaling 33. Those above 20 years had 12 reporting low satisfaction, 8 moderate, and 6 high, totaling 26. Age of the students with a χ2 value of 7.73 against a table value of 9.488, indicating no significance (NS).

Educational Qualification:
Students up to school level had 10 reporting low satisfaction, 15 moderate, and 11 high, totaling 36. Students with a UG/Diploma had 13 reporting low satisfaction, 15 moderate, and 12 high, totaling 40. Students with a PG qualification had 7 reporting low satisfaction, 12 moderate, and 5 high, totaling 24. Educational qualification with a χ2 value of 2.587 against a table value of 9.488, indicating no significance (NS)

Monthly Income:
Among students from families earning less than Rs. 25,000, 11 reported low satisfaction, 9 moderate, and 10 high, totaling 30. Students from families earning Rs. 25,001 - 50,000 had 15 reporting low satisfaction, 17 moderate, and 9 high, totaling 41. Those from families earning more than Rs. 50,000 had 6 reporting low satisfaction, 14 moderate, and 9 high, totaling 29. Family Income with a χ2 value of 8.35 against a table value of 9.488, indicating no significance (NS)

Area of Residence:
Students from rural areas had 19 reporting low satisfaction, 20 moderate, and 14 high, totaling 53. Students from urban areas had 15 reporting low satisfaction, 17 moderate, and 15 high, totaling 47. Students area of residence with a χ2 value of 1.032 against a table value of 5.991, indicating no significance (NS). Table 4 concludes that gender, age, educational qualification,

monthly income, and area of residence—showed a significant relationship with the satisfaction levels of students towards online education during COVID-19.

Conclusion:

The shift to online education during the COVID-19 pandemic has revealed considerable challenges and intricacies related to students' mental health and academic outcomes. As educational institutions swiftly transitioned to digital platforms, the effects on students' mental well-being and academic performance became increasingly apparent. The pandemic has intensified mental health concerns, including anxiety, depression, and stress, which have subsequently affected students' capacity to engage with and excel in online learning environments. This study highlights the critical necessity of addressing the relationship between mental health and academic performance, indicating that effective support systems are vital for promoting both well-being and educational achievement. By examining the specific obstacles encountered by students in remote learning environments and identifying effective strategies to alleviate these challenges, this research offers valuable insights for educators, policymakers, and mental health practitioners. It stresses the importance of creating targeted interventions that not only tackle the technological and pedagogical dimensions of online education but also prioritize the mental health of students. As the educational landscape continues to transform, especially in light of ongoing and future disruptions, it will be essential to understand and address these dynamics. The findings from this study enhance our understanding of how mental health influences learning in online settings and provide guidance for developing more resilient and supportive educational frameworks.

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