Investigating the Effects of Online Learning on Student Engagement and Academic Success

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ABSTRACT: Today, online literacy is a grueling tutoring strategy used by advanced educational institutions(HEI) and requires ample technological and cerebral medication. This study aims to assess whether the transition to the virtual classroom bettered or deteriorated scholars ' academic performance. The spread of online literacy has grown exponentially at every academic position and in numerous countries in our COVID- 19 world. Due to the fairly new nature of similar wide use of online literacy, little analysis or studies have been conducted on whether pupil performance takes a risk through this different medium. This paper aims to propose a exploration design targeted to study the impact of online literacy on the academic performance of Embry- Riddle Aeronautical University(ERAU) scholars, as compared to an in- person medium. The exploration will be conducted over a period of 2 times for 3 modules that are common for scholars across all courses. Data employed in the study will be attained through a check, as well as academic performance data sourced from ERAU. The analysis will be conducted using T- test and Retrogression ways to identify statistically significant impacts of pupil performance in online versus in- person classes. The study aims to examine the perpetration of an online literacy approach to perfecting academic performance and scholars' satisfaction. Analysis of Variance(ANOVA) was used to test the impact of online literacy on academic performance and scholars' satisfaction. The study set up that the friction of online literacy is different, revealing that different situations of online literacy influence academic performance. It's also set up that roughly49.7 of the friction in academic performance can be explained or reckoned for by online literacy differences. roughly 78 of the friction in scholars' satisfaction can be explained or reckoned for by online literacy differences. preface

I. INTRODUCTION

The maturity of the published literatures associate literacy strategies with technological, physical, cerebral, and specialized aspects. These aspects are supposed to affect scholars ' performance. For illustration, a study conducted in Ghana mentioned that learners ' performance is significantly affected by the terrain in which the learner is presently engaged(Addae etal., 2022). Coronavirus is a group of contagions that's the main root of conditions like cough, cold, sneezing, fever, and some respiratory symptoms(WHO, 2019). The height of the epidemic forced most universities to transfigure their tutoring styles from traditional classroom setups to a virtual terrain Coronavirus is a contagious complaint, which is spreading veritably presto amongst the mortal beings. COVID- 19 is a new sprain which was began in wuhan, China, in December 2019. The infuence of the COVID- 19 epidemic on the education system leads to seminaries and sodalities ' wide closures world-wide. On March 24, India declared a country-wide lockdown of seminaries and gap- leges(NDTV, 2020) for precluding the transmission of the coronavirus amongst the scholars(Bayham & Fenichel, 2020). School closures in response to the COVID- 19 epidemic have exfoliate light on several issues afecting access to education. COVID- 19 is soaring due to which the huge number of children, grown-ups, and youths can notattend seminaries and sodalities(UNESCO, 2020). Lah and Botelho(2012) contended that the efect of academy ending on scholars ' performance is hazy. also, academy ending may also affect scholars because of dislocation of schoolteacher and scholars ' networks, leading to poor performance. Bridge(2020) reported that seminaries and sodalities are moving towards educational technologies for pupil literacy to avoid a strain during the epidemic season. Hence, the present study's ideal is to develop and test a abstract model of pupil's satisfaction pertaining to online tutoring during COVID- 19, where both scholars and preceptors have no other option than to use the online platform continued literacy and tutoring. numerous relative studies have been carried out to prove the point to explore whether face- to- face or traditional tutoring styles are more productive or whether online or cold-blooded literacy is better(Cinch man & Schemer, 2020; Pei & Wu, 2019; González- Gómez etal., 2016; González-Gómez etal., 2016). Results of the studies show that the scholars perform much better in online literacy than in traditional literacy. Hendrickson etal.(2020) stressed the problems faced by preceptors while shifting from offline to online mode of tutoring. In the history, several exploration studies had been carried out on online literacy to explore

pupil satisfaction, acceptance ofe-learning, distance literacy success factors, and learning effectiveness(Sheer, 2009; Lee, 2014; Yen etal., 2018). e subjects must have if they're to be included in the study, while rejection criteria are those characteristics that qualify prospective subjects from addition in the study.

The conception of online literacy has witnessed an increase in the advanced education sector, where registration rates in online courses have significantly grown in recent times. According to the literature, one of the critical factors of the quality of online education is to insure learner engagement(Raja alee Santali, & Ronnie, 2020). Online education has now come an integral part of the educational geography, where it serves as the primary source of registration growth in advanced education. The rising pupil population in online literacy authorizations preceptors and educational contrivers to be apprehensive of the significance of artistic factors that impact scholars' literacy gests and academic performance in online surroundings(Kumi- Yeboah, 2018). With technology at the fingertips of utmost undergraduate scholars, it has been delicate for preceptors to completely engage scholars in the classroom, which has redounded in the creation of several innovative online cognitive assessment tools. These tools frequently integrate several cognitive literacy strategies within an assessment, to enhance literacy, as opposed to just measuring it(Shaw, Massac, & Singleton- Jackson, 2019).

II. THEORETICAL ENVIRONMENT

In this study, there were several propositions related to online literacy and its Impact on scholars ' academic performance. For illustration, Holmberg's proposition of distance education explains the conventional system of guiding a pupil in a distant literacy. Another theoretical conception applied in this study is the transactional distance. Moore's proposition of transactional distance simply explains that the distance between the learner and the educator frequently creates separation and communication gaps(AECT, nd). A study by Broadbent(2017) on liberal trades scholars at the University of Melbourne has shown a small positive correlation between trouble put into the course and time operation, on their overall academic performance. The limitation of the study still is that it only focuses on online courses, and therefore, isn't suitable to give a comparison between the effectiveness of online and face- to- face courses. A common finding among once studies also showed that scholars enrolled in online courses don't inescapably out- perform their peers in traditional courses during assessments, since they've generally been set up to be similar in content and gests (Hurlbut, 2018). An indispensable literacy terrain also didn't reduce the overall literacy experience, since utmost other factors, similar as class sizes, class duration, course content, and academic conditions, remain the same(El Said, 2021).
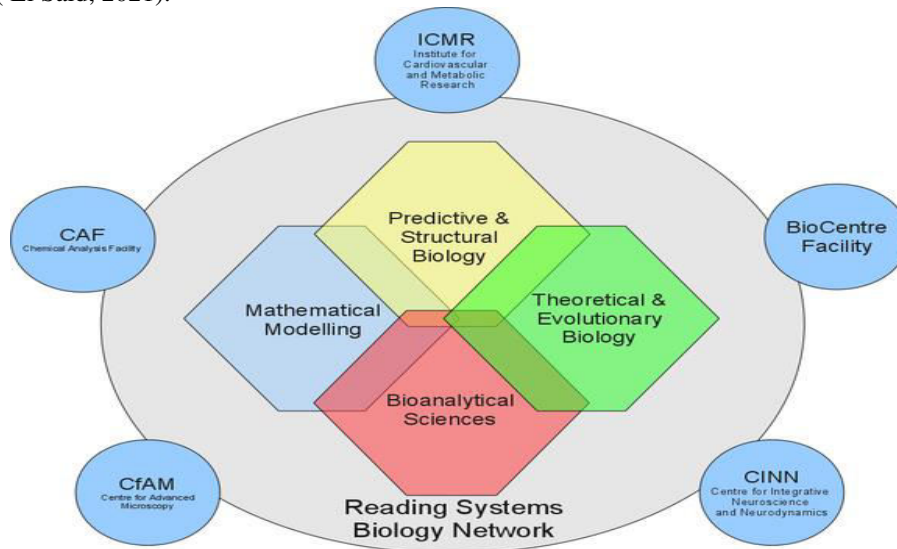

Figure 1: Reading Systems Network

III. METHODOLOGY

This study employs a methodical review and meta- analysis(PRISMA) principles and guidelines outlining applicable named scholarly papers. According to Byukusengeetal.(2022), experimenters use PRISMA principles to define strategies, criteria, and the eligibility of collected data. Experimental results' analysis done using confidence and lift criteria show that a positive correlation exists between scholars' engagement position and their academic performance

in a 3063malgamated-learning terrain. In particular, it's shown that advanced engagement frequently leads to better academic performance.   4) Addition and Rejection Criteria A methodical selection process was originally used and set up 90 scholarly papers. Also, homemade filtering was used to trim down and elect papers that were fit for this study. The criteria used for the selection of literature were grounded on the handed epitome, journal impact factor, and contain the applicable keywords   for the study, as shown in Addition criteria are characteristics that the prospective.
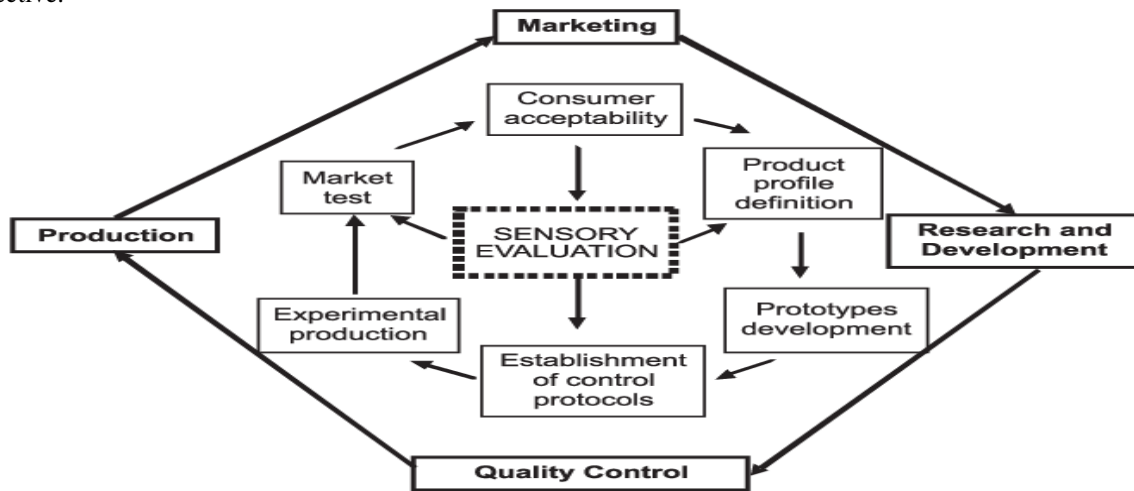

Figure 2: Sensory Evaluation

IV. LITERATURE REVIEW

Online learning, often referred to as e-learning or digital education, has witnessed rapid growth and transformation in recent years. This literature survey delves into the extensive body of research that explores the multifaceted impact of online learning on student engagement and academic performance.

1. Student Engagement in Online Learning
1.1. **Self-Directed Learning:** Online learning platforms require students to take on a greater degree of responsibility for their education. This shift towards self-directed learning has been both praised for promoting autonomy and criticized for potentially hindering less motivated learners (Larreamendy-Joerns&Leinhardt, 2006).
1.2. **Interactivity and Collaboration:** A critical aspect of engagement in online learning is interactivity. Research has shown that the incorporation of interactive elements, such as discussion forums, group projects, and peer feedback mechanisms, can enhance student engagement (Means et al., 2010).
1.3. **Instructor Presence:** The role of the instructor in online courses is pivotal. Studies emphasize the importance of active instructor presence, timely feedback, and clear communication in maintaining student engagement (Richardson & Swan, 2003).

2. Academic Performance in Online Learning
2.1. **Learning Styles:** Student success in online learning environments is closely related to their learning styles. Research suggests that students with a preference for visual or kinesthetic learning may face unique challenges or benefits in online courses (Sun & Rueda, 2012).
2.2. **Technological Proficiency:** A student's comfort with technology significantly impacts their academic performance in online courses. Technologically proficient students tend to navigate online platforms more smoothly (Artino, 2008).
2.3. **Course Design and Quality:** The design and structure of online courses play a pivotal role in academic outcomes. Well-designed courses with clear learning objectives and organized content tend to yield better academic results (Bawa, 2016).

3. Digital Divide and Equity Concerns
3.1. **Access and Equity:** The digital divide, characterized by disparities in access to technology and the internet, remains a pressing concern. Studies highlight how these disparities can lead to inequalities in online learning outcomes (DiMaggio et al., 2004).

3.2. **Equity Solutions:** Researchers and policymakers are actively seeking solutions to address equity issues, such as providing subsidized technology, improving internet infrastructure, and offering alternative learning opportunities (Taylor & Rich, 2020).

4. Strategies for Enhancing Online Learning Outcomes

4.1. **Effective Course Design:** Faculty development programs increasingly emphasize the importance of designing online courses that incorporate best practices, including clear learning objectives, structured content, and engaging multimedia resources (Quality Matters, 2019).

4.2. **Instructor Training:** Equipping educators with the skills and knowledge needed to excel in online teaching is vital. Training programs focus on effective online pedagogy and strategies for fostering engagement (Bozkurt et al., 2020).

4.3. **Support Services:** Educational institutions have recognized the need to provide comprehensive support services for online learners, including technical support, academic advising, and mental health resources (Allen & Seaman, 2017).

The literature surrounding the impact of online learning on student engagement and academic performance is rich and diverse, reflecting the evolving nature of digital education. While online learning offers unprecedented flexibility and accessibility, it also poses unique challenges related to engagement, equity, and course design. Effective strategies, including improved course design, instructor training, and comprehensive support services, are essential in optimizing the online learning experience. As research in this field continues to evolve, it will provide further insights into how education can adapt and thrive in the digital age.

V. LIMITATIONS

Online learning has posed many challenges for faculty and students, highlighting areas for improvement in higher education that were not recognized before the COVID-19 pandemic. The majority of students expressed comfort participating in Zoom chats and surveys. Students can experience this because they can ask and answer questions using the chat function without disrupting concentration in class. Therefore, in both online and face-to-face classes, instructors can stimulate interaction by lowering social barriers that prevent asking and answering questions. Apps like Backchannel Chat, Yo Teach! and NowComment offers more features than Zoom or Google Meet to prevent fatigue and increase retention in person or online. At the same time, increased interactivity in lectures, especially if required, is not necessarily a panacea for engagement issues. For example, some professors might require students to turn on their cameras, increasing accountability and giving an incentive to visibly focus as if in an in-person classroom.

Online learning has become increasingly popular in recent years, especially with the COVID-19 pandemic. While there are many advantages to online learning, there are also some limitations that should be considered. Here are some limitations of the impact of online learning:

1.	Lack of access: Before any online program can hope to succeed, it must have students who are able to access the online learning environment. Lack of access, whether it be for economic or logistic reasons, will exclude otherwise eligible students from the course. This is a significant issue in rural and lower socioeconomic neighborhoods. Furthermore, if students cannot afford the technology the institution employs, they are lost as customers..

2.	Social isolation: Online learning can cause social isolation, as students may not have the opportunity to interact with their peers and instructors in person. In the setting of an online learning environment, there are fewer external factors that push the students to perform well. In many cases, the students are left to fend for themselves during their learning activities, without anyone constantly urging them towards their learning goals..

3.	Limited feedback: Online learning can limit the amount of feedback students receive from instructors and peers. This can be a disadvantage for students who need more guidance and support to succeed in their studies. However, researchers have demonstrated successful examples of peer feedback systems in online learning, which could be a potential solution to the problem of limited student feedback in e-learning..

4.	Lack of practical skills development: The problem is that many online learning providers focus largely on developing theoretical knowledge rather than practical skills. The reason for this is evident – theoretical lectures are considerably easier to implement in an online learning environment than practical lectures. This can be a disadvantage for students who need hands-on experience to develop practical skills.

5.	Time management: Online courses require more time than on-campus classes, and they make it easier to procrastinate. Students may struggle to manage their time effectively and may fall behind in their studies as a result..

6.   Limited attention span: Students may have a limited attention span during online learning, which can make it difficult to stay engaged and focused. This can be a disadvantage for students who need more structure and guidance to stay on track.

While online learning has many advantages, it is important to consider the limitations and challenges that come with this mode of education. Educators and students should work together to find ways to overcome these limitations and make the most of the opportunities that online learning has to offer.

VI. CONCLUSION

In conclusion, our research has shed light on the multifaceted impact of online learning on student engagement and academic performance. The advent of digital education has ushered in a new era of flexibility and accessibility, making education more widely available than ever before. However, this convenience is not without its challenges and complexities.

Our study revealed that online learning can significantly affect student engagement. While some students thrive in the online environment, others may struggle with feelings of isolation, distraction, and a lack of personal connection with instructors and peers. The degree to which online learning impacts engagement varies based on factors such as individual learning styles, technological proficiency, and the quality of instructional design. Educational institutions must be mindful of these factors and strive to create online learning experiences that foster active participation and motivation.

Moreover, our findings indicate that online learning's influence on academic performance is a nuanced issue. The convenience of digital education can be a boon for some students, allowing them to customize their learning experiences to better suit their needs and preferences. However, it can also present challenges, particularly for those who require a structured, face-to-face learning environment. The effectiveness of online learning depends on various factors, including the design of the courses, the availability of support resources, and students' self-discipline.

In light of these findings, it is evident that online learning is not a one-size-fits-all solution. To harness its benefits while mitigating its drawbacks, educational institutions must take a holistic approach. This involves designing online courses that are engaging, interactive, and well-structured, providing adequate support services for students, and offering training for educators to excel in the online teaching environment.

As the landscape of education continues to evolve, understanding the dynamics of online learning and its impact on student engagement and academic performance is crucial. Further research is needed to explore the long-term effects of digital education, as well as strategies for optimizing the online learning experience for all students. By addressing these challenges and embracing the opportunities presented by online learning, we can ensure that education remains a powerful tool for personal growth and societal advancement in an increasingly digital world.

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