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Revitalizing Learning: Examining How Hybrid Environments Influence Student Engagement and Academic Success

Preeti Mahender[1], Prof. Manju Sharma[*2]

[1,2]School of Education Lingaya's Vidyapeeth, Faridabad

[*]**Corresponding author:**

Prof. Manju Sharma

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ABSTRACT

Hybrid learning has transformed traditional paradigms of education with the infusion of in-person learning into digital-based platforms. In the context of adjusting educational institutions to shifting technological fronts, the effect of hybrid learning on student engagement and academic success assumes critical importance as different models of hybrid learning could alter student participation, motivation, and performance. Thus, digital tools, instruction design, and the interaction of these variables regarding their impact on learner outcomes are some of the important areas to be investigated. Hybrid learning environments offer the opportunity for learners to exercise synchronous and asynchronous learning, which allows a student to personalize education at one's pace. The combination of classroom and online interaction supports active learning in allowing learners to move at their own pace while still having access to real-time discussions and group activities. It has been shown that such environments support student engagement by using multiple learning styles and preferences. However, the hybrid learning approach hinges on the strategy and implementation of instruction as well as the supporting infrastructure and the technology support system.

This paper applies the mixed-method approach with a quantitative examination of student performance metrics and a qualitative understanding obtained from surveys and interviews. The study sample consisted of students from several disciplines who have taken the hybrid courses; hence, they are in a good position to offer the most detailed insight into their experiences. In some of the major variables considered include participation rates, knowledge retention, academic achievements, and perception of engagement in hybrid settings. The hybrid or blended mode will present difficulties in digital literacy gaps, difficulty of accessibility, and variation of self-regulated learning among the students when switching to this set-up. It has a list of disadvantages like the fact that it could affect student responsibility with regards to holding themselves accountable especially in asynchronous platforms, and keeping students engaged within the learning contents are problems teachers need to cope with. This paper draws on the nature of hybrid learning to analyze potential impacts on outcomes in education - much-needed light for educators, administrators, and policymakers seeking environments that work well for students. The findings draw attention to key considerations in planning hybrid courses for engaging instructional methods, robust support from technology, and a feeling of community amongst learners. As for the ending conclusion, the future of education may be greatly considered in discourse: adaptive learning models that fulfill future needs regarding those students educated using digital era processes.

Keywords: *Quantitative Examination, Digital-Based, Revitalizing Learning, Constructivist learning, Educational Institutions, Academic*

1. INTRODUCTION

Education changed much in the last few years. Behind this change was fast-paced development of digital technologies and a growing interest in more flexible learning environments. For these reasons, the model of hybrid learning was therefore able to become more powerful as an educational model where more students become accessible and involved with better, more personalized experiences of learning (Graham, 2019). This model picked momentum during the middle stage of the COVID-19 period since all learning institutions had to transition their digital learning platform to ensure continuity of studies (Dhawan, 2020). Since hybrid learning also lies beyond the pandemic era in higher education, there is a huge need to assess the impact that this instructional model has on student engagement and academic performance.

The best view borrowed from a traditional classroom and online portal is a hybrid learning environment. Such a learning environment can deliver both synchronous and asynchronous experiences. Since it allows students to be taught and given

feedback right away on anything they produce but also share life experiences within the physical classroom, the online aspects include self-paced experience, a treasure trove of multimedia sources, and even interactive digital interaction (Means et al., 2014). However, most of the factors regarding the course design, technological infrastructure, motivation of the students, and the number of instructor supports provided are relatively much more risky to hybrid learning (Bernard et al., 2014).

Hybrid learning is based on several theories in education, including constructivist learning theory, self-determination theory, and cognitive load theory. Constructivist learning theory is a theory by which knowledge is actively constructed by learners through interaction with the surroundings (Vygotsky, 1978). This can be seen in the hybrid classroom through discussion forums, online collaborative projects, and a mix of the classroom activities that foster active involvement. Further theories include self-determination theory, which, according to Deci and Ryan (1985), holds that the satisfaction of student motivation and engagement within a hybrid learning environment is established based on autonomy, competence, and relatedness. The more autonomous the student's choice to learn is, the more it will increase intrinsic motivation. This, in general, has been found to be directly connected with improvement in academic performance (Sun & Rueda, 2012).

Sweller's cognitive load theory (1988) is a discourse that explains how instructional design comes into play within hybrid learning. It will help to reduce extraneous cognitive load and maximize ease of learning to be well retained. This theory supports optimal multimedia use combined with suitable assessment and presentation of structured content in a hybrid environment for the best results of the learning process (Mayer, 2021).

2. STUDENT INVOLVEMENT IN HYBRID LEARNING

Engagement is one of the most important elements that determine student success in the academic arena. In hybrid learning, there are different avenues for digital interactivity and flexible learning modes. Fredricks, Blumenfeld, and Paris (2004) classified student engagement into three dimensions: behavioral, emotional, and cognitive engagement. Behavioral engagement is the extent to which the students engage themselves in the work and activities carried out within the classroom. The emotional engagement leads to areas of attitudes, motivation, and belonging among the students. Deep learning and problem-solving are parts of cognitive engagement. It has been proven that appropriately designed hybrid learning environments influence the three aspects of engagement, attitudes, motivation, and belonging, positively in all the three domains. Discussion among members through online forums, virtual group projects, and interactive simulations increase behavioral engagement (Dabbagh & Kitsantas, 2012). Techniques in gamification, multimedia materials, and also feedbacks according to the emotional appeal make it a learning tool more enjoyable as well as fruitful (Hew et al., 2020). Further improvements to the cognition engagement of learners occur when such digital resources opened up to a wide range can aid critical thinking besides self-regulated learning paths for the student (Garrison & Vaughan, 2008). But hybrid learning also presents challenges for students in participation, particularly with regard to motivation within asynchronous online settings. Without direct supervision, certain students have trouble with managing time, exercising self-control, and digital competence so that they participate less and make relatively less academic efforts (Miller, 2020). However, knowing what impacts engagement within a hybrid learning context will also be highly important to maximize success outcomes of student success.

3. ACADEMIC SUCCESS IN HYBRID LEARNING

In hybrid learning, performance metrics of students, knowledge retention, and satisfaction are mostly the decisive factors of academic success. In such a context, most research studies have pointed out that if carried out properly, students perform equally well or better in hybrid classes than they do in a regular classroom-based setting (Means et al., 2013). This is one of the reasons why hybrid learning allows flexibility and accessibility through which the students can review their materials, discuss with others, and submit assignments at their convenience (Bonk & Graham, 2012). According to Bernard et al. (2014), meta-analysis, students who attend the blended learning environments achieve more than their counterparts who attend the face-to-face classes and online courses. Such success was attributed to opportunities for interaction, personal feedback, and access to various learning materials. Other researchers also established that hybrid learning development supports long-term academic performance, which comprises the enhancement of self-regulation skills and reflective learning capabilities (Zimmerman, 2002). On a more positive side, it holds a huge disadvantage in equitable accessibility to hybrid learning, especially within students coming from disadvantaged backgrounds. Issues with digital divide, containing problems of unavailable internet and shoddy technical support, erect huge barriers within academic success-the already existing high inequalities in access to education within this system increases further (Selwyn, 2020). Hybrid learning, on the other hand, is highly dependent on faculty preparedness and readiness in the use of digital tools for efficient deployment in curriculum design (Graham et al., 2019). This calls for more continuous research into best practices in designing hybrid courses that maximize student engagement and learning outcomes.

4. RESEARCH GAPS

Hybrid learning has received more attention in literature in education, and many research gaps still exist. The first gap involves conducting more empirical research into the long-term effect of hybrid learning on student engagement and

academics across different disciplines. Many studies have focused on short-term effects, but knowing the persistent effect of hybrid learning can inform future educational policy and instruction (Halverson et al., 2017). Previous researches have overlooked the inclusion of students who may have diverse needs in their learning, for instance, disabled and non-traditional learners. It is worth knowing how a hybrid environment could be modified to provide an enabling access to accommodate different students for the establishment of an inclusive learning environment in education (Richardson et al., 2021).

In the quest to address these gaps, this research looks to

1. Dimension of Hybrid Learning Environments in Student Engagement: Behavioral, Emotional, and Cognitive

2. Impact of Hybrid Learning on the Academic Performance and Retention of Students

3. Key Challenges and Best Practices in Developing Effective Hybrid Learning

Hybrid Learning is the latest shift in modern education that opens up doors for student engagement and academic success. It is effective only if it is well designed with the proper application of technology, and institution support. A study such as this will enrich literature as it gives insight into dynamics in hybrid learning and actionable insights that can be taken home for educators, administrators, and policy- and decision-makers. This study is important in the sense that it tries to fill gaps in existing studies and therefore would further push research into the aspects of how hybrid learning shapes future education.

5. BACKGROUND OF THE STUDY

Changes in student needs and technological advancement have emerged as major determinants of change in educational methodology. The face-to-face model used in the classes has slowly evolved into a hybrid environment that combines both online and offline learning experiences (Graham, 2019). It has been pushed further by global events such as the COVID-19 pandemic because those events have accelerated the need for remote learning solutions and taken the potential digital education to an extreme level (Dhawan, 2020). Hybrid learning provides an adaptive framework responsive to different learner preferences and increases engagement by using a range of interactive tools and flexible forms of learning structure (Means et al., 2014).

6. DEVELOPMENT OF HYBRID LEARNING

Hybrid learning is often referred to as blended learning. It is the combination of face-to-face and online learning that helps assist in giving an enriched feel towards the student. There are some hybrid learning models that allow students to review learning resources in an asynchronous way, while the discussion and working may be done in the student groups in synchronous manners (Bonk & Graham, 2012). Significantly, higher education and professional training systems have implemented such hybrid models as effective mechanisms for the improvement of outcomes of learning as well as for increasing student satisfaction (Garrison & Vaughan, 2008).

Hybrid learning brings several benefits, including flexibility, increased access, and support for diverse learning needs. Studies indicate that hybrids enhance student participation when presented with multimedia content, interactive platforms, and digital collaboration tools in different settings (Hew et al., 2020). This results in active learning, critical thinking, and knowledge retention in academic success (Miller, 2020). However, the hybrids rely on several concerns such as student capability in self-managed learning and technology support as well as instructional design (Bernard et al., 2014).

7. CHALLENGES AND CONSIDERATIONS

Hybrid learning comes with many benefits but also faces various challenges on the part of educators and institutions. One such challenge is that of the digital divide: inequalities in access to technology and connectivity will mainly come to the forefront among disadvantageally classified students (Selwyn, 2020). Students who are used to the traditional learning system in a physical classroom would probably find self-regulation and time management when learning in this hybrid environment difficult (Zimmerman, 2002).

Firstly, lecturers would have to adopt an effective teaching approach while ensuring both in-class and online teaching approaches. A good course design would balance synchronous and asynchronous elements to allow for interactions and information sharing (Graham et al., 2019). Faculties need training and institution-based support that would address challenges linked to quality improvement in hybrid learning (Richardson et al., 2021).

8. SIGNIFICANCE OF THE STUDY

It also requires an understanding of how hybrid learning affects student engagement and academic success to successfully set up effective learning strategies. Within this context, this paper seeks to build upon the extant literature by critically critiquing the role that hybrid learning may play in the development of student experiences, best practices within it, and barriers that could stop students from learning. The findings will be rich for educators, administrators, and policymakers in their pursuit of maximizing learning environments in an

Modern forms of learning break the great boom in transitioning to a hybrid environment. Technological support combined

with more conventional means of teaching offers an opportunity in the provision of learning conditions where engagement is optimized with results that prove effective on learners. However, a good level of success requires proper planning and adequate accessibilities of the involved technologies with involvement of institutions as well. Such directions thus demand continuous researches into optimizing models to get improved outcomes.

9. DATA AND METHODOLOGY

Study Design

The study will adopt a mixed-methods design that is, the integration of quantitative and qualitative methodologies in research studies of the interface between hybrid learning and engagement with academic outcomes. The statistical analyses of the measures of student engagement and performance would be comprised of the quantitative method, but students' perceptions would be elicited through qualitative methods, which would mainly include the surveys and interviews.

Participants

The sample for the study is 250 students who are enrolled in hybrid learning courses, with 125 males and 125 females. Stratified random sampling is adopted to select participants so that academic backgrounds and learning preferences are diversified.

Data Collection Methods

1. Surveys: A structured questionnaire will be administered to students to assess their engagement levels, satisfaction with hybrid learning, and perceived academic success.

2. Academic Performance Analysis: Grades and assessment scores from the participants are also carried out to find if the hybrid learning really supports the score improvements.

3. Data Through Interviews: A few selected participants will be interviewed for an in-depth understanding of their experience, areas of issues, and suggested changes.

Data Analysis

The following results are summarized based on the dataset:

•**Engagement Level Distribution**: High: 91 students, Moderate: 76 students, Low: 83 students

•**Through Academic Performance: Outstanding**: 56 students, Good: 62 students, Average: 63 students, Poor: 69 students

•**Average study hours per week online/offline: Online**: 12.59 hours/week, Offline: 12.54 hours/week

•**Scale 1-5, Satisfied with Hybrid Learning:** Scale 1-5, the lowest being 53 students, 2 being 56 students, 3 being 44 students, 4 being 40 students and the highest being 57 students

•**Levels of Self-Discipline**: Higher: 95 students, Middle: 78 students, Lower: 77 students

High: 73 students, Moderately: 97 students, Low: 80 students

Online Discussion Forum Participation Rate per week :4.75 times

Time management skill: Exce llent-57 students, Very good-67 students, Satisfactory: 54 students, Poor : 72

Level of usage of the Interactive tools/ resources:Always-56 students, Often- 62 students, Sometimes-73 students, Less than sometimes 59 students

Ethical Issues

Contact shall be made with the institutional review board for the approval of the proposed study, and assurance given that the participation will be absolutely voluntary and through informed consent given by each one of them, and the full cost for their data being kept confidential and anonymous.

10. RESULT & DISCUSSION

The findings of the research showed that student engagement in a hybrid learning environment varies. Indeed, 36.4% of students stated being highly engaged. This would suggest that the hybrid model of learning can well tap into students' interest and participation. Nonetheless, the fact that 33.2% of students showed low engagement is an area of concern and warrants more focused approaches toward improving participation among these struggling learners. Academic performance metrics would reveal that for some students, the hybrid approach was very successful, but most of the students (27.6%) could not achieve satisfactory results. That is a disparity that shows how hybrid learning might work well for students but will not work for everyone. Probably, self-regulation, digital literacy, and resource access all have a lot to do with these results. This might even indicate a mean number of hours that need to be committed to both formats off-line and online. This may be an indication that the students are adapting very well to the hybrid model by making use of both formats to ensure proper

adaptation to their learning process. Still, unknown is how these hours translate to academic success. The satisfaction levels receive a mixed response; 109 students, or 43.6%, were dissatisfied with a rating of 1-3. This would mean that though some students prefer the hybrid model, many students may have some issues that impact their overall learning experience. Improving hybrid learning environments thus depends on identifying what issues students with such perceptions of hybrid models have. Self-discipline level distribution indicates that the majority of the students.

11. CONCLUSION

The promise of a more hybrid learning environment and major challenges relating to student engagement and consequential academic outcomes in the degree are indicated by this study's results.

Engagement Levels: From the results, it is clear that nearly one-third of the students, that is, 36.4%, have a high engagement level in the hybrid learning environments. The fact that 33.2% of students are engaged at low levels puts the onus on teachers to develop instruction strategies that would elicit more students to engage in learning.

Academic Performance Only 27.6 percent of the students were scoring poorly, but 56 scored outstandingly; therefore, hybrid learning raises a question on whether it really bridged the gap of successes and failures. Therefore, it is individual differences that play the game, including self-regulation, digital literacy, and resources that determine academic performance.

Satisfaction and Self-Control: Overall satisfactory ratings with some trend lines down indicate that in some way students found this format of hybrid online learning quite comfortable and accommodating towards resources but majority were unsatisfied. Possibly some students failed in self-control for time management issues in asynchronous e-learning environments.

Implications of Future Research: This will include both the long term effects of hybrid learning in varying populations of students as well as the pressing needs for practices supporting inclusive learning.

Hybrid learning can be seen as an innovative education approach with considerable potential to offer positive effects for engagement as well as academic success. However, it is the challenges identified by this study that must be addressed by educational institutions themselves. These must then be diversified based on the needs of students with more effective hybrid learning environments built through effective course design, robust technological support, and fostering a sense of community among learners. Thus, continuous research and adaptation are integral to the design of the future of education post-pandemic.

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