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Learners' Acceptability of Adapting the Different Teaching Methodologies for Students

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ABSTRACT

The learning methodologies used by students are directly proportional to their abilities to learn. Various learning methodologies have been used to gain student acceptance and satisfaction with the module taught by the teacher. In this article, the authors approach the different methods and analyze these methodologies. To determine the impact, they considered both the face-to-face learning process and the online mode of learning to determine the exact effect on the student. So, to address this, a two-way survey was conducted. The first revealed the student satisfaction rate with the course approached through the online mode of learning. Second, a comparative study was made using ANOVA methods between the online way and the face-to-face methodology. A significant observation was made in the test, and it shows that the hybrid model of teaching provides better performance than the face-to-face method.

KEYWORDS

ANoVA Testing, E-Learning, Face-to-Face Learning, Face-to-Face Teaching With E-Learning

INTRODUCTION

New teaching approaches are altering educational environments worldwide and assisting students in achieving higher academic achievement. We examine some of the most innovative educational practices that have developed in recent years and that every teacher in the twenty-first century should be familiar with. Face-to-face learning is a teaching method in which a group of students is taught about course content and learning material in person. This allows a learner to interact with an instructor in real-time. This is the most commonly used method of instruction. Increased student contact is advantageous to both the learner and the teacher. Students are held accountable for their performance in face-to-face learning on the specific day and time of the class meeting. Students retain more information and form stronger bonds with their classmates when they study face-to-face. When students meet with

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a teacher face-to-face, there are vast cultural differences in how they learn. Traditional face-to-face educational instruction has largely been replaced in many modern educational systems by methods that cater to the needs of individual students. Traditional teaching methods are rapidly evolving as a result of global technological advancements. The increased use of technology, even in conventional classrooms, has changed how lessons are taught and received.

While numerous teaching methods are available, most of the traditional approaches taught in the classroom can be used just as effectively online. Before making a decision, consider your teaching philosophy, objectives, as well as the topic area and demographics of your students. Digital technologies have enormous promise for expanding our understanding. You may learn digitally whenever and wherever you choose, using any variety of techniques. Learning in the digital age has both implicit and explicit components, including both reactive and deliberate instruction. A paradigm for fostering more effective digital learning tools and practices is proposed at the end of the study. Hence these are the different characteristics of the different learning methodologies.

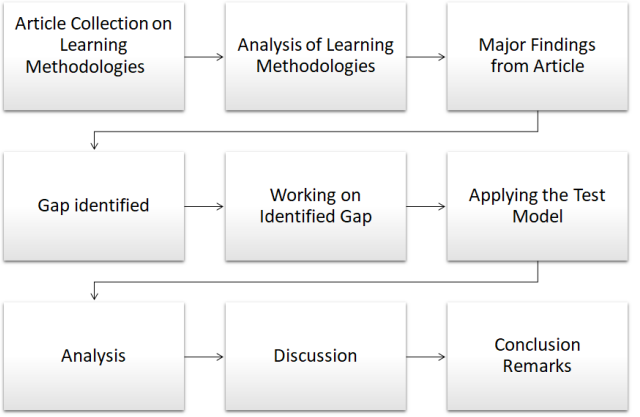
These different Methodologies address the different approach adopted in the teaching learning approach. There is also the necessary review is to be done to find out the appropriate teaching learning methodology. These Learning methodologies solves the problem of every student those who are not able to identify the physical appearance in the class. So these methodologies make convenient approach of learning to these students. Here in this article we are doing the comparison between the Hybrid mode of learning and Non hybrid mode of learning in in the teaching and learning. Figure 1 describe the approach of the research which is taken in the consideration in this article

LITERATURE REVIEW

The below literature contains the different methodologies and techniques, which is practice among the student to deliver the quality education. The study investigates a Salinas et al. (2011) novel learning to platform that includes an e-portfolio. The goal was to mix a virtual learning environment, where students could compile thoughts and reflection flections and create their work, with social networks, which are lovely communication tools. The study seeks to determine whether this independent approach to learning supports collaboration and reciprocity, fostering a knowledge-building learning to process.

It is not scientifically valid to Liu and Chen (2015) base judgments of practice teaching on attendance and course outcomes. An important component of this essay is how to conduct a scientific examination of practice teaching from several perspectives. This assignment is conducted using a novel evaluation method known as fuzzy comprehensive assessment. The results are based on five

Figure 1. Review Architecture of article



targets, membership determination, and membership computation. This assessment method, which focuses on competency assessment and teaching evaluation, aids in breaking down knowledge barriers and improving teaching quality during the teaching process.

BSM (Business study mission) this assessment Chong et al. (2021) method, which focuses on competency assessment and teaching evaluation, aids in breaking down knowledge barriers and improving teaching quality during the teaching process. BSMs, when well-structured, provided "deep" learning opportunities that extended beyond industrial tourism. Students gained skills related to sustainability and entrepreneurship in urban settings. Students' learning results may be examined fairly and impartially in this evaluation method, encouraging them to pursue independent study possibilities and improve their employment prospects.

A living case is a Grassberger and Wilder (2015) semester-long inquiry of a current, continuing issue that the participants complete. Students worked with a real client to tackle a real problem in their assignment. Learners reported that the living example made them feel more connected to and engaged with the course material. Furthermore, students were deemed to have developed - their knowledge, abilities, and mindsets had improved throughout the course, and these advancements are valuable and used both in their academic and personal lives. Through watching a real-world scenario, students can learn by studying a living case. The case should be created in a live context, allowing students to gain hands-on experience and real-world understanding. The case study focuses on a teaching and learning technique used to boost student engagement and outcomes.

More opportunities for Werpetinski (2017) engineering students to participate in real-world activities are advocated. This article describes the design and rationale for a two-tiered service-learning course model that enables transdisciplinary engineering and socio-technical issue resolution in the community. Community-led projects, which also employ the strengths of student leaders as project managers, found a way beyond the intrinsic restrictions of disciplines and project resources and the limitations of scope and resource allocation in community work. The consequences of community-engaged education will be investigated.

Mobile Learning and other Hamdan and Ben-Chaban (2013) technological applications are difficult for many students to grasp and can be intimidating for those who have never seen them before. This study will look at how Mobile Learning can help students significantly improve their classroom learning experience. Furthermore, we will investigate pupils' lack of personal and individual abilities, which is not an academic obstacle but rather a challenge of this sort. This study covers a variety of methods for measuring student achievement.

To integrate qualitative Battista and Manaugh (2018) GIS into an undergraduate urban field studies course to include it in a classroom where it had previously been missing. Teaching quantitative GIS to students may help them understand the modern spatial theory and geographic research methods while working on real-world projects based on research findings and field experiences from our four-year degree program. Furthermore, they identified recurring problems when presenting new research approaches to students who were unfamiliar with them. they finish by looking at how instructors in various settings might apply the concept in their classes.

Collage Editor is a Michailidis et al. (2010) compliance authoring tool for producing IMS-LD-compliant collaborative scripts. A group of 21 postgraduate students used collage editor to construct their CLFP-based scripts. The study's goal was completed by providing additional evaluation data about Collage's usability and efficacy as a tool for assisting people in creating CSCL scripts.

Many post-secondary Bates (2008) institutions in more economically developed countries have begun to employ online curriculum as the standard delivery method throughout their distance learning programs. This study investigates the expansion of digital training, institutions' reasons for embracing it, and their slow adoption of the technology. The author hypothesizes about the perfect conditions for online learning to be employed successfully in distant Chinese education.

This research will look Rogerson-Revell (2007) at the many online education choices available to foreign language educators. The study traces the evolution of the internet and computer-assisted lan-

guage training before highlighting various contemporary e-learning approaches. It demonstrates how trends such as online learning might aid in language instruction and offers examples of online learning tools established recently by the author and others. According to the article, tighter cooperation and sharing of ideas, resources, and goals between online learning and remote learning may be necessary to develop a fruitful e-learning resource.

Students must be actively involved Revere and Kovach (2011) in their studies in order to receive the most outstanding online education. Students will be more engaged if proper technique is used. Using technology in the classroom allows educators to increase student interaction and improve learning. Furthermore, classes with better administration are more likely to be established.

This action research was Abdelmalak (2015) conducted to learn about students' perspectives on developing a community of learners using Web 2.0 technologies. According to the study, teaching members should use Web 2.0 tools to help students improve their communication skills. This educational technology master's degree program at a medium-sized American university in the Southwest included an utterly online class. Google Docs and wikis had the most significant positive impact on students' perceptions of a learning community in the course.

The researchers identified Tu* (2005) online tools with broad capability and vast abilities to aid in the improvement of learning. Online learning technology could better use digital materials by including interactive technology as a supplement to presentation and storage capabilities. This work's scholarly communication, cognitive, and management technologies are cutting-edge, sound, and interactive. Using these factors, learners become actively engaged in online discourse, knowledge development, and mental model interchange.

Investigates relevant Friedman and Friedman (2013) published content while assessing the advantages of modern communication technologies in online learning. The internet-based technologies linked with social media include many Web-based developments such as blogs, wikis, online social networking, and virtual worlds.

The purpose of this study is to Buchanan et al. (2013) figure out why. A sample of UK university faculty members took a self-efficacy exam to assess their Internet comfort level. PCA found two significant barriers to adoption: institutional constraints within the University and the notion that the techniques are ineffective. According to the unified theory of technological acceptance and usage, technological adoption is more influenced by whether or not there are elements that help or hinder its use (TAM).

While some Cook (2014) myths exaggerate the benefits of online learning, many more do not. On- line learning increases flexibility, control, and analytics. To save money, you should study fundamentals rather than tools. There are authoring tools, content re purposing tools, and course templates offered. On the other hand, online learning delivers significant value through enhanced flexibility, control, and analysis.

Online learning has risen substantially Diaz (2010) in recent years, with a rising variety of free or low-cost Web 2.0 and emerging online learning resources becoming available. This chapter's research examines the process of implementing such tools used in learning and teaching. Copyright, intellectual property, customer service, and privacy are all covered.

The instructional approaches Bokhari et al. (2011) outlined below are designed to deliver a high-quality, engaging learning experience for teachers and students. The Course Management System (Moodle, Joomla, OLAT, JOJO CMS), the Smart Pen, the smart Pen, and the Interactive Board are among them (eBeam).

The Moodle platform Batanero et al. (2019) was customized to address better the particular demands of deaf and blind engineering students. In addition to addressing the requirements of autistic children, this paradigm has the potential to be broadened to accommodate other types of disabilities, allowing educators to adapt their resources to guarantee that all students have equitable access.

The student approach to inquiry (SAI) and online learning Ellis and Bliuc (2016) tools are essential indicators of course quality (SAOLT). The two surveys we utilized to measure SAI and SAOLT appear to be both valid and reliable. This influence will have a tremendous impact on teachers, particularly those who want to teach more effective learning strategies.

According to a recent Morrow and Bagnall (2010) study on online professional development learn- ing, educators who engage students in practices such as asking them to actively engage with local people, friends, and family as part of their professional development are vital and far-reaching. This chapter discusses making an online learning environment more engaging by combining online learning with a digital approach.

The study aims to develop Tkachuk et al. (2020) theoretical foundations, develop strategies, and validate their application in educating university students during the COVID-19 lockdown. COVID-19 lockdown entails adapting mobile ICT to online learning while still achieving the study goal. The authors used Plickers to demonstrate the Audience Response Networks technologies they created. There has also been researching on the development of mobile multimedia authoring tools that use augmented reality. The technology's efficacy was demonstrated in the lab.

The Open University of Ng (2007) Hong Kong uses Interwise, asynchronous e-learning system (OUHK) for online classes. Interwise is being implemented with enthusiasm by both students and tu- tors. Even if some students resent the system's one-way communication and teacher-control functions, others are pleased. Following that, the authors discuss the consequences for the practice of synchronous online learning at OUHK and in academia more broadly.

The academic study of technology Kear et al. (2016) has called into question commonly held beliefs about technology and its function in society. As the paper demonstrates, sociocultural factors have a significant impact on both technology and instructional technology. Some students only used the technologies on rare occasions, even though they did not always agree with them due to previous beliefs about education. Some students did not understand the pedagogical idea that supports the technology's use. The study's findings are summarized by highlighting how social technologies can be employed in education.

Web resources guide, Inan and Grant (2004) navigate and support instructional practices have var- ious flaws. Adaptive educational systems can alter the layout of hypermedia and how the material is presented and navigated. In terms of the overall structure and operation of the learning process, this study provides a fresh set of adaptive instructional methods. These concepts could serve as a foundation for future adaptive educational web application development.

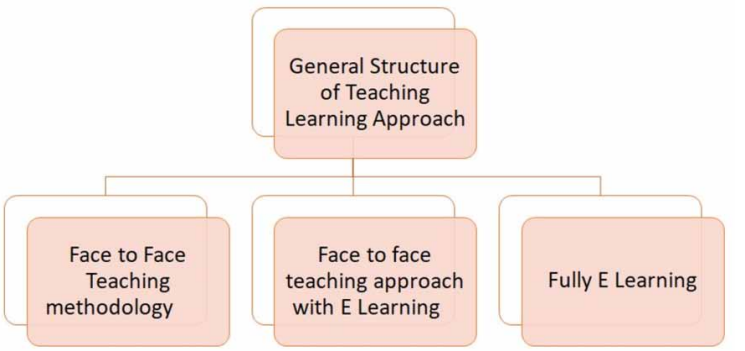
In this digital age, new and Niess (2016) emerging technology can be more beneficial to students and teachers. An in-depth examination of these tools demonstrates that, while they were not designed for educational purposes, they can assist students in various ways. A student may use technology as an inquiry tool, such as tracking temperature measurements in their environment. A small group of students may use Google Docs as a collaborative tool to work on a joint essay, framing their collective findings and learning together.

Online courses rely on student Kearns (2010) happiness and learning, influenced by communications, collaboration, and community growth. The following report investigates student contact outside of formal educational contexts due to campus and distant communication. Regarding personal communications, the students' findings were widely different, including the tools they used. The older students experimented with a broader spectrum of web-based technologies, whereas the younger students preferred mobile technology.

METHODS

The below figure (2) describe the general structure of the literature where its divided into the four different module

Figure 2. Different Modes of Teaching Learning Approach



Face to Face Teaching Methodology

Face-to-face learning is a method of imparting knowledge to a group of pupils in person. This enables instructors and students to communicate in real-time Dipti (2021). This is the most often used technique of instruction. Increased interaction with students benefits both the student and the instructor. As a result, students are held accountable for their growth outside of regular class meetings. When students study in groups, they remember more information and develop deeper relationships with their classmates Katla (2022). When students interact with a teacher face to face, there are significant cultural variations in how they learn. In many modern educational institutions, traditional face-to-face training has mainly been supplanted by techniques that adapt to the unique needs of individual students (table 1).

Face to Face Teaching With E Learning

Teaching with E-Learning Support enables teachers and students to collaborate and create a positive learning environment. All modules in the course preparation process are delivered via face-to-face instruction, while others are delivered via online instruction. Thus, both techniques will effectively incorporate the desired course outcomes in comparison to the other desired methods Ahmed (2022). The following table (2) summarizes the face-to-face teaching approach combined with an e-learning component for the student's various variables.

E LEARNING

More and more students from outside of the region and nontraditional students are opting to pursue a degree through an online platform. Online course ware may still address many of these issues if instructors employ the appropriate tools for the job. In online degree programs, several instructional and material delivery strategies are employed to impart information Oleg Barabash (2021). Teachers present material and assess learning in a virtual learning environment significantly different from in a traditional learning environment. Teachers must adapt their methods of conveying knowledge, communicating with students, and measuring their progress when students learn in an online virtual classroom setting (table 3).

The above-mentioned literature explains the many beneficial impacts and techniques linked with various learning methods, such as face-to-face methods, face-to-face methods with hybrid modes, and pure e-learning modes. The graphic below Figure 3 discusses the manual trends in different learning approaches and demonstrates the different modes of teaching in a year-by-year basis.

Table 1. Review of the Face to Face teaching Methodology

S.NO	Author	Description
1	Wood et al. (1978)	The current study examines various hypotheses on the efficacy of teaching three to four-year-old children how to complete a challenging building assignment. The techniques were developed based on prior research on interactions between mother and child and experimenter and kid in an aided learning environment.
2	Young and Duncan (2014)	Students rated on-campus courses substantially higher than online courses in Communication, Faculty/Student Interaction, Grading, Course Outcomes, and Overall Evaluation. Student Effort was substantially higher in online courses than in face- to-face courses. Increased assistance and professional development for online educators are general considerations.
3	Howlett et al. (2011)	The undergraduate program at the Brighton and Sussex Medical School is five years in length, with the following five spent at regional centers. On-site regional radiology education might take the form of small-group tutorials, imaging lectures, or a one-day seminar. The online educational module was introduced to provide equitable delivery to the curriculum throughout regional centers and facilitate student placement.
4	Vadi et al. (2016)	The majority of students who completed the online course expressed satisfaction with it. Students' comments demonstrate the importance of instructors and students being aware of the efficacy of communication. Before enrolling in the course, both students were the same age and had the same amount of prior nursing experience.
5	Steinbronn and Merideth (2008)	An online teaching environment is compared to a face-to-face teaching environment in this study. It was discovered that instructional approaches such as group projects, electronic discussions, lectures (direct teaching), and e-mail connection with the instructor significantly impacted the learning environment.
6	Salisbury and Ellis (2003)	An assessment project carried out at the University of Melbourne in 2002 is the subject of this paper. Students in the Arts Faculty were allowed to evaluate several information literacy programs as part of the project's goal. The article explains the project's motivation, methods, and findings.
7	de Vord and Pogue (2012)	The impression that online instruction takes more time than face-to-face instruction raises issues about teacher workload. To yet, research on instructional time has not yielded a conclusive response about the veracity of this view. The purpose of this study was to determine which components, if any, take up the most time for instructors teaching in an online setting. The findings revealed that certain parts of online education need much more time per student than in-person instruction.
8	Davis et al. (2007)	Researchers at six postgraduate education centers in the West Midlands, the United Kingdom, computer-based teaching and learning is just as successful as lecture- based teaching sessions for training postgraduates in EBM and systematic reviews. Participants' knowledge gains in the computer-based group were comparable to those in the lecture-based group (gain in the score: 2.1 vs. 1.9). Both groups made similar increases in terms of attitudes.
9	Kundra (2022)	The teaching-learning process needs to be significantly changed. Some of the more contemporary TL approaches include e-learning, blended learning, learning management systems, virtual classrooms, app-driven learning, flipped classrooms, podcasts, webinars, web-based collaboration, reflective feedback. To revolutionize postgraduate anesthesia teaching, contemporary evaluation methods should be used according to TL methodology. Due to the necessity of formative assessment and evaluating clinical competence, workplace-based assessment methodologies, such as direct observation of operations, are necessary.
10	Joji(2022)	Students and faculty involved in teaching microbiology labs at AGU participated in the study. Microbiology curriculum was delivered online using a survey questionnaire. After the questionnaire was administered (by Google Form), a focus group discussion (FGD) was conducted separately for students and microbiology faculty.

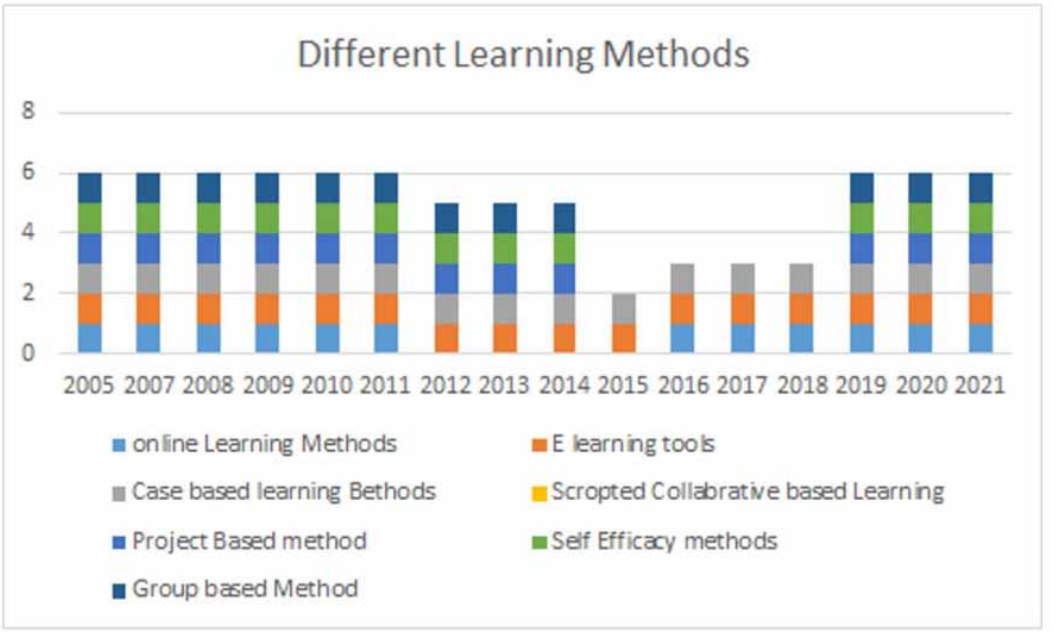
Table 2. Face to Face Teaching with E Learning Methodologies

S.NO	Author	Description
1	Díaz and Entonado (2009)	It may be useful to compare in-person and online teaching methods to see how each affects teacher performance. Training activities should include "theoretical content," "practical content," "tutor/student interaction," and "design" dimensions, according to the findings. Regardless of the method of instruction, the teacher's role remained largely unchanged. Any discrepancies arose as a result of the teacher or institution influencing the learning process.
2	NovoCorti et al. (2013)	Moodle's ELFF hybrid technique (E-Learning and Face-to-Face) blends multiple-choice assessments with traditional classroom exams while leveraging the virtual environment. It enhances students' excitement and competency in terms of credentials and their involvement.
3	Liu (2010)	E-learning allows students to learn new abilities and from any location by combining technology and new knowledge. In addition to single-learner online learning, many cram schools have their e-learning instructions prepared. They wish to boost student e-learning in general. Two modules compared how effectively students learned from various lecturers and surroundings. In general, it appears that e-Learning is more effective than traditional face-to-face training.
4	Bencheva (2010)	The article compares conventional, blended, and e-learning techniques to how knowledge is given. A review of the available literature was conducted, as well as an assessment of the delivery methods. There is a comparison between traditional and electronic learning methods. The advantages and disadvantages of various delivery methods are examined and contrasted.
5	Mortera-Gutiérrez (2006)	Describes faculty's best and worst practices using a blended learning strategy that combines online e-learning and face-to-face training. ITESM-CCM educators adopt a blended learning method and face various technological and instructional obstacles, difficulties, limitations, and victories.
6	Smith and Kurthen (2007)	Students enrolled in courses with a higher online component (70 percent online) had 70% of their interactions follow social patterns. There was a break in the pattern for courses with a lesser percentage of online components (30 percent). Furthermore, the findings suggest that immediacy behaviors can be classified into three types: emotive, coherent, and interactive. Self-talk, norm internaliza- tion, and front-back-stage performance were prominent in online interaction in courses with a high number of online components (70 percent).
7	Sung et al. (2008)	A mixed learning strategy was used to teach medication to 66 new nurses (including e-learning). The experimental, blended learning group improved significantly in terms of drug knowledge and satisfaction. Other measures of learning satisfaction, such as self-efficacy, medication administration capacity, and medication administration ability, did not change significantly from the control group
8	Ramos-Morcillo et al. (2020)	The education of Spanish nursing students during the COVID-19 pandemic panic condition was examined. The study's objective was to conduct a poll to ascertain students' learning experiences and aspirations regarding educational changes in light of the rapid move from face-to-face to e-learning education. The study enrolled 32 nursing students between the ages of 18 and 50. Qualitative interviews with nursing students were conducted at two public universities during each nursing year and master's degree program. The findings of a study were provided following COREQ standards.
9	Cochrane (2005)	This article aims to discuss the usage of Learning Objects to assist in Audio Engineering instruction. This example from the University of California system shows that interactive multimedia learning objects can supplement traditional teaching methods and provide virtual learning environments for online distribution. Additionally, the article addresses QuickTime, which was chosen for its cross-platform compatibility and scalability.
10	Ho et al. (2016)	The experimental, blended learning group demonstrated a much greater level of understanding about the hands-on method and overall satisfaction with the course. The findings suggested that access, flexibility, cost-effectiveness, in- creasing interaction, establishing a teacher network, and involving administrators, instructors, and school leaders contributed to blended learning's success.
11	Blajer and Krawczyk (2002)	In Saudi Arabia, e-learning trumps classroom instruction. Consider what happened at Najran University after the termination of normal course delivery due to the ongoing conflict between Saudi Arabia and Yemeni rebel groups. The study also examines the benefits of online education in crisis areas like Najran, a city on the Iranian border in the south. This study adds to the growing body of knowledge about effective learning and implementation in the Middle East.

Table 3. Review of E Learning Platforms

S.NO	Author	Description
1	Rodgers (2008)	According to the study's conclusions, students' online contact improves their performance. The interaction effects of e-learning engagement and personal qualities are also investigated in the article. According to the study's findings, higher education should increase student involvement and knowledge of diverse learning styles to improve instructional effectiveness and academic accomplishment.
2	Tan and Shao (2015)	Predicting a student's likelihood of dropping out is an efficient method of keeping them in school. Prediction models were created using ANN, DT, and Bayesian Networks (BNs). The results were displayed in a confusion matrix, and the precision, recall, and F-measure rates for each model were determined. All three machine learning algorithms were found to help predict student dropout, although DT outperformed the others.
3	Tan and Shao (2015)	The impact of e-learning on nurses' and nursing student's knowledge, skills and satisfaction was assessed by analyzing data from 11 RCTs. Four studies showed some improvement in knowledge, but the difference was not statistically significant com- pared to traditional learning methods.
4	Khasawneh et al. (2016)	Students' post-mortem exam and NBME test scores did not improve due to using e- modules or rotations in infectious disease or pediatrics, but their confidence in the topic improved. Methods for Obtaining Outcomes A descriptive study was conducted with third-year medical students on a pediatric clerkship.
5	Borstorff and Lowe (2007)	Researchers have emphasized students' viewpoints and enjoyment with online classes and the efficiency of such programs. Concerns were expressed over the instructor's and other students' inability to communicate effectively. As educational technology evolves, so do the courses available and the educator's obligations.
6	Ginns and Ellis (2009)	The existing sample of undergraduate students provides sufficient reliability and validity for quality assurance activities related to information and communications technologies. Students benefit from a more campus-based experience when using ICT. This study's goal is to design a measure to assess the impact of ICT on student achievement.
7	Esichaikul et al. (2011)	Adaptive e-goal The purpose of education is to provide students with timely information. Students helped design this adaptive system. When a student registers for a course, the proposed system can determine their knowledge level. The system can follow a student's progress until a test is taken. A student's knowledge level is updated based on exam results, then utilized during the adaption process.
8	Hussain et al.(2018)	Researchers used final findings, assessment scores, and the number of times users clicked on VLE activities as input criteria. The outcome variable was student activity involvement. Before the final test, teachers can use the dashboard to gauge how much their students enjoy their VLE courses. In terms of accuracy, kappa value, and recall, they outperformed the other models. They performed better than them. These are solely VLE-compatible variants.
9	Yacob et al.(2012)	TATI University College students in Malaysia were polled to establish their level of acquaintance with e-learning. A total of 200 students participated in the study. Multiple regression analysis was performed to investigate students' perceptions of gender, academic year, faculty, and technology use. According to the findings, both sexes are skilled in e-learning.
10	Tsai (2009)	The Online Learning Strategies Scale builds the model and instrument (OLSS). Based on this model, the OLSS now comprises 20 items with solid construct validity and reliability. Researchers in e-learning can use this exam to evaluate their students' use of e-learning methods during experimentation, system design, and curriculum development.
11	Selim (2007)	Students believe that the essential aspects of e-learning are instructor characteristics, IT infrastructure, and institutional support. The success of e-learning technology was primarily determined by how effectively it matched the demands of the students who used it. Colleges worldwide are transforming as a result of developments in information technology (IT) and severe competition.
12	Wu et al. (2010)	The social cognition theory is used in this study to model student learning satisfaction in a hybrid electronic learning system (BELS). The study emphasizes the importance of a positive learning environment and high-performance expectations. According to the research, many elements must be considered while developing and implementing a hybrid e-learning system (BELS).
13	Bobbink(2022)	The development of blended- and e-learning units is based on literature reviews and expert discussions. During the process, learning outcomes were defined. It took three years to implement all 14 learning units. This period saw the development and implementation of 12 blended learning units. Asynchronous e-learning and wound care specialist workshops were used to incorporate blended learning.

Figure 3. Year Wise analysis of Different Learning Methods



MAJOR FINDING

- The primary literature discussed the specific impact of blended learning, hybrid learning, and face-to-face learning on student learner ability.
- The practical design of the teaching pedagogy and its correlation with the teaching methodologies must be prioritized in the curriculum planning.
- The above literature of the articles contains a plan strategy that covers the analysis of the student interest in adopting various teaching learning methodologies.
- Different Learning Tools and Techniques also covered in the literature which established the better mode for teacher to apply the knowledge for the betterment of the Society.
- Practicing good Culture and Environment for the Teaching and learning is very much important.

Gap Identification

The above literature describe the significant points which could be further improved and enhanced:

- Some of the Teaching and Learning Methodology does not include an implementation strategy for the new Learning Models that are aligned with the students.
- In the majority of articles, the effectiveness of various learning approaches such as face-to-face and the hybrid model of learning is lacking.
- The articles only describes the Theoretical mode of Implementation and there is no explicit validation of the results described in the preceding literature.
- The efficiency and accuracy of Learning Methodologies should be improved in order to increase student satisfaction.

Implementation of E Learning Method

The desired article contains the refinement of the articles according to the domain selected. In this domain, many articles were reviewed and the impact of the different learning methodologies through the analysis process. This Methodology contains the working on the gap through collecting the data and testing those data based on ANOVA Test.

Working on GAP

According to the reviewed article, the gap in data collection based on two types of data collection approaches is analyzed in data collection based on checking the effectiveness of all learning deliverable methods in online and offline strategies:

- The assessment approach's data includes all of the assessment records of students who participated in both online (figure 4) and offline (figure 5) modes over a number of years.
- This data set contains general information about implementing the E-Learning Methodology and comparing its effectiveness to the traditional face-to-face method.
- The assessment approach data already has the activity report for the same subject, which contains the attainment level of 3 for the CCVT in the online mode.

Figure 4. Complete online Mode Attainment Sheet

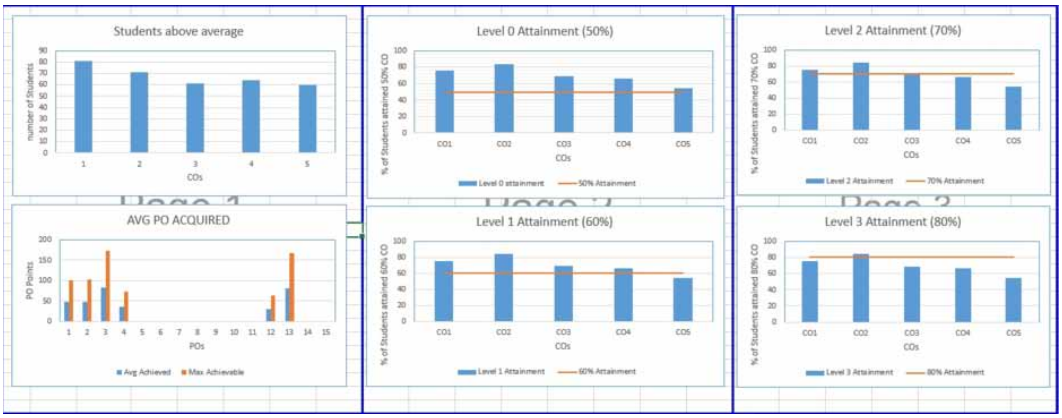
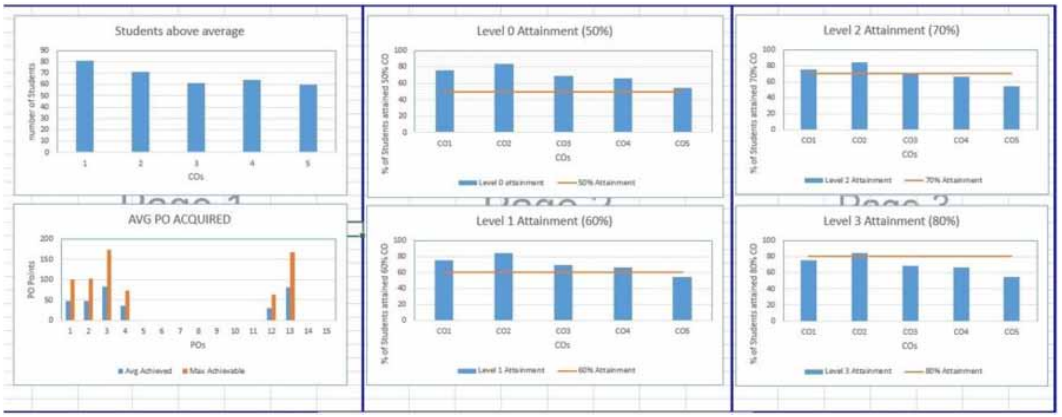


Figure 5. Complete offline Mode Attainment Sheet



The Data which is received from the assessment approach already have the activity report for the same subject where it contains the attainment level is of 3 for the CCVT in the online mode.

The Data is offline for the same subject, and the same student has attained the different attainment sheet based on the internals and the externals received. The attainment level in offline mode is 1.4, showing the considerable difference between the online and offline modes of the course we carried out in the different years.

RESULT AND ANALYSIS

Complete variance analysis is required to understand the impact of questionnaires created and responses to questionnaires provided by students. The variance over mean difference, which is calculated by taking into account the answers provided by the students, is used to conduct the analysis. To comprehend the significance of multiple parameters taken into consideration when calculating the satisfaction ratio of the student. The adaptability of the hybrid model of learning, Identifying the distinctions between the various modes of learning. It includes evaluating the efficacy of the Hybrid Learning Mode and the Face to Face Learning Method. Depending on the observed test result, which method provides the significant impact to adapt in the curriculum. To make the best decision possible regarding the adaptability of the new model of hybrid learning approach, an Anova Test is required in Figure 6.

The ANOVA analysis was performed based on Figure 6 and different parameters which the response given by the student achieves. There was significant adaptability of the student among the multiple parameters. The included parameters are Student Query and Satisfaction, Helpful Solution, and Concept is Elaborated, Discussion, confused post, Creative Initiative, Enjoying the Hybrid Mode, Not Enjoying the Hybrid Mode, Innovation Skills, Development Collaborative approach to skill development. Cultural and Social Responsibility Adoption are simple figure 7.

In the preceding figure, the sum, count, average, and variance are all computed. The final analysis is based on these calculated parameters, as shown in the final table (4) below, which includes the error rate and mean, among other things.

The Figure 8 shows the Graphical Representation of the ANOVA analysis is obtained on the considered parameters. The parameters that need to consider the testing time are a sum of the square, variance, concerning the degree of freedom depicted in this figure with static compatibility. Demonstrate the p- value, which can be used to distinguish the observed difference from random chance obtained through statistical validation of the data. The Figure 9 second mode of analysis, the second data, contains the assessment of the hybrid learning approach and face-to-face mode of assessment credits. These credits will be applied in the Two way ANOVA approach, which could identify the better computational statistics approach. If the variance is more than the means, there will be a sudden difference. The describe the Internal assessment and End Semester credits, both in the hybrid and face to face are described in the sample table associated.

Figure 6. General Survey Taken for the Adaptability of the Hybrid Mode of Learning

Student	Student Query and Satisfaction	Helpful Solution	Concept is Elaborat	Discussion	confused_post	Creative Initativ	Enjoying the Hbrid Mode	Not Enjoying the Hybrid Mode	Inovation Skilss Develope	Self Learning Skill	Collabrative approach	Social and Cultural Responsbility	Easily Adopted
SAGAR	8	7	0	0	0	6	9	6	9	7	9	8	8
Sejal	1	7	0	1	0	2	8	2	8	9	8	9	0
Sahil	2	4	3	9	0	7	7	7	7	8	7	8	0
SHREYA	5	7	6	9	2	9	9	9	9	0	9	7	2
PRAKHAR	7	6	8	6	0	7	8	7	8	0	8	9	9
Utkarsh	9	3	3	8	7	8	8	8	8	2	9	8	8
Prateek	7	10	8	3	1	6	0	6	0	9	8	0	7
Prachi	8	9	8	8	0	7	9	7	9	8	7	0	9
VISHAL	6	3	3	6	0	9	8	9	8	7	9	2	8
Shubham	4	4	8	8	0	7	7	7	7	9	8	9	0
Parikrama	5	1	3	3	0	8	9	8	9	8	9	8	3

Figure 7. Sample Two Way Anova Tables which is generated by applying the Test

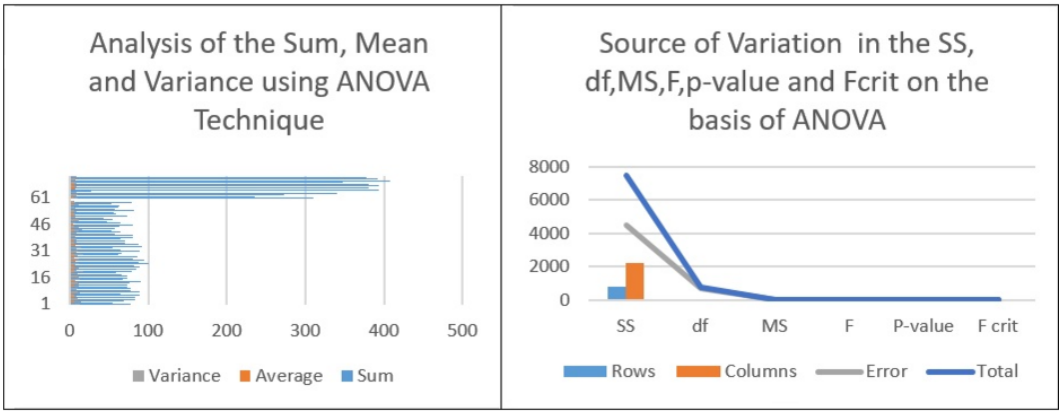
SUMMARY	*Count*	*Sum*	*Average*	*Variance*
SAGAR	13	77	5.92307692	12.4102564
Sejal	13	55	4.23076923	15.025641
Sahil	13	69	5.30769231	9.73076923
SHREYA	13	83	6.38461538	10.2564103
PRAKHAR	13	83	6.38461538	8.92307692
Utkarsh	13	89	6.84615385	5.97435897
Prateek	13	65	5	13.6666667
Prachi	13	89	6.84615385	9.80769231
VISHAL	13	78	6	9.16666667
Shubham	13	78	6	9.5
Parikrama	13	73	5.61538462	11.4230769
Swapi	13	74	5.69230769	11.2307692

Table 4. ANOVA MEANS

Source of Variation	SS	df	MS	F	P Value	F-crit
Rows	784.53	58	13.5264578	2.10418257	7.5E-06	1.3433479
Columns	2206.9	12	183.911126	28.6093072	4.5E-53	1.7660811
Error	4474.1	696	6.42836698			
Total	7465.6	766				

SS = Sum of Squares, df= Degree of Freedom, MS= mean Square, F = Static Compatibility, P = Measure of the Probability.

Figure 8. Analysis of the obtained values from the both ANOVA table



Based on the table, the analysis is on parameters that show the greater efficiency of hybrid learning compared to the face-to-face learning method. Statistical analysis demonstrates that this approach of online learning makes more to the student, so in the below the statistical analysis using the ANOVA process is followed in the below Figure 10.

Based on this preceding the table, the sum of squares, mean, probability, and statistical computation describe the better approach for the analysis in Table 5.The graphical analysis of the computed testing value is obtained. It shows better computation and accuracy in the hybrid approach than the face-to-face approach based on the hypothesis described in Figure 11.

Figure 9. Sample Table from the assessment taken in the previous semester hybrid and face to face

Student	IA Hybrid	END Hybrid	IA face to face	END face to face
SAGAR	66	92	71	95
Sejal	60	99	65	78
Sahil	71	94	76	91
SHREYA	71	95	76	88
PRAKHAR	60	99	65	85
Utkarsh	60	99	65	93
Prateek	49	94	54	98
Prachi	50	94	55	95
VISHAL	40	95	45	93
Shubham	64	95	69	65
Parikrama	32	99	37	89
Swapi	70	94	75	92
SARTHAK	60	95	65	66

Figure 10. Sample Two Way Annova Tables which is generated by applying the Test

Anova: Two-Factor Without Replication				
SUMMARY	*Count*	*Sum*	*Average*	*Variance*
SAGAR	4	324	81	214
Sejal	4	302	75.5	303
Sahil	4	332	83	126
SHREYA	4	330	82.5	120.333
PRAKHAR	4	309	77.25	326.917
Utkarsh	4	317	79.25	384.25
Prateek	4	295	73.75	666.917
Prachi	4	294	73.5	592.333
VISHAL	4	273	68.25	888.917
Shubham	4	293	73.25	214.917
Parikrama	4	257	64.25	1200.92
Swapi	4	331	82.75	144.917
SARTHAK	4	286	71.5	252.333
PRASHANT	4	335	83.75	120.917
SARTHAK	4	298	74.5	449.667

Table 5. Anova Analysis of p-value and F Crit

Source of Variation	SS	df	MS	F	P-Value	F Crit
Rows	14608.67	58	251.8736	2.050766	0.000188	1.400482
Columns	40539.95	3	13513.32	110.026	5.55E-40	2.656532
Error	21370.55	174	122.8193			
Total	76519.17	235				

Comparative Difference

In order to go through the comparative differences, One way ANOVA technique is applied to test the desired comparison. A significant observation was made in both the learning methodologies, which could contain better possibilities for finding out the better result Table 6.

Figure 11. Analysis of the obtained values from the both ANOVA table

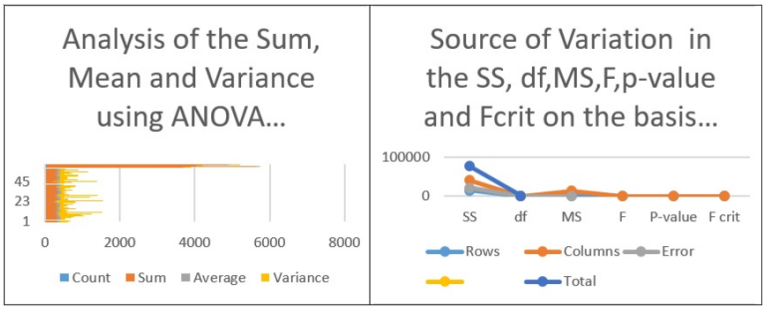


Table 6. Anova calculation and different identities in different column

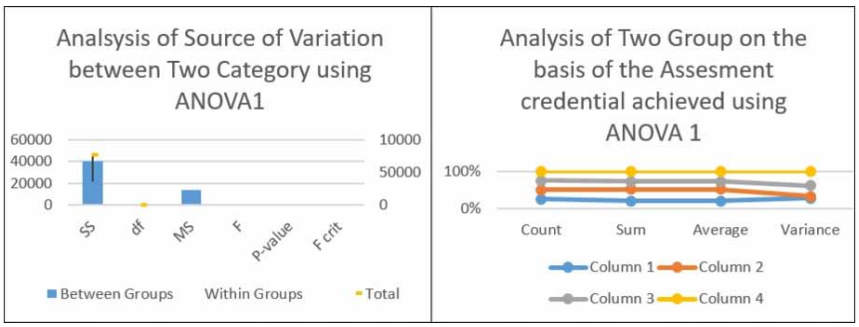
Groups	Count	Sum	Average	Variance
Column 1	59	3614	61.25424	174.6411
Column 2	59	5574	94.47458	29.83986
Column 3	59	3909	66.25424	174.6411
Column 4	59	4825	81.77966	241.2092

The Source of variation, produced through the ANOVA approach, is followed in the following table, which describes the sum of square s achieved in the comparison of both online and face-to-face learning methodology Table 7. The Analysis was produced by comparing the data obtained during the whole year assessment approach, and this Analysis better demonstrates the case of online learning and the face-to-face learning approach Figure 12.

Table 7. One Way Anova approach comparison

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	40539.95	3	13513.32	87.13611	8.6E-38	2.643511
Within Groups	35979.22	232	155.0828			
Total	76519.17	235				

Figure 12. Comparison graph of both the credential assessment achieved



CONCLUSION

In the fast-evolving world of online learning systems, user interfaces are altering at an alarming rate. We must look at how online students manage their education and how they use specialized learning resources. These studies used the Model of Strategic e-Learning and considered formal feedback. The TWO way ANOVA method to determine the best-recommended strategy for adopting the E-learning approach by taking into account. The p-value was 7.5E-06 and 4.5E-53 obtained in the General Survey Taken for Adaptability of the Hybrid Mode of Learning. To test with more validation, the ANOVA Test was processed on the two different assessment data sets. The observed p values 0.000188 and 5.55E-40 are obtained, indicating a statistically significant difference between the adaptability of the Hybrid learning Model and Face to Face Model approach.

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