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Impact and Persuasiveness of Hybrid Learning : A Case Study of Selected Colleges in Kerala

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Abstract

Hybrid learning is a process of technology mixed learning methods associated with traditional procedures. The article intended to assess the impact and Persuasiveness of Hybrid learning among UG and PG students of selected colleges in Kerala in the context of revolutionary transformations in the educational field that occurred during and after the pandemic. A questionnaire survey was conducted among 244 students. The population comprised 102 Post Graduate and 142 Undergraduate students. A 5-point Likert Response Scale was used for formulating the results and conclusion. Student's preferences, learning strategies, attitudes, behavioral tendencies, ability and acceptability to achieve the learning goals, adaptiveness of instructional techniques, flexibility and problems of hybrid environment, the difference between hybrid and traditional learning, the infrastructure contributions and resource mobilization in the new learning context, etc are tested through the structured questionnaire. Test Results demonstrate that traditional learning practices need to be modified according to changing patterns and environments.

Keywords: Hybrid Learning, Blended Learning, Students Perceptions, Digital Learning.

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Introduction

During the pandemic period, educational institutions shifted to hybrid learning. New approaches in the delivery of education may affect the study habits of students, and this leads to an inquiry about the relationship between emotional intelligence, cognitive learning, and study habits. (Iqbal, J., Asghar, M. Z., Ashraf, M. A., & Yi, X. ,2022)In the educational context, especially the Indian scenario, learners and instructors rely on traditional methods to deliver knowledge and learning, mostly concentrated on face-to-face interaction between teachers and students. Classroom teaching and direct Communication methods are integral parts of pedagogy, which is used to deliver knowledge. Even though technology is used for imparting knowledge, the beginning of the pandemic period introduced revolutionary changes in the educational field. The long-term closure of educational institutions paved the emergence of electronic communication methods for conveying education to students. The pandemic situation forced educational institutions to provide a potentially quality educational environment through modernized and transformed strategies and reinvesting themselves in order to persist successfully. Hybrid learning is the best alternative to continue academics without hindrance.

Blended learning can be defined as an approach that combines different models of Face-to-Face (F2F) and online learning to create a learning atmosphere that sustains motivation and promotes self-learning (Heirdsfield, Walker, Tambyah, &Beutel, 2011). Blended methods integrated with technology become a new trend in the delivery of academics. The hybrid Learning environment needs to incorporate digital tools with conventional practices. The efficiency and fruitfulness of Blended learning tools depended upon the delivery ways of instructors and the grasping and accommodating capabilities of students. The academic community widely accepts it because of its flexibility in delivering academic content irrespective of time and place. Its socializing power enhances its worldwide popularity.

It is analyzed that specific standard components are present in both traditional and hybrid pedagogy like teachers and students, prescribed syllabus, course

design based on objectives and pre-defined principles, expected outcomes, students activities, overall development of the learners, etc. The main difference is that the tutor-centric curriculum shifted to a learner-centric curriculum, and evaluation criteria not solely depend on written examinations but expanded to a wide range of active learning outcomes and technology-blended activities, which comprise group assignments, virtual presentations, discussions, etc. In a hybrid environment, the tutor's lectures are not the only resource as the blended classroom instruction is aligned with videos, information from websites, electronic reading materials, discussion forms support, etc. Self-learning receives much advancement in the hybrid learning domain as the students are more adjacent to various learning materials and tools from an electronic environment. The learning models should be selected carefully as the student's preferences and choices differ in nature in a hybrid environment. The recorded study materials and tutorials avail the option for repeated watching, and this enriches the understanding capability of learners. Face-to-face knowledge transmission is pivotal in hybrid learning. At the same time, learner and teacher interaction relies on electronic mediums to benefit from divergent educational models for assorted student communities. A hybrid atmosphere is gifted with tasks that can be performed both in classrooms and outdoors, furnishing many learning techniques that are matched with their learning priorities, which enable the various student sections to be enthusiastic throughout their educational span. Hybrid learning course design principles should incorporate curriculum with digital reference materials, online parallel and non-parallel debates, electronic teaching methodologies, and tools for communication and interactions among students and the faculty. Li, Q., Li, Z., & Han, J (2021) in their study made some conclusions as financial support should provide for the participants to buy digital equipments. Students learning capabilities, home environments , their capabilities to absorb new learning management system etc should be taken into consideration and sufficient training and understanding should be provided to all those who take part in the new venture of education.

Merits of Hybrid Learning

- Enhancement of technical skills of the participants in the hybrid learning environment.
- The schedule can be as per the participant's convenience and choice.
- Teachers may find more resources to conduct online classes, which enriches both participant's knowledge.
- Learning becomes more students at the same time. Teachers may have to perform more roles to satisfy the learners, producing better outcomes.
- The increased student responsibilities enrich the students' personal and academic calibers, leading to the creation of self-reliant student communities.
- Improved communication among the participants.
- New innovations in the teaching-learning process.
- 'At Any time, From Anywhere" policy in delivering academic activity.
- Continuous and improved and differed evaluation methods.

Defects of Hybrid Learning

- Academics become more mechanical, and Faculty control may be less in hybrid mode.
- Over addiction in digital devices and increased screen time.
- There is a lack of cordial and humanistic relations among the participants, which minimizes the psychological bonding.
- Transitioning from a traditional to a hybrid learning mode may take more time and pain.
- Lack of physical devices and internet speed may affect the learning process and its outcome.
- Practical laboratory practices, hands-on training, etc, may receive less opportunity in hybrid mode.
- Orientation must be an essential component in feminizing the changed teaching-learning environment.

- The initial setting of hybrid devices and facilities may be more expensive than traditional classrooms.

Literature Review

- Aristika, A., Darhim, Juandi, D., &Kusnandi. (2021) says hybrid learning possesses certain additional benefits as students receive motivation from digital instructional methods, the educational process becomes more challenging and fact-oriented, and using information technology leads to exploring a wide range of information sources, etc. Visualization and sharing of teaching materials become easier. Task performance became simpler, and teaching learning turned out to be innovative, interactive, and enthusiastic.
- The study conducted *by* Linder ,Kathryn E., Bruenjes,Linda S., Smith, Sarah A. (2017) Says the importance of hybrid learning tools. LMS and OER form the crucial part of Hybrid Course design. LMS features describe various tools like asynchronous and synchronous communication tools and collaborative tools to assist learners in uniting in the digital environment. This tool includes Wikkis, split documents, private set rooms, etc. Time Management tools play a key role in hybrid learning as learners have effectively competed with two learning methods. Time management tools can control the submission and deadline dates of various learning activities like assignments, group and individual tasks, etc.
- The study by (Al-Maqbali & Al-Shamsi, 2023)signifies the importance of assessment methods in hybrid learning. The assessment practice should highlight the achievements of final and expected learning outcomes. Other than traditional evaluation tools, new strategies should be adopted for evaluation at every step. The strategies should reflect learners' thinking and implicational skills. The authors claimed that assessment methods should evaluate students' capabilities of finding, arranging, elucidating, and applying knowledge in needed situations.

Their acquired information may help them to interpret and solve problems. The study reveals the importance of developing a common policy for new assessment strategies through organizing study classes, training programs, etc. Best practices should circulate among the instructor groups to formulate awareness regarding the methodologies. The study findings highlight the significance of performance and problem-solving efficiency as the master evaluation tool. The analytical, thinking, and application level assessment receives more prominence. The study found that peer assessment self-assessment can be included in evaluation tools.

- The article by Wai & Seng (2014) points out the merits of blended learning by showcasing the motivation received by the learners through the adoption of technology in the learning process. The blended classroom provides equal opportunity for learners as the F2F interaction provides more importance to sound knowledge and well-prepared students. Blended learning can overcome the problems related to the scarcity of classroom space and teaching time. The digital environment offers flexible teaching hours based on the convenience of students and faculties. The study helps English teachers to improve the student's reading comprehension aptitude. The study result indicates that hybrid learning makes learning more interactive and creative, which produces students' engagement and enthusiasm in the learning process. Student's reading capacity improved in the hybrid atmosphere, which paved the way for betterment in the vocabulary of the learners as they consult with various learning materials other than textbooks. BL supports the Learner in overcoming learning difficulties through group activities. The author concluded that BL creates more responsible learners as they have autonomy over their learning process.
- Heirdsfield, A., Walker, S., Tambyah, M., &Beutel, D. (2011), in their article, point out the importance of An online learning environment for the successful implementation of hybrid learning. The selection of a

Learning Management system is crucial for the effectiveness and success of the learning process—blackboard learning management System adopted by the Queensland University of Technology for online instructional purposes.

- Sanches, T. (2022) shows the importance of digital literacy skill development for achieving academic goals. User training helps to develop information navigation skills, which is essential to finding relevant information and applying it in a meaningful method. Digital fluency is essential for searching the net, understanding digital information laws, etc.
- Snart, J. (2017 In this study, the way through which community colleges constitute absolute educational settings to perform hybrid courses. Online tutors should be trained to take classes, search for information from various digital resources, etc. Students' evaluations and assessments should done carefully using technology-embedded methods. Community college students preferred the flexibility of a hybrid environment. The institutional mission should be to join hands with faculty and administration support.

Methodology

The concept of hybrid learning may be a new occurrence for most of the students, as many of them first time experienced it during the COVID-19 pandemic period. The significant purpose of Data collected from students who attended online and face-to-face classes is to know about their perceptions of both modes of tutorials. Students' opinions may be useful for the curriculum designers while designing or modifying the existing hybrid courses. The present study is based on an exploratory research method utilizing a random sampling technique. The sample population of the study consisted of undergraduate students and post-graduates of selected Government Aided Colleges from Kerala state. U G Students are from three different programs, namely,

Bachelor of Art, Bachelor of Commerce, and Bachelor of Business Administration. P G Students represents the Mcom and MA section. The sample population comprised 102 P G students and 144 UG students. The respondents were contacted by personal meetings, email, distributing through libraries, sending to class WhatsApp groups etc. SPSS was used for data analysis.

The structured questionnaire was designed with five major sections consisting of several Statements that reflect various aspects of Hybrid Learning. The questionnaire was distributed among 280 students, and 262 questionnaires were returned to the researcher. Among them, 244 were analyzed to reach a conclusion. The survey questionnaire adopted the five-point Likert scale to get a holistic view of student's opinions and their level of agreement with the statements in the questionnaire. Independent t–test was conducted for statistical analysis of differences among group means of UG and PG students.. For this purpose, the Significance level is set at 0.05. Simple Percentages and Mean are also used for data analysis.

Objectives

- To understand the learning experience of students in a hybrid environment.
- To assess the Hybrid learning tool's usage effectiveness on learning outcomes.
- To know the satisfaction level of students while using various technologies and tools in hybrid learning.
- To realize the Challenges faced by the students while performing Hybrid Learning
- To understand the changes, we must incorporate curriculum, Course Design, and Implementation methods in a Hybrid context.

Results and Discussions

Table: 1:Learning Experience Of Students In a Hybrid Environment

Statements	Scale	Category						
		UG n= 142			PG n=102			p-value n=244
		N	%	Mean	N	%	Mean	
In online interaction, all students get an equal opportunity to participate in discussions.	SA	39	27.4	3.31	34	33.3	3.78	.011
	A	43	30.2		32	31.3		
	N	05	3.5		04	3.9		
	D	25	17.6		19	18.6		
	SD	30	21.1		13	12.7		
The mould ability and comfort of asynchronous discussion posts increase the standard and quantity of the posts	SA	36	25.3	3.06	39	38.2	3.77	.000
	A	34	23.9		37	36.2		
	N	06	4.2		03	2.9		
	D	34	23.9		10	9.8		
	SD	32	22.5		13	12.7		
High quality of posts increases participant's subject knowledge and thinking ability	SA	42	29.5	2.83	24	23.5	3.08	.227
	A	14	9.8		27	26.4		
	N	05	3.5		06	5.8		
	D	40	28.1		23	22.5		
	SD	41	28.8		22	21.5		
In hybrid mode, the accessibility of faculties is enhanced by the heterogeneity of interaction methods	SA	41	28.8	3.38	37	36.2	3.72	.070
	A	47	33.0		35	34.3		
	N	04	2.8		04	3.9		
	D	25	17.6		16	15.6		
	SD	25	17.6		10	9.8		
In a hybrid	SA	32	22.5	2.96	44	43.1		

environment, students convert themselves as the masters of their educational process, and this creates more responsible learners	A	36	25.3		40	39.2		
	N	04	2.8		03	2.9		
	D	34	23.9		07	6.8		
	SD	36	25.3		08	7.8	4.03	.000
In F2F classes, idea sharing and personal relations among students and faculty, understanding the learning needs, etc, are stronger	SA	50	35.2	3.73	35	34.3		
	A	54	38		34	33.3		
	N	03	2.1		03	2.9	3.59	.431
	D	20	14.0		16	15.6		
	SD	15	10.5		14	13.7		
The lecture role of teachers diminished, and mentor and supportive roles magnified	SA	35	24.6	2.81	14	13.7		
	A	34	23.9		10	9.8		
	N	03	2.1		04	3.9	2.31	.010
	D	16	11.2		40	39.2		
	SD	14	9.8		34	33.3		
Hybrid domain enhanced learners' writing skills, group work enthusiasm, discussion posts creativity, etc	SA	57	40.1	3.99	39	38.2		
	A	59	41.5		44	43.1		
	N	04	2.8		03	2.9	3.97	.884
	D	12	8.4		09	8.8		
	SD	10	7.0		07	6.8		
Students with learning disabilities are getting multiple learning facilities and much attention in hybrid classes.	SA	32	22.5	3.03	34	33.3		
	A	37	26.0		27	26.4		
	N	06	4.2		04	3.9	3.40	.059
	D	37	26.0		20	19.6		
	SD	30	21.2		17	16.6		

In hybrid learning, the learning and teaching techniques have stability as the method highly relies on technology advancement, participants enthusiasm, hybrid learning tools etc.	SA	42	29.5	3.12	36	35.2	3.55	.031
	A	30	21.1		28	27.4		
	N	10	7.0		08	7.8		
	D	23	16.1		16	15.8		
	SD	37	26.0		14	13.7		
Hybrid learning, the availability of multiple learning materials like tutor-created materials, online resources, open source resources, etc, enriched learners' knowledge and efficiency.	SA	25	17.6	2.79	34	33.3	3.60	.000
	A	30	21.1		32	31.3		
	N	07	4.9		06	5.8		
	D	43	30.2		19	18.6		
	SD	37	26.0		11	10.7		
Learners and teachers should develop sound communication skills, as nonverbal communication has less importance in digital classes	SA	47	33.0	3.30	34	33.3	3.38	.669
	A	32	22.5		27	26.4		
	N	06	4.2		05	4.9		
	D	30	21.1		27	15.6		
	SD	27	19.0		20	19.6		

p< 0.05

Scale- SA- Strongly Agree, A= Agree, N=Neutral, D= Disagree, SD= Strongly Disagree.

Indian Students were more familiar with F2F classes till the COVID period. The pandemic has paved the way for introducing new educational systems in many countries. The statements in Table 1 tried to understand the Learning Experience of UG and PG students in a hybrid environment, which may be a new experience for most students. T-test is used to compare the UG and PG responses on various statements. Altogether, there are 12 statements used to understand students' perceptions. Test results indicate that the UG and PG students have a significant difference in their views regarding six statements (with $p<.05$). First two statements show significant differences in UG and PG, which describe the online discussions and moldability and comfort of asynchronous discussion posts. There is a significant difference in views of UG and PG students about the role-changing of students as masters of their own educational process. In this connection, PG students think hybrid learning produces more responsible learners. There is a difference of views among UG and PG students about the teacher's role in a hybrid atmosphere. (with p-<.05). UG students think more than PG students that teacher's mentor and supportive roles are highlighted in hybrid environments. There is a difference in views about the stability of teaching methods and the enrichment of Learner's knowledge through multiple learning materials.

Test results show no significant difference in UG and PG's opinion about six statements (with p- >.05). Both UG and PG believed that High-Quality post increases participants' knowledge and accessibility of faculties enhanced by heterogeneity of interaction methods. Both sections join hands with the opinion that in F2F classes, idea sharing and personal relations among students and faculty become very strong, and the Hybrid domain enhanced learners' writing skills, group work enthusiasm, discussion posts creativity, etc. UG and PG students believed that students with learning disabilities are getting multiple

learning facilities in a hybrid atmosphere. Both UG and PG students agreed that Learners and teachers should develop sound communication skills.

Table: 2 To Analyze Hybrid Learning Tools and Their Usage Effectiveness on Learning Process

Statements	Scale	Category							
		UG n= 142				PG n=102			
		N	%	Mean	Ranking	N	%	Mean	Ranking
On line discussions	HU	50	35.2	3.38	10	60	58.8	4.45	3
	U	32	22.5			36	35.2		
	N	07	4.9			00	00		
	UU	28	19.7			04	3.9		
	HUU	25	17.6			02	1.3		
F2F Discussions	HU	99	69.7	4.60	1	79	77.4	4.67	1
	U	37	26.0			17	16.6		
	N	00	00			00	00		
	UU	04	2.8			06	5.8		
	HUU	02	1.4			00	00		
Web Posts	HU	24	16.9	2.62	13	52	50.9	3.77	12
	U	28	19.7			20	19.6		
	N	04	2.8			03	2.9		
	UU	42	29.5			09	8.8		
	HUU	44	30.9			18	17.6		
PPT Presentations	HU	57	40.1	4.06	4	50	49.0	4.39	5
	U	65	45.7			48	47.0		
	N	00	00			00	00		
	UU	12	8.4			02	1.9		

	HUU	08	5.6			02	1.9		
Open Access Journals	HU	48	33.8	3.50	8	48	47.0	4.38	6
	U	42	29.5			49	48.0		
	N	05	3.5			00	00		
	UU	27	19.0			03	2.9		
	HUU	20	14.0			02	1.9		
Library Subscribed Journals	HU	24	16.9	2.70	12	31	30.3	3.32	13
	U	27	19.0			30	29.4		
	N	12	8.4			02	1.9		
	UU	40	32.2			19	18.6		
	HUU	39	27.4			20	19.6		
Tutor Prepared Notes	HU	60	48.3	4.13	2	40	39.2	3.89	10
	U	65	52.4			41	40.1		
	N	00	00			00	00		
	UU	10	8.0			12	11.7		
	HUU	07	5.6			09	8.8		
Informations from Web Sites	HU	42	33.8	3.49	9	45	44.1	4.19	7
	U	50	40.3			45	44.1		
	N	06	4.2			02	1.9		
	UU	24	16.9			06	5.8		
	HUU	20	14.0			04	3.9		
Learning Portals	HU	22	15.4	2.55	14	37	36.2	3.91	9
	U	26	18.2			45	44.1		
	N	07	4.9			02	1.9		
	UU	40	28.1			10	9.8		
	HUU	47	33.0			08	7.8		
Lecture Videos and Videos from the Internet	HU	55	38.7	3.75	6	43	42.1	4.15	8
	U	49	34.5			49	48.0		
	N	03	2.1			00	00		
	UU	18	12.6			02	1.9		

	HUU	17	11.9			08	7.8		
Chatt with Faculties and co-students	HU	54	38.0	3.72	7	47	46.0	4.15	8
	U	50	40.3			39	38.2		
	N	00	00			02	1.9		
	UU	20	14.0			12	11.7		
	HUU	18	12.6			02	1.9		
Web Posted Study Materials	HU	32	22.5	2.85	11	49	48.0	3.80	11
	U	30	21.1			24	23.5		
	N	02	1.4			03	2.9		
	UU	40	28.1			12	11.7		
	HUU	38	26.7			14	13.7		
Class Lecture Notes	HU	57	40.1	4.08	3	49	48.0	4.46	2
	U	65	45.7			51	50.0		
	N	03	2.1			00	00		
	UU	09	6.3			02	1.9		
	HUU	08	5.6			00	00		
Feed Back from Teachers and Co Students	HU	59	41.5	4.01	5	48	47.0	4.43	4
	U	59	41.5			50	49.0		
	N	02	1.4			02	1.9		
	UU	10	7.0			02	1.9		
	HUU	12	9.6			00	00		

$p < 0.05$

Scale : HU= Highly Useful, U= Useful, N= Neutral, UU= Un useful, HUU= Highly Un useful.

Table 2 shows the different Tools used in a Hybrid learning environment. The statement is designed to understand students' views regarding the effectiveness of various tools that help to attain maximum benefits of the learning process. The survey results depict high support for F2F Discussions both from UG and PG students, which comes at the top

rank. Tutor Prepared Notes gained popularity among UG students, coming 2nd place in the ranking, while Class Lecture Notes received second position among PG students. The same bagged 3rd-rank UG students. Online discussions are more favored by PG students, with the third rank, but it stood only 10th position among UG students. PPT presentations Feed Back from Teachers and Co Students are almost equally liked by UG and PG students, gaining fourth and fifth rank for PPT and fifth and fourth rank for Feed Back. Lecture Videos and Videos from the Internet came sixth among UG while Open Access Journals gained 6th rank among PG. Chatt with Faculties and Co Students are the almost equally liked tools among UG and PG, which comes 7th and 8h rank respectively. In the case of Learning Portals, UG and PG have clear differences in opinion, which comes last only as per UG views but reaches ninth position among PG. Web Posted Study Materials received the same rank from both sections of students (11th). Information from Web Sites received seventh rank among PG and ninth rank among UG. Web Posts got less interest from UG and PG students with 13th and 12thrank respectively. Library Subscribed Journals received less popularity, with 12th and 13th rank UG and PG, respectively.

Table: 3 To know the satisfaction level of students while using various technologies and tools in hybrid learning

Statements	Scale	Category						
		UG n= 142			PG n=102			p-value n=244
		N	%	Mean	N	%	Mean	
The effectiveness of Course Management	H S	24	16.9	2.69	18	17.6		
	S	26	18.3		22	21.5		
	N	12	8.4		06	5.8		

System used by the Institution	D	41	28.8		34	33.3	2.80	.549
	H D	39	27.4		22	21.5		
The usefulness and accessibility of website links provided by faculties for learning and reference	H S	42	29.5	3.20	42	41.1	3.94	.000
	S	35	24.6		39	38.2		
	N	03	3.5		03	2.9		
	D	31	21.8		09	8.8		
	H D	29	20.4		09	8.8		
Active participation in discussion forums in terms of equal opportunity and response are	H S	27	19.0	2.95	41	40.1	3.56	.002
	S	37	26.0		23	22.5		
	N	08	5.6		04	3.9		
	D	42	29.5		20	19.6		
	H D	28	19.7		14	13.7		
The content and quality of recorded lecture videos and PPT presentations are	H S	44	30.9	3.31	36	35.2	3.78	.011
	S	38	26.7		41	40.1		
	N	04	2.8		03	2.9		
	D	30	21.1		11	10.7		
	H D	26	18.3		11	10.7		
The visual and audio clarity of the online teaching platform used for academic purposes and student interactions are	H S	39	27.4	3.25	34	33.3	3.54	.139
	S	43	30.2		32	31.3		
	N	05	3.5		04	3.9		
	D	25	17.6		19	18.6		
	H D	30	21.2		13	12.7		
The communication methods like Teleconferences , Emails, Chat facilities, etc used in a hybrid environment are	H S	50	35.2	3.62	34	33.3	3.48	.471
	S	49	34.5		32	31.3		
	N	02	1.4		03	2.9		
	D	21	14.7		15	14.7		
	H D	20	14.0		18	17.6		

Orientation in the Course management system, Library Infrastructure, and Library subscribed digital items are	H S	40	28.1	2.84	35	34.3	3.61	.000
	S	18	12.6		35	34.3		
	N	05	3.5		04	3.9		
	D	37	26.0		13	12.7		
	H D	42	29.5		15	14.7		
The quality and time allocation of offline theory and practical sessions are	H S	52	36.6	3.70	42	41.4	3.97	.107
	S	50	35.2		40	39.2		
	N	03	2.1		02	1.9		
	D	19	13.3		11	10.7		
	H D	18	12.6		07	6.8		

p< 0.05

Scale : H S = Highly Satisfied, S= Satisfied, N = Neutral, D= Dissatisfied, H D= Highly Dissatisfied

Table 3 contains the statements intended to know the satisfaction level of UG and PG students while using the Tools and Technologies in Hybrid Learning. t–test is used to compare the satisfaction between UG and PG students.

Test results show a significant difference in UG and PG satisfaction levels on four statements. (with p<.05) . UG and PG satisfaction is different regarding the usefulness and accessibility of website links provided by faculties and participation in discussion forums based on equal opportunity, response, etc.PG and UG have different views regarding the content and quality of recorded lecture videos and PPT presentations, Orientation in the Course management system, Library Infrastructure, Library subscribed digital items, etc.

Test result indicates that there is no significant difference in the satisfaction level of both UG and PG students (with p ->.05) about four statements. Both sections of students are not so satisfied with the Course Management system. There is no significant difference in the satisfaction level of UG and PG regarding the visual and audio clarity

of the online teaching platform, communication methods used in the hybrid environment, and quality and time allocation of offline theory and practical sessions.

Table: 4 The challenges Faced by the Students while performing Hybrid Learning

Statements	Scale	Category							
		UG n= 142				PG n=102			
		N	%	Mean	Ranking	N	%	Mean	Ranking
Absence of proper communication between students and faculties	SA	45	31.6	3.43	7	44	43.1	3.90	5
	A	47	33.0			35	34.3		
	N	02	1.4			02	1.9		
	D	20	14.0			11	10.7		
	SD	28	19.7			10	9.8		
The Absence of Common Interactive medium for conducting classes	SA	27	19.0	2.68	10	29	28.4	3.08	9
	A	28	19.7			24	23.5		
	N	03	2.1			02	1.9		
	D	41	28.8			20	19.6		
	SD	43	30.2			27	26.4		
Lack of coordination between course design and study materials on online platforms	SA	50	35.2	3.63	5	37	36.2	3.67	7
	A	48	33.8			36	25.3		
	N	04	2.8			02	1.9		
	D	21	14.7			12	11.7		
	SD	19	13.3			15	14.7		
Misunder	SA	40	28.1			10	9.8		

standing and mis - interpretation of discussion topics and posts	A	47	33.0	3.37	8	10	9.8	2.16	11
	N	03	2.1			03	2.9		
	D	30	21.1			42	41.1		
	SD	22	15.4			37	36.2		
Delay in response from faculty and co-group members leads to a break in the learning process.	SA	44	30.9	3.32	9	34	33.3	3.43	8
	A	42	29.5			31	30.3		
	N	02	1.4			02	1.9		
	D	24	16.9			15	14.7		
	SD	30	21.1			20	19.6		
All group members do not equally take the initiative to complete group assignments and other group activities	SA	50	35.2	3.65	4	38	37.2	3.86	6
	A	51	35.9			42	41.1		
	N	02	1.4			02	1.9		
	D	19	13.3			10	9.8		
	SD	20	14.0			10	9.8		
Nonconti	SA	49	34.5			37	36.2		

nuatively topic discussion in F2F and Online classes	A	48	33.8	3.56	6	45	44.1	3.91	4
	N	01	0.7			01	0.9		
	D	22	15.4			12	11.7		
	SD	22	15.4			07	6.8		
Time allocation for both sessions of classes are inappropriate	SA	50	35.2	3.69	3	44	43.1	4.16	3
	A	54	38.0			45	44.1		
	N	00	00			02	1.9		
	D	20	14.0			07	6.8		
	SD	18	12.6			04	3.9		
IT infrastructure in libraries and colleges are not sufficient to meet the new interface of learning	SA	60	42.2	3.95	1	45	44.1	4.25	2
	A	56	39.4			48	47.0		
	N	00	00			01	0.9		
	D	11	7.7			05	4.9		
	SD	15	10.5			03	2.9		
Learner's hesitation and non-cooperation to migrate to the new system of learning	SA	24	16.9	2.56	11	17	16.6	2.49	10
	A	26	18.3			19	18.6		
	N	05	3.5			03	2.9		
	D	37	26.0			21	20.5		
	SD	50	35.2			42	41.1		
Lack of proper Orientation before	SA	52	36.6	3.77	2	49	48.0	4.48	1
	A	54	38.0			52	50.9		
	N	02	1.4			01	0.9		

the beginning of the academic year.	D	20	14.0			00	00		
	SD	14	9.8			00	00		

p< 0.05

Scale- SA- Strongly Agree, A= Agree, N=Neutral, D= Disagree, SD= Strongly Disagree

Table 4 describes the Challenges faced by the students in Hybrid Learning. Analysis shows that the challenges are different for UG and PG students. Both sections of students feel the Lack of Proper Orientation about the new learning system, and insufficient IT Infrastructure are the chief hindrances of Hybrid learning. Both UG and PG think the Time allocation for F2F and Online sessions are inappropriate. UG students selected the fourth difficulty as Group members are not equally contributing in Group Activities where, as PG selected Non continuatively topic discussion in F2F and Online classes as fourth hindrance. PG students selected fifth difficulty as the Absence of proper communication between students and faculties, and UG students chose the Lack of coordination between course design and study materials online platforms as the fifth one.

PG students provide less importance to misinterpretation of discussion topics and posts. UG and PG students think Learner's hesitation and non-cooperation to migrate to the new learning system was not a severe hindrance to hybrid learning. The Absence of a Common Interactive medium for conducting classes is considered a minor difficulty in hybrid learning by the UG and PG students.

Table 5 : The changes must be incorporated with curriculum, Course Design, and Implementation Methods.

Statements	Scale	Category		
		UG n= 142	PG n=102	p-value

								n=244
		N	%	Mean	N	%	Mean	
Reflective practices that help the students achieve the goals should be associated with the curriculum	SA	16	11.2	2.44	24	23.5	3.17	.000
	A	27	19.0		32	31.3		
	N	5	3.5		3	2.9		
	D	50	35.2		23	22.5		
	SD	44	30.9		20	19.6		
Group discussions and posts both in F2F mode and online mode should make one of the prime evaluation and learning tools for now and future curriculum modifications	SA	28	19.7	3.07	40	23.5	3.75	.000
	A	47	33.0		35	31.3		
	N	4	2.8		03	2.9		
	D	33	23.2		10	22.5		
	SD	30	21.2		14	19.6		
Time allocation of F2F and online interaction should be prioritized based on the nature and depth and complex city of the Topic, the need for practical doing, the convenience of learners and tutors, etc	SA	50	35.2	3.70	42	41.1	3.92	.201
	A	544	38.0		40	39.2		
	N	03	2.1		02	1.9		
	D	15	10.5		10	9.8		
	SD	20	14.0		10	9.8		
Student research and literature	SA	29	20.4	2.71	30	29.4		
	A	25	17.6		29	28.4		

review should incorporated into the curriculum	N	06	4.2		04	3.9	3.30	.003
	D	40	28.1		20	19.6		
	SD	42	29.5		19	18.6		
Case study method and guest talks should be an integral part of hybrid classroom	SA	18	12.6	2.37	21	20.5	2.71	.087
	A	24	16.9		19	18.6		
	N	04	2.8		03	2.9		
	D	42	29.5		27	26.4		
	SD	54	38.0		32	31.3		
Review practice of assignments, class works, and group activities between students should be included In Course Design	SA	44	30.9	3.54	36	35.2	3.86	.065
	A	52	36.6		44	43.1		
	N	04	2.8		03	2.9		
	D	21	14.7		10	9.8		
	SD	21	14.7		09	9.8		
Topic related The videos, Graphic investigation, Online Tutorials, etc must be included in the curriculum.	SA	45	31.6	3.60	40	39.2	3.96	.032
	A	53	37.3		42	41.1		
	N	05	3.5		03	2.9		
	D	20	14.0		10	9.8		
	SD	19	13.3		07	6.8		
The curriculum should have an emphasis on experimental learning methods from society and student's communities	SA	35	24.6	3.10	24	23.5	3.04	.766
	A	37	26.0		26	25.4		
	N	07	4.9		06	5.8		
	D	33	23.2		22	21.5		
	SD	30	21.1		30	23.5		
. Selection and	SA	51	35.9	3.68	40	39.2		

Orientation of a Learning Management System are crucial in the Implementation of Hybrid Courses	A	50	35.2		47	46.0	4.08	.013
	N	04	2.8		03	2.9		
	D	19	13.3		07	6.8		
	SD				05	4.9		
Surveys, Assignments, Online Quizzes, Online Exams, etc, should be selected as Assessment Tools along with Hand Written Exams.	SA	50	35.2	3.75	45	44.1	4.19	. 004
	A	54	38.0		45	44.1		
	N	04	2.8		03	2.9		
	D	20	14.0		04	3.9		
	SD	14	9.8		05	4.9		
Offline mode class timing may allot to complete the lab experiments, practical experiments, job training, etc.	SA	49	34.5	3.74	44	43.1	4.22	.001
	A	54	38.0		47	46.0		
	N	04	2.8		03	2.9		
	D	20	14.0		05	4.9		
	SD	15	10.5		03	2.9		
In a hybrid environment, F2F mode needs special attention as it plays a vital role in building emotional bonding between educators and students	SA	54	38.0	3.75	43	42.1	3.78	.866
	A	50	35.2		30	29.4		
	N	03	2.1		04	3.9		
	D	19	13.3		13	12.7		
	SD	16	11.2		12	11.2		
Students with various learning methods should be differentiated with their	SA	45	31.6	3.60	44	43.1	4.02	.013
	A	54	38.0		39	38.2		
	N	03	2.1		03	2.9		
	D	21	14.7		09	8.8		

needs, and the curriculum modified should be as per the styles and capabilities	SD	19	13.3		07	6.8		
Self Assessment Questionnaires and Multiple Choice Questions should give priority to Descriptive Type Questions	SA	45	31.6	3.59	21	20.5	2.59	.001
	A	54	38.0		27	26.4		
	N	03	2.1		04	3.9		
	D	20	14.0		26	25.4		
	SD	20	14.0		24	23.5		
Assignments, Individual interviews, Group Presentations, Individual presentations, Active participation in discussions, Timely responses, use of supportive instructional materials, etc, should carry weight in the evaluation process.	SA	64	45.0	4.06	50	49.0	4.01	.759
	A	56	39.4		37	36.2		
	N	00	00		00	00		
	D	10	7.0		09	8.8		
	SD	12	8.4		06	5.8		
Course materials should be made available both in hard and soft copies. Faculties should create a common place to save all materials	SA	64	45.0	4.23	47	46.0	4.29	.595
	A	62	43.6		46	45.0		
	N	04	2.8		03	2.9		
	D	09	6.3		04	3.9		
	SD	03	2.1		02	1.9		

Application and Analytical level questions should form the major part of assessment questions	SA	29	20.4	2.87	45	44.1	3.78	.000
	A	31	21.8		30	29.4		
	N	05	3.5		02	1.9		
	D	45	31.6		10	9.8		
	SD	32	22.5		15	14.7		

p< 0.05

The statements in Table 5 intended to know the student's perception of curriculum and course design. As the teaching and learning methods differ from the Hybrid method, the curriculum must modify with the new changes. This section consists of 17 statements. While checking the responses, it is clear that there are ten statements on which UG and PG students' opinions have significant differences (with p <.05). These statements deal with the inclusion of Reflective practices, student research, literature review, Topic related videos, Graphic investigation, on line Tutorials, etc. in the curriculum. There is a significant difference in UG and PG perceptions regarding various evaluation tools like Group discussions and posts, Surveys, Assignments, Online Quiz, Online Exams, Application and Analytical level questions, etc. Responses about the Selection of LMS, Allotment of offline class timings, etc, show the difference between UG and PG views. Test results show Curriculum modification according to students' learning methods and significant differences in UG and PG views. Related to the question types, there is a difference of opinion between UG and PG, as UG has more support for the Self Assessment Questionnaire and Multiple Choice Questions. At the same time, PG has shown interest in Application and Analytical level questions

The test result indicates no significant difference in UG and PG opinion (with p >.05) about seven statements. Both student sections agreed with the Time allocation pattern of F2F and online sessions. . Case study methods and Invited guest talks, Review practice of

assignments, class works, group activities between students, and experimental learning methods should be included in the curriculum. UG and PG opinions match with the evaluation components, which need weightage. The suggestion of offline mode needs special attention to build emotional bonding, and the availability of hard and soft copies of course materials possess no significant difference.

Findings

- When we analyze the learning experience of UG and PG students in the Hybrid Learning method, both sections of students are comfortable with the new study environment. However, in some aspects, PG students welcome the new system more than UG students.
- In a hybrid environment, PG students believe that the learners get more opportunities to master their learning process.
- Both sections of students believed that F2F sessions are essential to building strong relations with teachers and learners.
- In both sections, students are interested in maintaining the lecture role of the teacher rather than a mentor, and they believe that improvement in communication skills is essential in a hybrid environment.
- In the analysis of learning tools in a hybrid environment, it is clear that both sections of students give priority to F2F discussions.
- PPT presentations, class lecture notes, feedback from teachers and co-students, etc, are highly demanded among both groups of students.
- Tutor-prepared notes have more demand among UG students, though it's favored by PG, too. Online discussion has more influence among PG.
- Web Posts, library-subscribed journals, Learning Portals, Web Posted Study Materials, etc less impact on UG students.

- When analyzing the satisfaction level of various tools and technologies in hybrid learning, the effectiveness of CMS could be more satisfactory for both sections, and students like to get a proper orientation about it.
- UG students would like to be more satisfied with discussion forms.
- Among the challenges faced by the students during the learning process, the prominent ones are the Lack of Orientation at the start of the academic year and insufficient Information Technology facilities in Colleges and libraries.
- Time allocation of F2F and Online sessions are not proper.
- Noncontinuatively topic discussion in F2F and Online classes seems to be an obstacle in hybrid learning.
- UG students are not happy with the group activities as some group members are not actively participating in them.
- Both sections feel less difficulty in migrating to the new system.
- From the students' responses, it's clear that curriculum and course design should emerge new changes in learning patterns.
- The evaluation method should reflect changes incorporated into the curriculum.
- Besides the written examination, various activities and group work should be included in the evaluation process.

Conclusion

Blended learning acquired wide acceptability among learners and teachers, as they produced wonderful results. New-generation learners are more demanding and prioritized convenience in learning and service quality. The joint results of online and traditional learning can be utilized to build the future educational system as a great success. Behling, K. (2017), in his article, explores various aspects related to the design and implementation of hybrid courses.He notify the importance of student's access to various learning practices in hybrid mode. Faculties should be well-trained to handle the new technology-oriented

teaching system. The workability and ease of online learning fused with the social participation of traditional learning produce all positive aspects of both methods. Blended learning acts as an enzyme for academic innovation in the sphere of speedy developing technology and changing pedagogy. While choosing a blended learning strategy, every component like learning platforms, methodology, tools, resources, etc, of the new system should match with the course objective and students' usefulness of the designed course. Jerke, D.,&Mosterd, E. (2017) points out the importance of technical support in the victory of online courses. Most of the hybrid courses stick more on on line environment to deliver the course content , the learners must well in advance regarding the technological aspects technical support offered by the educational institution. The support system may concentrate on the academic, technical and learning pedagogy. The constructive use of open education resources can make wonders in new educational approaches.

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