



REDIFINING PEGAGOGICAL APPROACH IN HIGHER EUDCATION THROUGH BLENDED LEARNING

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Abstract

After the incident of the Covid-19 pandemic since December 2019, HEIs have experienced a switch over from traditional class-room learning approach and digital class-room learning approach towards Blended learning (BL). The blended learning approach includes off-line and online approaches, as an enhancement of face-to-face teaching methods, which result in the transformation of teaching and learning from a faculty member-centred model to a learner-cantered model through faculty member empowerment with ICT integration in all aspects of teaching and learning.

Though National Mission on 'Education through ICT' which was a strong recommendation of the 11th five-year plan and various other schemes have been introduced in India, we are not able to transit swiftly from face-to-face education to remote learning due to lack of institutional preparedness and accessibility by students to the new mode of delivering classes. Higher education institutions (HEIs) failed to construct an implementable academic plan of action for online mode of learning. There is a big digital divide between urban and rural, Government and private institutions and their students and faculty members.

In this research paper, a focus has been made to diagnose the major causes of the application of BL among faculty memberof HEI. The research study also discovered other influential factors based on individual faculty members' experience in BL

practices. Active surveys for data collection with 31 items relevant to the 8 constructs of the proposed model are adopted from the related literature. The questionnaires were administered to faculty members across different HEIs in Bangalore, Karnataka. Items were measured based on a five-point Likert scale. Criteria sampling was utilized to determine the faculty member from the HEIs. Participation for this research was voluntary, and faculty member provided their consent to participate. The tool used for the analysis was IBM SPSS/AMOS 23. Results are obtained from structural equation modelling; findings have been made on the hypothetical analysis of each of the motivational factors of faculty member. The analytical results of blended learning clearly prove that, Interactions of faculty member with technology have a positive effect on motivation for applying blended learning, Academic workload has a positive effect on motivation for applying blended learning, students have a positive effect on the motivation for applying blended learning, institutional environment has a positive effect on the motivation for applying blended learning.

Key Words: *Blended Learning, Intrinsic and extrinsic motivational factors, structural equation model,*

1. Introduction

The widespread availability of information and communication technologies (ICT) has transformed higher education institutions (HEIs) into multi-choice learning environments, that complement classroom learning experience and increase learning based on individual preference, which is independent of time and place. However, there is a desire to transform teaching and learning from a faculty member-centred model to a learner-centered model through faculty member empowerment with ICT integration in all aspects of teaching and learning. HEIs have experienced a switch over from traditional class-room learning approach and digital class-room learning approach towards Blended Learning Approach (BL) of both off-line and online approaches, as an enhancement of face-to-face teaching methods.

Blended learning is an effective approach to the passive knowledge engagement of a massive number of students, which also increases learning outside the traditional face-to-face learning environment. Additionally, BL is currently trending among

institutions due to its positive impact on student motivation and performance in general, as indicated by Lu et al. (2018), but due to Covid-19 effect in particular. BL helps faculty member to engage students in active learning that promotes skills such as communication, information literacy, creativity and collaboration that transform into the ability to use digital technologies for different purposes. If adopted appropriately, then BL can turn HEIs into a more flexible and agile state to quickly adapt to contextual changes; in a cost-effective manner.

Although BL has tremendous benefits for academics, there are also certain drawbacks concerning its implementation, for instance, the absence of an institutional vision shared with the front-line teaching staff. The lack of adequate institutional support for BL may also decrease the motivation of the faculty member to transform their courses into the blended format that can discourage their commitment to change. There may be a gap in the area of capacity building for BL together with the expected level of engagement for the teaching staff. Compared to HEIs of other developed nations of the world countries, BL approach to learning is in infants' stage in Indian HEIs, which needs to be addressed at the present juncture by all the stakeholders of HEIs.

2. Objectives of the Research Study/Research Issues to be addressed:

- 1) An effort to investigate the increasing faculty member interaction and the levels of learning through active research has to be incorporated in a blended course, since there is an *absence of a significant and effective BL process regarding the faculty member's interaction with the learning levels of students.*
- 2) The implementation of BL is more successful with faculty member motivation in the classroom, but unfortunately, there is *a lack of adequate research on faculty member motivation with regard to integrating educational technology in the classroom.*
- 3) Online instructional technologies are becoming more popular in HEIs but *the faculty member's opinions and beliefs regarding online learning tend to be generally negative!*
- 4) To facilitate BL in academic institutions, there is an absolute need for the HEIs *to have a clear and supportive institutional policy, leadership and practice related to their BL courses.*

- 5) A call has to be made for *more experience in blended and online learning environments* that could provide opportunities for graduate students or future faculty members to shift their attitudes regarding online learning.
- 6) Much of the existing research on BL often focuses on its pedagogical benefits, which often project *faculty to be less in the picture of BL research*.
- 7) Previous research on technology application often focuses on barriers and concerns regarding utilizing technology in the classroom, according to Nicolle and Lou (2008) there is *a glaring absence of a model to evaluate the effectiveness of blended e-learning by many higher institutions*.
- 8) There is a call for *further research on different BL models* with regard to *experimental research* to test the design principles for blended online learning and principles for face-to-face instruction for different kinds of learners.
- 9) Though, the BL approach *offers numerous advantages to faculty members*, but negative perceptions held by these faculty members may affect its application of BL models and then need for *more investigations on academic development to better understand the faculty member's concerns regarding BL practices*.

All the above research issues necessitate the shift of our focus to the faculty member! because students are always the case. Therefore, *this study intends to address the problem of the minimal research focus on faculty member in the field of BL, with a goal of supporting their motivation through a model design and evaluating the model in the context of a higher education institutions.*

3. Theoretical background of Study

➤ **Blended learning – Meaning and Definitions**

- BL can be viewed as the *combination of an online teaching method with face-to-face instruction*.
- **BL is a form of pedagogy that combines the face-to-face learning method and online instruction with a certain number of issues remaining in contention.** These issues include what to be blend? whether to add a reduction of seat hours in the definition or be specific regarding the amount of time for both online and face-to-face instruction or to solve the problem of pedagogical quality?

- **Driscoll, defines** BL by categorizing the concept into **four different groups**: “to **combine or mix modes of web-based technology** (e.g., live virtual classroom, self-paced instruction, collaborative learning, streaming video, audio, and text) to accomplish an educational goal; to **combine various pedagogical approaches** (e.g., **constructivism, behaviourism, cognitivism**) to produce an optimal learning outcome with or without instructional technology; to combine any form of instructional technology (e.g., videotape, CD-ROM, web-based training, film) with face-to-face faculty member-led training; and to create mixing or actual training or mixing of technology to create harmful tasks and work tasks.
- The *Editor of the journal of synchronous learning networks* forecasted that **80-90% of higher education courses would become blended in the future**, and at the time of this statement, scholars have started to note the “*explosive growth of blended learning*” and have mentioned that BL will become the “**new normal**” way of learning in higher education”.

4. Research methodology/Research Design

➤ Instrument for Data Collection:

- *An active survey* has been conducted for data collection with 31 items relevant to the 8 constructs of the proposed model are adopted from the related literature. The items are refined according to the needs of this study.
- **Data collection methodology and sample size and tools used...**
- **Criteria sampling** was utilized to determine the faculty member from the HEIs.
- **Participation** for this research was **voluntary**, and faculty member provided their consent to participate.
- The **questionnaires were administered** across the faculty members of different HEIs in Bangalore, Karnataka.
- The **data were collected** using both hard copy and online **questionnaires**.
- In total, 250 questionnaires were sent, 225 responses were returned, and 25 responses had missing data; therefore, 200 valid responses were evaluated. The rate of user responses for this study settled at 80%.

➤ **Statistical Tools Used:**

- Items were measured based on a five-point Likert scale, ranging from (1) strongly disagree to (5) strongly agree.
- The tool used for the analysis was IBM SPSS/AMOS 23.

5. Literature investigation - discussion and Hypothesis

AS indicated in research design, the major causes for the application of BL among faculty member of HEIs are reviewed. Lu et al. (2012) indicated that factors responsible for motivating faculty members to accept BL consist of interest, independent learning, personalized learning, computer self-efficacy, social perception, external expectation and improvement of skills. This research study discovered that, the other influential factors responsible for motivating faculty member to accept BL are grouped into two categories, **extrinsic and intrinsic motivating factors**, based on individual faculty members' experience in BL practices. Depending on the researcher's analytic interest, external influences can be termed as cultural, structural or instructional factors.

Another investigation by Torrisi-Steele and Drew (2013) viewed the instructor's motivation for impacting BL applications as follows: perceptions of usefulness, professional support, the point of need for technical support, funding, preparation time, institutional infrastructure, the involvement of senior staff, and efficacy, these factors are important variables of the technology application among faculty member of HEIs.

The idea of motivation is divided into two categories, **extrinsic and intrinsic motivation**. Extrinsic motivation is committing an action based on the perceived importance of achieving that task, while intrinsic motivation refers to acting based on interest in the action itself against extrinsic influences.

▪ **Blended learning Extrinsic Motivational Factors(EMFs):**

The below are the external motivating factors which have an influence on the faculty and students towards the benefits of blended learning.

EMF1: Faculty member interactions with technology (ICT Knowledge)

Information and communication technologies (ICT) are an essential factor in the current educational system and research. Faculty members should utilize modern technology for education to train students in the best broader domains and format via collaboration, which subsequently adds to student motivation. Specific barriers to technology have been identified

as facility availability, reliability and the complexity of technology itself. It is also a fact that faculty members anticipate comprehensive technical support and readiness from the institution regarding professional development technology training sessions, which has a significant effect on the faculty member motivation to use this technology for teaching.

The lack of access to appropriate hardware and software can slow and suppress the highest motivation. Additionally, when the technology infrastructure becomes unreliable, it has a negative impact on behavioural intention to blend, which will also result in negative perceptions with regard to integrating technology for education. Compatibility was also found to be positive and highly influential with respect to the attitudes towards the technology but not necessarily the system use itself. However, research reported that, there are no connections between tools and tasks used by faculty member in the LMS environment but also their intention to use the actual system. Therefore, from the related literature above, we can hypothesize that:

H1	Interactions of faculty member with technology have a positive effect on motivation for applying blended learning
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➤ **Faculty member academic workload**

A frequent question asked by a faculty member whenever they shift their focus towards the redesign process is how much time should be devoted to face-to-face classes and online activities? Based on the faculty members responses, one of the pressing concerns of faculty members regarding employing the services of online tools in teaching is academic workload. Blending is time demanding; there is no doubt of this, and faculty is solely responsible for the weighing of its costs. Notably, faculty members failed to adopt instructional technology due to a lack of adequate time commitment. The instructional design of blending requires a time commitment, which has a negative impact on the academic workload. It is suggested that, as workload increases, the chances of blending decreases. It is also the perception of faculty to view the cost to redesign instruction with regard to blending as a time-consuming approach. Based on this background, we can propose the following hypothesis:

H2	<i>Academic workload has a positive effect on motivation for applying blended learning</i>
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➤ **Institutional Environment**

The implementation of BL must go hand in hand with a change in teaching practice, which affects many HEI's core services, including content, learning interactions, assessment, credentialing, and student support plus technology. These changes demand that the role of faculty member and students to be remodelled and learning responsibilities renegotiated. Institutional administration regarding strategic planning, policy making or even substitute for incentive structures trigger the intention to blend. Research studies states that, models of BL are more likely to have less problems when they align with local institutional needs. Organizational readiness to assist blended instruction and systems of communication between students, faculty and administrators are also deemed vital in influencing blending. Faculty shows concerns regarding the administrative control of systems and the presence of institutional support.

To make BL a success, there is an absolute need for the Institution to have a clear and supportive institutional policy, leadership and practice towards the idea of BL courses, as is reported to be under-represented in the BL literature. Experts have developed a conceptual frame- work by identifying a space in which both academics and professionals can engage one another collaboratively to trigger expertise, all to address the challenges of administrative concerns for accountability and strategic intellect for blended courses. The presence of organizational structure, strategy and support fuel the BL process together with the individual decision making of faculty member. While institutional decision making, strategy, structure and support encourages or discourages BL application, decisions regarding infrastructure and institutional support were found to be important motivators among the faculty members). Accordingly, hypothesis three is proposed;

H3	<i>Institutional environment has a positive effect on the motivation for applying blended learning</i>
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➤ **Faculty member interactions with Students**

According to research studies, students usually give positive feedback with regard to BL practice and, based on that, faculty continues to introduce online tools in their respective courses. Students have relied less on faculty member as the source of knowledge but instead as facilitators of learning. Therefore, faculty members are required to have a clear

understanding of the students' motivation to engage in online or blended education. It is always important to train students on how to use online tools? Research on blended instruction from the African University indicates that the lack of adequate computer skills and limited access to technology discourages faculty member from adopting blended instructions. Hence the students' technological literacy becomes part of the blended course requirement. Therefore, based on the literature investigation and discussion above, the following hypothesis is proposed:

H4	<i>Interactions of faculty member with students have a positive effect on the motivation for applying blended learning.</i>
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▪ **Blended learning intrinsic motivational factors (IMFs):**

The below are the internal BL motivating factors influencing the faculty members towards the successful implementation of blended learning in the HEIs.

➤ **Faculty member attitudes and beliefs:**

Many studies have identified faculty member' attitudes and beliefs regarding BL applications as a vital influencer for BL implementation. There are two common kinds of attitude and beliefs on BL with regard to faculty member in the BL literature. First, one has to do with attitude and beliefs on *technology* that influence and shape the *decision* made by the faculty member. Second, attitude and beliefs regarding *teaching* were salient. Although technological anxiety has a strong negative impact on the faculty's intention to adopt BL, at the same time, the chances of adopting BL is greater with faculty members that have a high degree of internet self-efficacy. Likewise, faculty member' beliefs regarding teaching are said to be a significant motivator for BL application and gives many disciplines to faculty members. Therefore, based on the literature investigation and discussion above, we can propose the following hypothesis:

H5-	<i>Attitudes and beliefs of faculty member have a positive effect on the motivation for applying blended learning.</i>
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➤ **Faculty member learning:**

Institutional support concerning the 'training' prepares the faculty member on how to handle online tools? Capacity building in relation to training is the most critical support that a faculty member can tap from the institution. Guidance and support from the institution are required

by the faculty member to aid them in utilizing online tools in teaching. Additionally, professional development programmes must be made available, specifically for pedagogical and technological skills together with a good strategy. Organizing training programmes such as online tutorials also widen the technological skills of the faculty members. However, broad technological skills boost the intention of the faculty member to use online tools for teaching. Being an active participant of the capacity mentioned above helped faculty member to address the issue of technology anxiety and skepticism for successful implementation. Hands-on practice also shaped faculty members' perceptions of some issues regarding the quality of teaching that can be achieved using online tools. Therefore, from the literature investigation and discussion above, the following hypothesis is proposed:

H6- Faculty member learning has a positive effect on the motivation for applying blended learning.

➤ **The concept of Motivation with respect to BL application**

Motivation has to do with energy and all other aspects of initiation and intention. Although we tend to become motivated due to numerous factors that are unique to specific experiences and consequences, strong extrinsic coercion is a strong influence on individuals without a doubt. Researchers have reported that the motivation as an active mediator that helps faculty member become ready to apply ICT in their teaching and learning.

Motivation is also regarded as a product of the interaction between a person and a particular situation and is not a personal trait. The entire process of motivation symbolizes how one's effort is encouraged, positioned and maintained towards attaining a particular goal. This process is claimed to work effectively when the individual needs are not in conflict with the target goals. According to early theories of motivation, Maslow's hierarchy of needs (theory) is divided into five levels, i.e., from lower order to higher. Individuals must satisfy lower-order needs to attain higher-order needs. Lower-order needs are termed extrinsic needs, namely, physical and safety, while higher-order needs are referred to as intrinsic needs, namely, social, esteem and self-actualization.

Earlier researches have shown that perceived usefulness is a good representation of extrinsic motivation and perceived playfulness as intrinsic motivators. However, Herzberg's motivation theory (hygiene theory) considers motivation to be a product of two factors, namely, hygiene factors, also termed extrinsic (environmental), which are factors that are responsible for job dissatisfaction. The second factor is the **motivator**, referred to as intrinsic

factors responsible for the creation of job satisfaction. Motivation theory is about behaviour and offers some clues regarding what instigates a person to intend to repeat a particular behaviour or action. In addition, other research studies discovered perceived usefulness to be an extrinsic motivation and perceived enjoyment as an intrinsic motivator.

Moreover, it was confirmed that the two motivational factors are essential influencers to intentionally use and accept information technology. “The importance of BL to faculty members is that blending can personalize learning by adjusting their pedagogy and online environment to the motivation of students, which helps them perform at more personal levels”. Therefore, based on the discussions above, we hypothesize the following:

H7-Motivation for applying blended learning has a positive effect on applying blended learning

Analysis and Interpretation:**Table-1: Research model constructs summary explanation**

No.	Construct	Description
1	Teacher Interaction with Technology	Teacher technological literacy due to frequent interaction with technology.
2	Academic Workload	The time required to integrate technology with instructional task.
3	Institutional Environment	Preparing the institution in terms of necessary facilities that aid blending. Interaction with Students Retrieving positive feedback from students on what encourages migration to BL.
4	Interaction with Students	Retrieving positive feedback from students on what encourages migration to BL.
5	Motivation for Applying Blended Learning	Teacher satisfaction with factors that aid BL Application in teaching.
6	Teacher Attitude and Beliefs	Teacher personal attitude and beliefs with respect to integrating technology with teaching and learning.
7	Teacher Learning	Teacher capacity building in terms of training, seminar etc.
8	Applying Blended Learning	The outcome of satisfaction with motivational factors that influence the end result of Applying blended learning.

Table- 2 : Demographics data and descriptive statistics

Category	Frequency	Percentage %
1. Gender:		
Male	87	43.5
Female	113	56.5
Total	200	100.0
2.Age (in Years):		
25–30	33	16.5
31–35	43	21.5
36–40	38	19.0
41–45	34	17.0
46–50	33	16.5
51 and Above	19	9.5
Total	200	100.0
3. Designation:		
Research Assistant	20	10.0
Guest Faculty	50	25.0
Assistant Professor	42	21.0
Associate Professor	48	24.0
Professor	40	20.0
Total	200	100.0
4. Teaching Experience in Years :		
Below 5	46	23.0
6-10	36	18.0
11-15	56	28.0
16-20	30	15.0
20 and Above	32	16.0
Total	200	100.0
5. Do you apply BL to your Course?		
Yes	80	40.0

No	120	60.0
Total	200	100.0
6. Received training in BL		
None	122	61.0
1-5 Hours	50	25.0
More than 5 Hours	28	14.0
Total	200	100.0

Table -2 presents the characteristics of the respondents: 43.5% were female and 56.5% were male. Of the respondents, 16.5% were between 25 and 30 years of age, 19.0% were between 36 and 40 years of age, and 9.0% were between 51 and above. The title demographics of the respondents indicate that 25% of the respondents are guest faculties, 24% of the respondents are associate professors and 20% of the respondents are professors. The years of teaching experience, which are placed on five different categories, indicate that 23.0% of the respondents have been teaching under five years, 28.0% have been teaching 11–15 years and 16.0% have been teaching 20 years or greater. Additionally, only 40% of the respondents indicate that they apply BL in their courses, while 60% indicate that they do not engage BL in practice. Finally, 61% of the respondents indicated that they did not receive any form of training on BL!, while 25% indicated that BL training that they received lasted between 1 and 5 hours and 14% respondents responded that, they got training for more than 5 hours in BL.

Table-3: Result for Reliability and Constructs Validity Analysis

Constructs	Items	CR	AVE	Factor Loading	Cronbach's Alpha
AW	AW1	0.873	0.633	0.84	0.871
	AW2			0.76	
	AW3			0.75	
	AW4			0.80	
IE	IE1	0.908	0.711	0.82	0.906
	IE2			0.83	
	IE3			0.86	

	IE4			0.86	
MA	MA1	0.883	0.654	0.82	0.882
	MA2			0.82	
	MA3			0.84	
	MA4			0.75	
AB	AB1	0.845	0.645	0.81	0.845
	AB2			0.83	
	AB3			0.44	
	AB4			0.77	
IT	IT1	0.880	0.649	0.69	0.870
	IT2			0.87	
	IT3			0.92	
	IT4			0.72	
IS	IS1	0.803	0.505	0.73	0.802
	IS2			0.72	
	IS3			0.70	
	IS4			0.69	
IL	IL1	0.871	0.629	0.73	0.866
	IL2			0.86	
	IL3			0.84	
	IL4			0.73	
ABL	ABL1	0.842	0.640	0.82	0.841
	ABL2			0.79	
	ABL3			0.80	

Note: *IL-Teacher Learning, AW- Academic Workload, IE- Institutional Environment, MA- Motivation for applying blended learning, AB- Teacher attitude and beliefs, IT- Teacher interaction with technology, IS-Teacher interaction with students, AL-Applying blended learning.*

Results:

- Reliability refers to the consistency of a test or measurement, the concept was used in this study to conduct a confirmatory factor analysis (CFA) of the measurement model

so that the internal consistency of the data could be validated.

- First, the analysis of the measurement was carried out by comparing the eight-factor model (Instructor Interaction with Technology, Academic workload, Institutional environment, Instructor interactions with students, Instructor Attitude and Beliefs, Instructor learning with motivation for applying blended learning towards the final construct, applying blended learning).
- Internal consistency and reliability were evaluated using Cronbach's alpha coefficient analysis for each construct. If Cronbach's alpha coefficient of items for each construct is higher than 0.7, then the items are considered highly reliable. All the respective Cronbach's alpha coefficients of the eight constructs were greater than the recommended value of 0.7 or higher. The values of standardized loading estimated for all the items were higher than 0.5, while the composite reliability (CR) was recommended to be higher than 0.7 and the average variance extracted (AVE) was higher than 0.5. Therefore, the values for the AVE and composite reliability (CR) were all higher than 0.5 and 0.7 respectively, as recommended by Šumak and Šorgo (2016), Chauhan and Jaiswal (2016) and Tosuntaş, Karadağ, and Orhan (2015).

Conclusion:

In this research study, a motivational model for predicting teacher motivation for applying a BL approach in the context of HEIs is developed. The results provide convincing support for the proposed model. Six out of the seven hypothesised relationships between the model factors were found to be significant, giving greater insight into the teacher motivation for BL in the context of HEIs. However, the proposed model not only can predict teacher motivation towards BL practice but also all faculty members can use into probe the possible reasons for the lack of motivation for BL. Therefore, adjustment strategies can be proposed to have the user's theoretical and practical understanding of a BL system that is viable to teacher and their respective institutions.

Research Limitations:

Similar to many other research studies, this research has its own limitations.

- The first major challenge encountered by the researchers is in the area of data collection. The participants, the important members of the faculty, are always busy, thus there was a delay in retrieving the questionnaires. The same experience was occurred with the

online version of the questionnaire. The researchers had to send a reminder and waited for some time to collect the required data

- The second major challenge was related to the scientific quality and interpretations of the research data, which includes ensuring that the data passed the reliability and model fit indices the test to proceed with the study.
- The researchers managed the issued professionally by ensuring the data are free from random error, an internal consistency was established and model fit indices were realised.

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