Transitioning into Fully Blended Learning: A Model for Faculty Blended Learning Adoption

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Abstract

Higher education institutions the world over is turning to Blended Learning (BL) as the preferred teaching and learning delivery approach. However, to attain campus-wide adoption requires an understanding of the influencing factors that motivate academics towards teaching in BL mode. Given this context, this paper presents findings from a qualitative study that investigates the lived experiences of academics as they adopt BL for teaching and learning in a Ghanaian university. Adopting a Grounded Theory as the methodology for this research within a sequential qualitative research design, data was collected from multiple sources. Primary data was obtained from in-depth interviews of 22 academics carried out to understand how they construct and navigate the BL teaching experiences. Secondary data was obtained from policy documents, faculty training signing sheets and Learning Management Systems (LMS) activity logs. The data was analysed using the constant comparative method and thematic analysis and triangulated to organize the themes and concepts for the proposed model. The outcome of the analytical process is theorized into an adoption model and grounded in the literature. The findings of the research provide very useful and practical model

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for administrators to stimulate Faculty motivation as they embark on BL implementation. The model indicates that external and internal environmental factors stimulate Faculty motivation to make a choice regarding the teaching modalities they prefer. It posits that as Faculty members begin to implement teaching process using technology, they become sensitized and begin to internalize the differences between the two teaching modalities/models and thus decide to adopt BL based on the level of implicit and explicit motivational factors that exist within the faculty members and the university.

Keywords: Blended learning, grounded theory, motivation, adoption, constant comparative analysis, developing countries.

1 Introduction

Teaching in Higher Education Institutions (HEIs) have evolved from being predominantly face to face to including other new forms (Alhomod and Shafi, 2013). According to Taylor and Newton, (2013), HEIs currently deliver education through three primary forms. (Taylor and Newton, 2013) These include traditional or face-to-face learning that is carried out in person and typically in classrooms (Aranyossy and Kulcsár, 2020); distributed or distance learning and the combination of the two above, known as Blended Learning (BL) (Docsa and Szlavik, 2015; Anthony et al., 2019). In its simplest form, BL is defined as "the range of possibilities presented by combining Internet and digital media with established classroom forms that require the physical co-presence of teacher and students." (Friesen, 2012). Higher Education Institutions around the world are widely embracing BL for teaching and learning (Alammary et al., 2014). As technology advances and permeates large areas of human endeavour, so has there been a complimentary impact on the fortunes of higher education Institutions in terms of technology. Numerous digital media tools such as Learning Management Systems (LMS) and Moodle have been developed to enhance teaching and learning. Learning has become more engaging, more interactive, and more stimulating for both Faculty and students. Blended Learning has increased in popularity and is now the preferred delivery mode in universities (Medina, 2018; Mestan, 2019; Liu et al., 2020). The ubiquitous nature of BL and its ability to transform the entire academic workflow processes are driving universities towards adopting and implementing (BL) as the norm (Halupa, 2020). The extent to which BL is being adopted suggests that it is becoming the new standard in HEI (Dziuban, Graham et al., 2018; Smith and Hill,

2019). Its potential to transform the academe and make it responsive to the needs of students, Faculty and administrators in the new digital age is not in doubt (Garrison and Kanuka, 2004; Pavla et al., 2015).

Well-rehearsed arguments have been advanced in support of blended learning. Some of these include: increased student learning outcomes, increased flexibility for both students and Faculty, stimulation of critical thinking, access to educational opportunities for underrepresented communities, cost efficiency and enhanced student and Faculty interaction (Chen and Tat Yao, 2016; Sadeghi et al., 2014; Owston et al., 2019; Pérez and Riveros, 2010; Pavla et al., 2015).

Carbonell and others (2013) suggest that BL has the potential to "unleash the creative potential of faculty" to move students from being passive recipients of knowledge to active learners. While for many academics and researchers (Picciano, 2019; Stein and Graham, 2020), the potential of BL to be the preferred teaching approach is not in doubt, there are, however, many drawbacks that impact on the adoption of the Blended Learning mode.

Absence of institutional policies to guide the implementation of BL, lack of infrastructure to support BL integration and Faculty's technological competencies to teach in BL mode have been cited (Rasskazova et al., 2019; Singh and Hardaker, 2014; Ocak, 2011). Furthermore, poor institutional change management practices that fail to obtain stakeholder buy in and the negative perceptions and attitudes about BL held by faculty contribute to failed BL implementation (Alghanmi, 2014).

Thus, there are suggestions that BL adoption is complex and requires a high degree of concerted effort, coherent decision making and action from all stakeholders (Marshall, 2004; Benson et al., 2011; Ocak, 2011) for its adoption and implementation to succeed. Studies indicate that the complex process of BL adoption is influenced by "learning technology, academics, context and strategies" (Liu et al., 2020). While there are extensive studies on BL from the perspective of institutional strategies (Kisanga and Ireson, 2015; Jobst, 2016), context (Mirriahi et al., 2015), learning technologies (Alammary et al., 2016; Means et al., 2013), students (Korkmaz and Karakuş, 2009; Hakala, et al., 2017; Chen and Tat Yao, 2016), there are very few studies on BL from the perspective of academics (Abrahams, 2010; Mozelius et al., 2017; Halupa, 2020; Liu et al., 2020) even though they are considered the primary decision makers when it comes to the pedagogical approach to use in teaching (Porter et al., 2016). If universities will be successful in their transition to fully adopt BL as the teaching methodology, there is the need to overcome the challenges that impact negatively on its adoption.

Thus, this study contributes to the ongoing discussion on the adoption of BL by Faculty using a Ghanaian public university X, as a case study. The University (X) adopted a Blended Learning (BL) policy in 2012/2013 after a management decision was taken to transition from face-to-face delivery to a fully Blended Learning mode of delivery. The decision directed that all the 236 undergraduate courses being run within the three faculties be redesigned to allow for delivery in BL mode the following year. The courses were redesigned to have about 80% of teaching being delivered online and 20% via face-to-face delivery mode. As part of the process for implementation, students were front loaded with learning and course materials through the Moodle Learning Management System to usher in the online programme. Students were expected to complete all content online and engage in online interactive sessions with Faculty. Thereafter, face-to-face on campus delivery was organised to complete the course session. Unique as this teaching approach is to the institution in question, an evaluation of the Blended Learning model in 2018/2019 academic year indicated that more than two-thirds of Faculty members were not teaching in BL mode (Dean's Report, 2018).

The objective of the study is to investigate the contextual factors influencing Faculty adoption and inductively, model their experiences into a BL adoption model. The research question for this paper is: What factors influence Faculty towards adopting Blended Learning and how can these influences be constructed into an adoption model for faculty teaching in BL mode.

The rest of the article follows this arrangement: The Literature Review in Section 2 discusses Faculty adoption of BL in HEIs. The research method is presented in Section 3. The findings are presented in Section 4. Section 5 presents the discussions, and the conclusions are presented in Section 6.

2 Literature Review

Research has consistently shown that students value BL when online delivery is reinforced by face-to-face sessions, (Asunka, 2017; Adekola et al., 2017; Porter et al., 2020). Zhang and Zhu (2016) systematically analysed 103 journal research articles with the purpose of exploring the status of BL research and its direction. Their study found that BL research was focused on the design, strategy, and effectiveness of BL as a teaching approach. They concluded that teaching in BL mode was more effective than only face to face or wholly online programmes. The study further indicates that teaching

in BL mode enhances students' learning experiences. Notwithstanding the advantages of BL as detailed in the research findings of Torrisi-Steele and Drew (2013); and Castro (2019), indications are that members of Faculty are hesitant and reluctant in teaching in BL mode.

In a highly influential paper, Ocak (2011) explores the reasons why members of Faculty are apprehensive in adopting BL in Turkish Higher Education system. The exploratory case study interviewed 117 Faculty members from 4 universities. The results indicate that Faculty found the instructional processes involved in teaching in BL mode quite complicated. This complication emanates from the using Learning Management Systems (LMS) to teach. It does suggest that the lack of the requisite instructional competence and adequate training to navigate LMS present significant challenges to faculty. The study also identified issues such as lack of consultation between Management and Faculty during the implementation process and planning as barriers to use of Blended Learning. Again, lack of technical support for members of Faculty as they teach in the BL mode was identified. The study highlights the complexities involved in teaching in BL mode and concludes with the call on institutional managers to address barriers that impact negatively on BL adoption by Faculty.

Asunka (2013) confirms the findings of (Ocak, 2011) through his investigations into the underlying reasons why Faculty were not teaching in BL mode in a Ghanaian university. The views of 74 instructors were sought to identify their challenges. Also, to have a good basis for analysis Asunka (2013) accessed the faculty levels of adoption. An "examiners" category representing 58% out of the 43 respondents emerged. This category were faculty members who only used the campus LMS to upload material for students to download rather than using the system to teach (Swan, 2009; Porter et al., 2016). Asunka (2013) further identified personal issues, pedagogic and students' perception as the possible barriers to Faculty adoption. In terms of pedagogy, the members of Faculty indicated that the courses they taught required minimal use of technology. Time, extra workload, and lack of personal computers by Faculty were listed as personal issues identified as delimitating against their use of the Blended Learning system. These limited their reliance on the university's technology resources. Again, Faculty did not teach in BL mode because they felt the BL mode put undue pressure on students to buy at their own expense, data bundles for online discussion forums.

Rizvi et al. (2017) conducted a comparative study into the barriers affecting the adoption of BL by Faculty using a university in Pakistan and

another in East Africa. The study conducted a cross sectional survey and found that 50% of Faculty members perceived BL to be their preferred teaching approach. Significantly, 50% of the lecturers were found to possess the relevant instructional competence to teach in BL mode. The study also established that, Faculty viewed the time required to prepare instructional materials as extra workload. It also found that the lack of Management's recognition of their efforts to count towards their professional advancement as a disincentive to the use of Blended Learning in teaching (Rizvi et al., 2017). The study recommends that universities introduce mentorship programmes to assist Faculty with how to integrate technology into the teaching of their courses.

A study undertaken by Newton and others (2002), examined how to effectively operationalize online learning by identifying the relevant variables for effective implementation of BL in the mining industry in Queensland, Australia. The study's methodology adopted an inductive Grounded Theory to compare the findings of the interview schedules with the findings derived from the related articles in the literature. The researchers found that external influences, organizational structures and culture, training needs of learners, and online learning environment were the major factors necessary for the effective implementation of BL in the case study.

Other studies have used the lived experiences of Faculty members to develop models to provide administrators with solutions that address Faculty adoption issues. Moser (2007), developed the Faculty Educational Technology Life Cycle Model. Central to the author's thesis was the argument that time spent by Faculty members utilizing technology for teaching purposes is the single most important element to determine Faculty adoption of BL. Moser (2007) argues that given that there is competing demands on faculty time, how much time a Faculty member finds to devote to developing quality instructional materials for teaching, determines whether they will teach in BL mode. Additionally, Moser's (2007) faculty adoption life cycle posits that there is a positive relationship between commitment and competency development. Therefore, the amount of time invested is a prerequisite for competency development. In other words, when faculty members make the right time investment, there is a corresponding increase in their competence to develop quality instructional materials for teaching in BL mode.

While there is literature on faculty adoption, it was observed that except for Asunka (2013) most of the studies that were reviewed considered data from universities from developed countries. It does therefore require a contribution to the faculty BL discourse with research from a developing country

context. Further to this, while the findings from the literature provide anecdotal accounts of faculty barriers, there is no study that inductively investigates faculty adoption to generate theory or a substantive model using motivation as a core concern.

3 Methodology

This study uses the Grounded Theory (GT) methodology. This method describes the conduct of participants within their lived experiences. Using GT as a method enables the capturing of the primary concerns of individuals into concepts that are organized around a core category and hypothesised into a theory (Glaser, 2002). Grounded Theory is chosen as the methodology for this study because of its inductive capacity to develop theory rather than test theory. It has been used in many studies to help understand the implicit social interactions within a social environment. For example, Komives and others. (2006) used GT to develop a leadership identity model to help understand how individuals construct their identities within groups. Similar studies by Newton and Ellis (2006) developed a model for e-learning integration using GT that throws light on the introduction of e-learning in the Australian military establishment. Using GT allowed the theorising of the experiences of the military respondents into an e-learning integration model that identified "organisational priorities, instructors' roles, learners' needs and the learning environment" as contributing to factors that lead to a successful e-learning culture (Newton and Ellis, 2006). Thus, we use GT to investigate factors which lead to the adoption of BL by academics in the case study at the university.

3.1 Research Design

A simultaneous qualitative research design was adopted for the research. This research design sets out to have a supplementary first phase followed by a core component. For our purposes, an initial exploratory research was carried out to provide insight into the underlying issues of BL in the case study university. The supplementary component in such designs contributes explanatory details that dove tail into the core component thereby providing rich descriptions in the core component stage which enrich theory development (Morse, 2010). According to Morse (2010) data inadequacies, inadequate sample, or the outcome of the supplemental component not being interpreted alone necessitates these kinds of designs. A Grounded Theory was used for the core component. The research design followed sequentially.

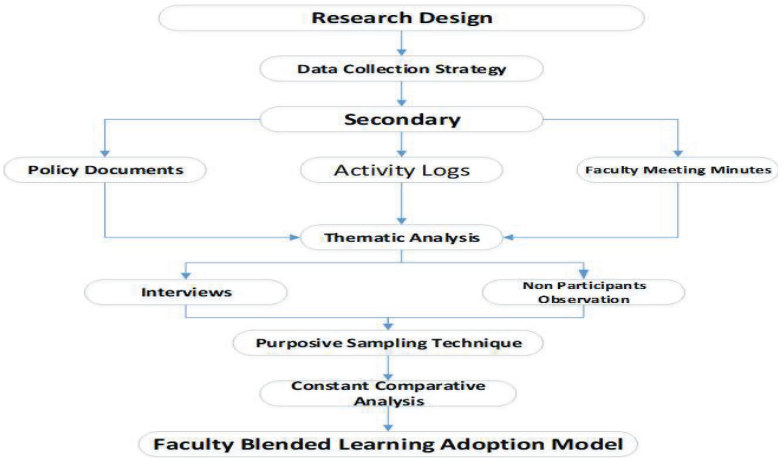

Figure 1 Research design framework.

Author's construct, 2020.

3.2 Data Collection

To gain access to respondents, the researcher sought institutional consent to interview Faculty members. Thereafter, using a purposive sampling approach, 22 innovative Faculty members were selected for the study based on their experience in teaching in blended mode. The respondents were purposively selected from the Faculty of Computing and Information Systems (F. o. C.I. S), Faculty of Engineering (F. o. E) and Faculty of Information and Technology Business (F o I.T. B). Data was collected during the first semester period between November and December 2019. Data was collected mainly through in-depth interviews, non-participant observation of the face-to-face and blended teaching processes and other secondary sources. Secondary sources included instructional material, policy documents, Moodle LMS logs and discussion boards. In order to strengthen the findings, multiple data sources were used or deployed because they provided opportunities for data triangulation thereby ensuring consistency and validity of the research (Daengbuppha et al., 2006).

The GT process essentially is not a method that attempts to prove or disprove a theory but it allows the inductive generation of concepts within a social context that are eventually integrated into a substantive theory or a model (Hoda et al., 2012). Baturina (2015) advises that the GT researcher should conduct a limited literature in order not to be influenced with pre-conceived ideas that might influence the course of the interviews during data

collection. The caution is for the researcher not to be tainted by preconceived ideas (Glaser, 2002; Charmaz, 2015). Taking a cue from this idea, an interview guide was developed without any a priori theoretical underpinnings and in accordance with suggestions to limit extensive literature reviews.

The functional application of the methods of data collection is discussed in the sections below.

3.2.1 Non-participant observation

The Non-participant observation gave the researcher an overview of the BL process adopted by the Faculty respondents. It gave the researcher the opportunity to observe the instructional processes used by the Faculty members as they delivered their courses through the period of the data collection. Six lecturers committed to sharing their experiences thus providing the researcher with opportunity to gather valuable data. Data was collected using field notes and observation of teaching in both face to face and blended mode. Field notes documented Faculty and students' interaction in both mediums. Additionally, the researcher was given rare access to attend and sit in Faculty Board meetings during which BL delivery issues and matters arising were discussed.

3.2.2 In-depth interview process

The interview session followed the prescriptions of (Rowley, 2012; Brinkmann and Kvale, 2018). Brinkmann and Kvale (2018) suggest that interviews are conversation and prescribe a set of guidelines that a researcher can follow to get rich and meaningful data for their research. Amongst others, Rowley (2012); Brinkmann and Kvale (2018) recommend that the researcher maintains power and balance during the interview process, respect the privacies and boundaries of respondents, not to ask leading questions that will yield yes or no answers, ask permission to record the sessions, agree on the duration of the interview and allow them latitude to express and describe their experiences from their perspectives and not vice versa. Furtherance to the above, the purpose of the research was communicated to the respondents through email correspondence. The questions were then emailed to the respondents beforehand to enable them to familiarize with the questions and get prepared. To deal with power asymmetry, the interviews were conducted in the comfort of the offices of Faculty members. The interview sessions lasted between forty-five and sixty minutes. The questions were semi structured and allowed for respondents to be engaged in informal conversation in such ways that the respondents had the opportunity to explore

and share their thoughts regarding the questions that were asked. Consent was sought and was given to record the interview sessions. Questions that were asked covered broad areas of institutional policy, management support, students' experience with the BL teaching process, faculty concerns and overall Faculty experiences. The interview guide is attached as Appendix 1. The respondents agreed to proofread their transcripts and validate the contents before analysis begun.

3.2.3 Secondary data sources

The secondary sources of data used for this study include the university BL policy documents and the university's Centre for Online Learning and Teaching (COLT) annual reports. Faculty training logs were obtained for the 7 training sessions that had been organised between 2013 and 2019. Also, online support activity logs were collected between September and December 2019.

3.2.4 Data storage

To make available for traceability in consonance with the canons of good qualitative research practice (Gioia et al., 2013) all the collected data were stored in file folders in NVIVO 12 software package for further analysis.

3.3 Data Analysis

To ensure coherence in the flow of the data, it was ordered and analysed according to the chronology of the sequence in which they were collected. This availed the researcher the opportunity to examine the research process as well as the data.

3.3.1 Non-participant observation

The field notes taken during the non-participant observation and the data gathered from the secondary sources (policy documents) were analysed using thematic analysis (Nowell et al., 2017; Maguire and Delahunt, 2017). The researcher approached the data sources using the same guide/brief prepared for the in-depth interviews. Thus, the policy documents, the meetings attended, and the non-participant observation were subjected to analysis asking questions that answer the research questions. The choice of this analytical method is grounded in the argument made that thematic analysis can be used to analyse a range of epistemologies and answer a lot of research questions (Nowell et al., 2017). Thematic analysis organizes, describes and

reports themes found within a data set (Maguire and Delahunt, 2017). In both instances, because the researcher did not tackle the analysis with some preconceived knowledge, there was need for him to begin the process by familiarizing himself with the data by reading and internalizing the data. Having done this, the textual data was subjected to line-by-line coding. This involved reflecting on the text in the data and ascribing meaning to them through a theorizing process. The coding process run through the entire data sets. Thereafter, through a theorising process codes that bore common meanings were identified and grouped into common categories through a process referred to as 'abstraction'. The categories that emerged were analysed and those that were similar were abstracted and assigned into higher order categories called themes. The results of this process are presented in the next section.

3.3.2 Secondary data analysis

The Faculty training logs were obtained from the COLT and they were signed time sheets that were filled in the COLT administrative data archives. They were collated on excel sheets, tabulated, and analysed to access the number of Faculty that had signed up for training and to check the number of Faculty that successfully completed the training sessions. To validate this process, the researcher confirmed the completion rate against the certificate awards database held by the registry of the University. In the case of the LMS activity logs, they were pulled from the university MOODLE platform with the assistance of the head of the centre and analysed using statistical software and captured in the form of graphs and presented in the findings.

3.3.3 The grounded theory process derived from the in-depth interview

As indicated in Section 3.2.2, the audio recorded interviews were transcribed into textual data. To analyse this, the constant comparison analytical method was employed to breakdown the data. The constant comparison analysis method is an analytic induction process that compares textual data that is reduced into codes against each with the objective of looking for patterns and themes (Hewitt-Taylor, 2001). It only stops when no new themes emerge from the data. The primary concern of the Grounded Theorist was the development of empirical data interpretations. In this case, words of the respondents are analysed using a systematic process that constantly compares, assigns meanings to the words and theorising with the goal of developing theory or a substantive model. The GT process adopted for this study follows that of Glaser (2002).

3.3.3.1 *Coding stage*

The first stage involved retrieving the transcripts from NVIVO and thoroughly read through the data to familiarize and get immersed into the data to have a command of what the respondents were communicating. The textual data from the interviews were then fragmented and coded during the second stage. Line by line coding was adopted. The coding process involved reading the interviews and ascribing meanings to the text in the form of words or phrases that best describes what the text represents. Seven transcripts were randomly selected and arranged for coding between the researcher and an external coder. The purpose was to generate codes that could be uniform and used across the entire transcripts. It also ensured reliability and trustworthiness in the GT process. The second coder was a lecturer from a different university who was not related to the research but had substantial experience in qualitative research methods. After two weeks, a meeting was held to discuss and reconcile differences in the two generated codes. However, no significant variations were observed between two coding schemes. Code out of scope were removed. For example, codes like distance learning and e-learning were observed to cut across the sample. Therefore, it was agreed between the two coders that these were descriptions given to BL by the respondents and as such, anywhere they were found in the text, they could be substituted for Blended Learning. Thereafter, the researcher applied the codes to the remaining transcripts. The coding took two weeks to complete. In the process, 323 unique codes of various nuances were generated from the transcripts.

3.3.3.2 *Emergence of concepts*

The third stage consisted of comparing all the 323 codes against each other. The aim was to look for codes that were similar and put them into common groups. This process ensured that the data was fragmented and put into unique codes that shared similarities into overarching groups called concepts.

3.3.3.3 *Emergence of categories*

Throughout the axial coding, patterns and themes were searched across all the conceptual categories that had eventually emerged. Concepts were compared against each other to find similarities to group similar concepts into *categories* (Hewitt-Taylor, 2001). The last analytical procedure, selective coding, was applied to generate a core category that integrates and generates the theory. A conditional matrix that was developed to facilitate the integration of all the categories and help in establishing the linkages of the categories to the core

concern had emerged. Figure 1 presents an illustration of the open coding process taken from Table 1 depicting a group of unique codes that are formed into concepts and finally morphed into categories. Figure 2 also shows the conditional matrix used to facilitate the integration of the categories with the core concern used in developing the faculty adoption model.

Table 1 presents the analysis of the data detailing all the GT stages applied and their respective outcomes.

3.3.3.4 *Theoretical formulation and model development*

Notes taken from the face-to-face class and online sessions were summarised into memos whiles policy documents and minutes taken during Faculty meetings were thematically analysed. The outcomes from these analyses were at this stage evaluated against the analysis of the interviews at the conceptual development stage of the GT process. Through this process, the focus of the research begun to emerge and shaped the categories and the selective coding processes. Finally, the links between the categories and the relationships with the concepts were identified. This was done through a theorising process by comparing the categories and its subcategories for different patterns emerging from the data. Notably, the issues of barriers to BL adoption, students BL disposition and acceptance of BL as well as Faculty readiness to teach BL became apparent from the data. Consequently, the researcher was able to identify the core category and establish the main themes and patterns influencing Faculty BL adoption experience. The interaction and interrelationships between the categories were established through a theorising process and the aid of a paradigm model shown in Figure 1. The paradigm model was used as a form of conditional matrix to explore the action/interaction dimensions of the categories and to establish the indicative linkages of faculty adoption experiences shown in Figure 2 (Daengbuppha et al., 2006). By this, an understanding of how lecturers construct their BL experiences leading to adoption is explained. Figure 2 shows the core category and the categories that emerged from the analysis of the coded data sets.

4 Results

The study found among other things that, there was limited use of the LMS for teaching in BL mode during the First Semester 2019/2020. The data indicated that even though there was significant increase in the activity logs, a careful analysis does indicate that the peak periods as indicated on the

Table 1 Analysis of factors influencing faculty BL adoption

Interview Quotes	Codes	Concepts	Categories
Because we have access to Wi-Fi connectivity on campus, we are desirous to always learn using the platform	Potential student interest	Acceptance potential of students	Institutional hygiene
OK, I see it as one way of reducing the cost in terms of expenses incurred for learning on the students.	Reduced learning cost		
Greater number of students have personal computers, the few who do not have borrow to use	Students access to computers		
I can see there is a sustained interest from students when I teach them in BL mode.	User acceptance		
It is easier for students to connect and learn from every location, not necessarily campus alone.	Students perception of usefulness		
The feedback I get indicates students like the BL teaching	Students amenability to the BL		
It's interesting to note that our school provides training in Edu-tech with the objective to becoming the leading university in the country to promote BL	institutional support	Resource availability	
There is some attempt in that regard from the school to support us in the BL delivery	Management commitment		
Also, getting our peers to share their experiences serves as good motivation to some of us	Recommendation from peers	Faculty-technology affinity	Intrinsic faculty technology attributes
I can see there is a movement towards change in the way we teach here	Faculty agreeableness		

(*Continued*)

Table 1 Continued

Interview Quotes	Codes	Concepts	Categories
Teaching with technology has come to stay and as a faculty that reality is what drives me to want to know how to use it to teach.	Faculty persona		
Because of my background and having used MOODLE before, I did not hesitate to teach in BL mode when the directive came	Previous use know-how		
It made my work easier, as I can access each student's strength and weaknesses easier.	Task simplification	Task fit	Task-Pedagogy fit
The learning platform has become a repository for my notes that I can revert to anytime.	Task aid potential		
One must ensure that the approach is in sync with the course deliverables, for example you cannot use it to demonstrate an experiment.	Task compatibility		
Platform is efficient	Platform stability		
It is much easier in supporting an education program for all category of learners especially adult education	Perception of usefulness to users	Pedagogy fitness of BL	

Source: Field work, Author, (2020).

graphs occurred during the mid-semester period. This was largely so because Faculty resorted to using the LMS to deliver mid-semester examinations and assignments.

The following sections present the analysed findings in sync with the data collection methods as regards data sources, research units and process goals. The resultant Faculty BL adoption model is also presented in Figure 3 below.

Table 2 Analysis of faculty BL adoption barriers

Interview Quotes	Codes	Concepts	Categories
We threw the students into the mix without any orientation and mind you these were students who had never been taught this way	Platform complexities	User technology inadequacies	Student BL use inhibitors
I observe that the students are reluctant to use the platform. The only use it when they are forced to.	Reluctance	User intrinsic reticence	
If you do not strategize and put materials there, trust me the students will not even go there. They stay away.	Student apathy		
The feedback from students indicate they face challenges in using some of the notifications and tools on the platform.	Learning complexity	Learning complexity	
It places huge financial demands on students to provision for laptops and data bundles.	Economic burden	Economic cost to students	
The university did not inform the students they will be taught in BL mode.	Poor student orientation	Policy design weakness	
There is a sense that we lose control of our content the moment we upload these materials online.	Lack of sense of control	Intellectual property ownership	BL – pedagogy incompatibility
It is a bit burdensome to combine everything we do and then find time to develop online materials to upload and engage students.	Extra workload		
You know, the system comes with its own challenges, such that there are instances where materials are inaccessible to students.	System inaccessibility		
the way it is being implemented is without consultation at all.	Faculty exclusion	unacceptable change management process	Institutional unreadiness

(*Continued*)

Table 2 Continued

Interview Quotes	Codes	Concepts	Categories
We do not have clear reporting lines as to who to go to when we face challenges.	Poor operational strategy		
No, the implementation was rushed without due consideration to our needs.	Poor implementation strategy		
There is a disconnect with the trainings we have been having.	Poor strategic offering	Institutional unreadiness	Institutional unreadiness
It came as a surprise to some of us when the directive came that this is what we were supposed to do.	Negative institutional push		
Can you imagine that we have been asking for the policy and the incentives for some of this and we are told they are revising it?	No institutional roadmap		
Problems that arise are not resolved adequately.	Management poor problem-solving skills		
We have complained about the lack of inadequate logistics, such as computer laboratories and the internet to no avail.	Inadequate top management support		
The personnel, the logistics you name them are all inadequate to support the transition.	Personnel inadequacy		
The campus internet connectivity is nothing to write home about.	Poor connectivity access		
Imbalance between online and offline timetable	Poor timetable management		
I teach large class sizes and I think with a reduced size it will be much easier.	Over-populated class size		
For me I get a very bad experience using the internet and it frustrates me.	Bad user experience		

(*Continued*)

Table 2 Continued

Interview Quotes	Codes	Concepts	Categories
The platform for some reasons were too slow so students complained, and you could see their frustration	Poor platform user experience	BL technology incompatibility	BL technology incompatibility
Retrieving the contents, we upload on the system was difficult	Poor content archiving		
Sometimes I am concerned about the security of the platform relative to how insular it is from breach that can occasion changes in students grades and so on.	Data breach concerns		

Source: Field work, Author, (2020).

Table 3 Selective coding process applied in arriving at core category

Theorizing Constructs for Adoption	Categories	Theoretical Memos	Emergent Core Category	Framed Linkages with Core Category	Expected Outcome
Constructs in support of adoption	Institutional hygiene readiness	These constructs are conceived as all elements that positively predispose faculty towards forming a motivation	Motivation	Formed motivation inclined towards adopting BL	BL adoption
	Faculty-technology readiness				
	Pedagogy fitness of BL				
selected codes from student data	Student acceptance disposition to adopt BL				

Source: field work, Author, (2020).

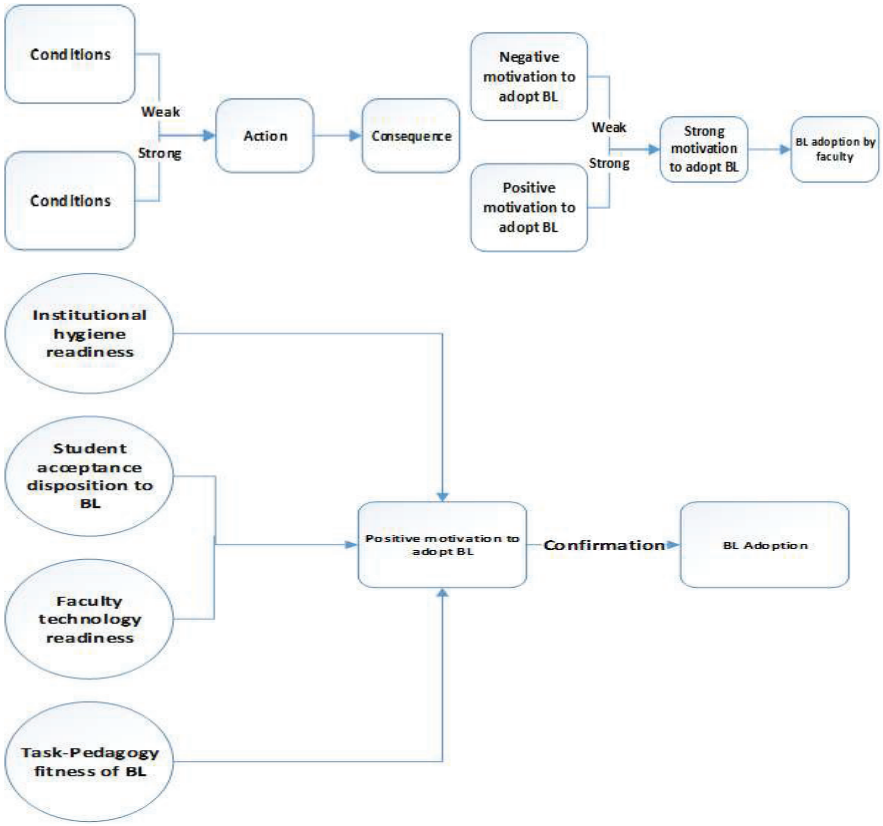

Figure 2 Paradigm model and faculty BL model.

Faculty Adoption Model: Author's construct, (2020).

4.1 Demographics of Academics and Course Subscription by Faculties

In the analysis of the Faculty demographics, we found that even though there were a total of 236 courses for the entire undergraduate programme, only 69 courses have been subscribed to by all the three faculties on the university e-learning platform. Even though it is an official policy to teach in BL mode, the study finds that face to face teaching is the preferred delivery mode for Faculty members.

Table 4 Faculty demographics

Faculty	Number of Lecturers	Number of Courses	Number of Subscribed Courses on LMS
Faculty of Information Technology Business	118	167	40
Faculty of Engineering	47	85	6
Faculty of Computing and Information Systems	72	94	23
TOTAL	237	236	69

Field work, Author's construct, (2020).

4.1.1 Graphical representation of 2019–2020 first semester online subscription (Undergraduates, Sept – Dec 2019)

The graph illustrates the number of courses subscribed onto the LMS and delivered in BL mode with the 2019–2020 fall semester. Overall, out of a total of 236 undergraduate courses, only 69 courses were run in BL mode on the LMS. Only, 34 Faculty Members out of the 153 trained Faculty used the system to teach in BL mode. Faculty wise, the F.o.IT Business lecturers signed up the highest with 40, followed Fo.C.IS with 23 courses and F. o. E with 6 courses.

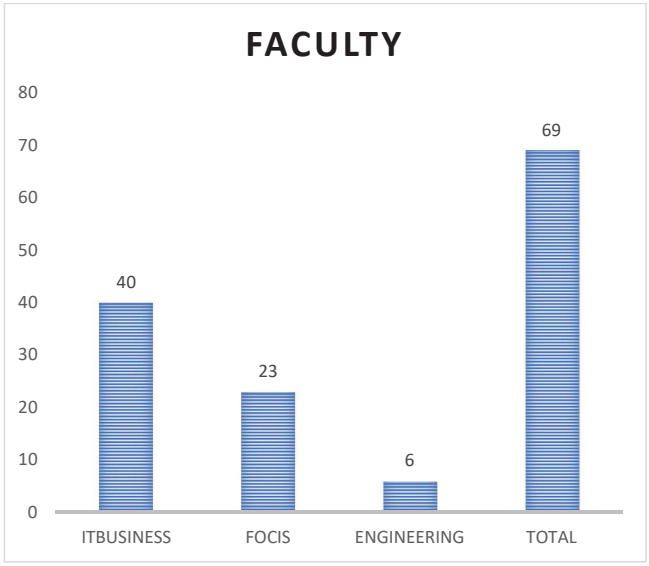

Figure 3 2019–2020 First Semester Online Subscription (Undergraduates, – Sept – Dec 2019).

4.2 Other Findings

The analysis of data from the policy documents indicated that, whiles there was a stated vision and objective to transition from the current state and become a fully-fledged BL university, there were no well-articulated strategies set out to achieve this. This was corroborated with Faculty responses who clearly indicated that the policy was developed without prior adequate consultation to seek Faculty buy-in. A corollary to this was the poor implementation process that manifested in the general apathy displayed by Faculty towards teaching in BL mode.

The feedback from students who were observed during class interactions points to the fact that students have positive attitude and perceptions towards BL. Some of the students expressed the views that being taught in BL mode made them prepare well for classes given that the reading materials were posted earlier. Additionally, they were able to engage and interact more with their peers online. Flexibility and convenience were mentioned as major reasons for preferring to be taught in BL mode. However, technological and platform issues were mainly raised by students as some of the challenges they faced. For example, some of the students raised issues with the Turnitin and the Moodle platforms. Others also complained about not getting adequate feedback from their lecturers when they posted comments on discussion boards. Additionally, students complained that they were not given adequate orientation before they were introduced to the BL delivery process.

Departmental meetings were held to discuss and evaluate individual activities, progress, and projections. Each lecturer discussed issues relating to teaching in BL mode including challenges and recommendations for achieving performance goals and outcomes. Questions, suggestions, and critical reflections were also encouraged for the success of COLT. It was also found that challenges encountered by Faculty included the following: intermittent power cuts affecting teaching and online activities; Internet disruptions affecting the flow of work and discouraging users' access to the platform; lack of equipment (laptops) affecting the smooth running of departments and faculties and low number of lecturers actively signed onto the platform.

4.3 Online Support Activity Logs (Sept./Dec 2019)

Table 5 illustrates the number of online support services provided from September to December 2019. It was found out that the COLT *support centre integrated online chat* supports services on all COLT websites to provide online support to both faculty and students who needed the most help at any

Table 5 2019–2020 online support activity logs

Site	Accepted Chats	Missed Chats	Accepted Chats Without Agent's Answer	Offline Messages
colt.gtuc.edu.gh	5	0	0	0
gtuconline.gtuc.edu.gh	82	1860	59	223
gtuc-cu.net	56	320	19	46
gtuconline.gtuc.edu.gh/Anhalt	1	0	0	1
gtuconline.gtuc.edu.gh/eLearning	8	4	3	33

given time. However, due to understaffing, the support staff were unable to provide support for users resulting in huge number of unanswered chats as shown in Table 5.

4.4 2019–2020 First Semester Activity Logs (Undergraduates, Sept./Dec 2019)

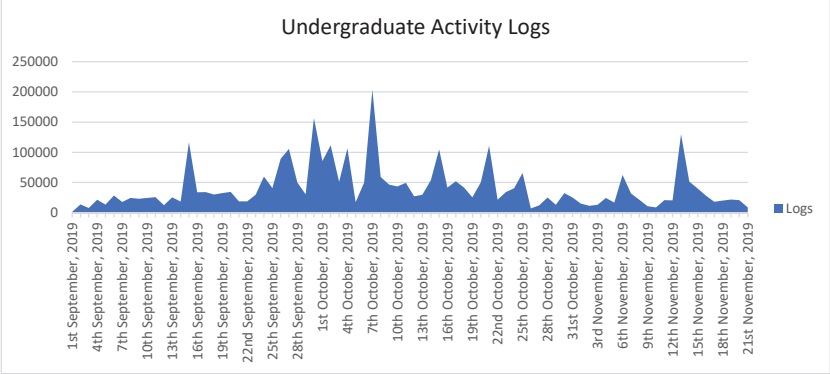

Figure 4 First semester activity logs (Undergraduates, – Sept./Dec 2019).

The above graph illustrates daily activity logs on the E-Learning platform. It captured the active logs within each day as 24-hour period. The graph reported from the beginning to end of the semester. There were 203,500 logins on 7th October 2019. It was within the same period that lecturers were conducting their mid-semester exams. These logs were on the increase not because of the number of students making use of the BL, but the number of attempts a student tried a quiz per course. This also includes normal users who had no mid-semester exams but were using it for accessing lecturers' materials, commenting within a forum and other activities requested to be

taken by students whose lecturers had subscribed to use the E-learning platform.

4.5 The Grounded Theory Faculty BL Adoption Model

The analysis modelled the lived experiences of Faculty respondents into an adoption model having theorized respondents' core concern from the data as an issue of motivation. The model proposes that external and internal environmental factors stimulate Faculty motivation to make a choice regarding the teaching modalities they prefer. It posits that as Faculty members begin to implement teaching process using technology, they become sensitized and begin to internalize the differences between the two teaching modalities/models and thus decide to adopt BL based on the level of implicit and explicit motivation factors that exist within the university and the Faculty themselves. However, they become demotivated or adjust when the converse pertains.

4.6 Description of the Faculty BL Adoption Model Constructs

Motivation – This describes the internalized concern of Faculty members within the BL environment. It reflects the trusting state at which the interplay of implicit and explicit forces stimulates positive motivation in Faculty to teach in BL mode.

Institutional hygiene readiness – This construct describes the institutional considerations that Faculty would consider requisite enough to influence them to adopt BL as a teaching approach. It was found that there are two major concerns for Faculty when accessing institutional readiness to adopt BL: acceptance potential of students and resource availability as indicated in Table 2. The categories of these constructs explain how lecturers reflect, access, and interact with the BL in terms of the institution and how they arrive at their decisions about BL.

Intrinsic faculty attributes – This construct describes a set of implicit factors that are primarily related to the personal attributes of the faculty members needed as pre-requisite for BL delivery. These include the technological competences of faculty members which were found to be necessary for instructional design and delivery of BL contents.

Students' BL acceptance disposition for BL – It describes the reflective position of faculty members towards the assessment of their students relative to how they perceive and anticipate their attitudes, dispositions, and acceptance of being taught in BL mode.

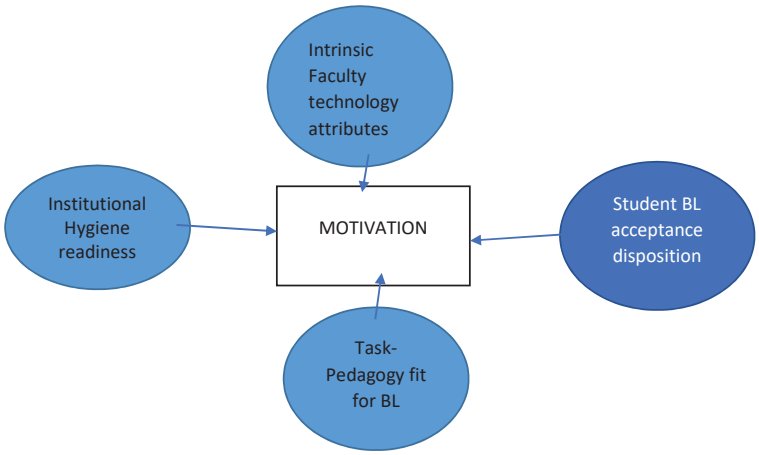

Figure 5 Proposed faculty BL adoption model, author, (2020).

Task-pedagogy fitness for BL – This construct describes the set of factors needed to create harmony that ensures a balance between instructional design suitable to the pedagogical approach that is adopted for BL delivery.

BL adoption – This describes the state at which faculty members make the decision to use BL for teaching and learning. In other words, it is the outcome obtained when all the implicit and explicit factors that influence motivation are satisfied leading to the adoption of BL.

5 Discussions

This study discusses the findings in relation to the context of the case study and grounds these findings in literature as required for GT studies.

Implementing BL in universities is a complex process that requires a well-coordinated implementation approach. The tendency to leap before looking has led to many universities incurring huge cost in the process and yet fail to achieve the intended implementation outcomes. The current study is an example of an implementation process that has failed to live up to its potential. The findings of the study found a mix of barriers and factors influencing BL adoption in the case study university. Barriers to faculty adoption identified in the study include lack of adequate internet infrastructure, poor policy implementation, academic workload, lack of management support, inadequate technical support, faculty disinterest and apathy, inadequate faculty capacities and competencies to teach in BL mode. These findings are

consistent with (Ocak, 2011; Baltaci-Goktalay and Akif Ocak, 2006) that investigated BL barriers and their impact on faculty adoption. Similar studies by Gregory and Lodge (2015) have also found that academic workload on faculty members teaching BL is a barrier to the adoption of BL in universities. This notwithstanding, the positive feedback from the students towards their BL experiences supports the findings of Gawande (2015); and Owston and others (2019) that suggest that BL has the potential to increase students' learning experiences, provide flexibility and convenience.

Studies have also shown that factors relating to resources, policy and rewards among others are categorized as explicit or external factors the absence of which impact negatively on faculty adoption of BL (Battaglino et al., 2012; Allen et al., 2017; Medina, 2018; Porter et al., 2014). The construct of the Faculty Blended Learning Adoption Model (FBLAM) and its related core concern, motivation, found in the present study is grounded in theory and literature (Chen et al., 2012; Surry and Land, 2000; Reeve, 2015; Gautreau, 2011; Ibrahim and Nat, 2019). Examining the FBLAM with theoretical lenses, the model is grounded in organisational theory (Armonk et al., 2005) and motivational-hygiene theory (Wilson and Morreira, 2006; Sahib, 2013; Youn et al., 1999). In Herzberg's Motivation-Hygiene Theory, he characterizes certain organizational factors within the workplace as hygiene and motivational factors. According to his theory, motivational factors within the workplace are essentially those factors that ought to be present and managed properly for workers to do their job. There are other factors such as policies, job support and working conditions; the absence of which create dissatisfaction. By application, the FBLAM can be viewed as a set of motivation and hygiene factors that are required by faculty in order to motivate them to adopt BL. Similar studies have applied the Herzberg theory in the field of Information System and BL and found support for this theory (Gautreau, 2011; Wilson and Morreira, 2006; Surry and Land, 2000; Reeve, 2015; Ibrahim and Nat, 2019). Other studies by Siddique et al. (2011), have suggested that positive academic leadership in organisations and the combination of extrinsic and intrinsic techniques can motivate faculty members towards adopting technology.

6 Conclusions

This study adopted a Grounded Theory method to develop a faculty BL adoption model. As has been discussed, the evidence is indicative that the university BL initiative started in 2012/2013 but was not fully used by faculty

members. It found out that just a handful of faculty members were teaching in BL mode; notwithstanding the observations that were made from the positive feedback reported from students who were taught some courses in BL mode in the first semester of 2019/2020. Understandably, the existing barriers that were identified in the study constituted significant demotivators against faculty adoption of BL delivery.

There is the need for the university to declare a clear-cut policy on the adoption and practice of online teaching and learning. This should be backed by sincere commitment from top Management with the provision of adequate resources needed to facilitate the change management processes. To encourage faculty members, make good use of the LMS platform, a more direct approach should be adopted with the aim of engaging in broader stakeholder consultations to get faculty buy into the process.

The findings of the study have practical as well as theoretical implications. From the practical perspective, the findings provide a set of constructs that can enhance faculty motivation enabling them to adopt BL for teaching and learning delivery. Theoretically, the findings of this study show that the motivation of Faculty is core/key to Blended Learning adoption.

Whereas other studies theorizing on the lived experiences of faculty BL adoption have found time (Moser, 2007), trust (Martins and Baptista Nunes, 2016) and integrated E-learning culture (Newton and Ellis, 2006) as the main concern, this study positions its findings within the theoretical frameworks of motivation-hygiene (Lee and Shih, 2001; Wilson and Morreira, 2006; Gawel, 1997) and organisational theories (Armonk et al., 2005).

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Biography

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