

# Barriers in adopting blended learning in a private university of Pakistan and East Africa: faculty members' perspective

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**Background:** Education methods have undergone transformation over the centuries. Use of technology is the cornerstone for innovation in teaching methods. Hence, blended learning which includes face to face and online modalities is being increasingly explored as effective method for learning. This pilot study determines the perceptions of faculty members in a private international university on barriers influencing adoption of technology for teaching and learning.

**Methods:** A cross-sectional survey was conducted through a self-reported questionnaire using 'survey monkey'. The data was entered and analyzed using Statistical Package for the Social Sciences (SPSS version 20). Frequencies and proportions are reported.

**Results:** Findings indicated that 51.6% faculty members perceived the importance of integration of technology in their teaching. Around 54% of the participants recognized that they do possess the ability and accessibility to integrate information communication technology (ICT) in teaching and learning, but there is a need to hone the basic information technology (IT) skills to initiate technology driven teaching. Findings revealed that 55% faculty members acknowledged the constraint of not getting protective time to develop and deliver technology driven courses. Further, results showed that 45% faculty members perceived that their innovation efforts in terms of teaching as blended learning do not count towards their professional promotion or recognition, as usually priority is given to research over teaching innovation. The findings also indicated that 54.5% participants asserted that university lack mentorship in the field of blended learning.

**Conclusions:** Therefore, study suggests that universities should provide adequate mentorship programmes for the faculty members in enhancing their skills of integrating technology in their teaching.

**Keywords:** Blended learning; higher education; teaching through technology

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## Introduction

Education methods have undergone transformation over the centuries. Use of technology is the cornerstone for innovation in teaching methods to make it more flexible, affordable and relevant for the students from diverse geographical locations and backgrounds. Teaching through technology promises to enable students to not only acquire subject specific knowledge but also become lifelong learners

in a digitally connected world. However, despite much effort in implementing technology driven pedagogies in higher education, there seem to be more challenges than success (1-3). Integration of technology in teaching is not a quick fix strategy rather it needs to be implemented gradually keeping in view of the local context. Literature on educational change highlights the significant role of stakeholders in the process of change (4,5). A large body

of research studies has identified barriers to technology adoption. These barriers range from technology related issues including information technology (IT) competence of faculty members, organization climate, resistance to change, lack of institutional support, lack of financial support and lack of time, etc. (6-8). These barriers are categorized as first order and second order (7). First order barrier is related to external factors such as time, resources, organizational culture. Second order is related to teachers' pedagogical belief. There is third order barrier as well which is related to teachers' ability to set learning experiences considering learners' context and need (3).

A large amount of literature is present on whether educators perceive eLearning or blended approach is as effective as traditional education. Research indicates faculty perception and attitude as key challenges in universities' adoption of blended learning (9-12). The new technology requires faculty to re-conceptualize their notion of teaching and learning to adopt new pedagogy but most of the faculty still value traditional way of transmitting knowledge (9). There has been concern among faculty members that online instruction will reduce their academic freedom. They are dubious about the quality of easily available digit material; potential of information communication technology (ICT) enriched instructions to engage of students in academic pursuits; and integrity of e-assessment approaches (13). Lack of faculty members' motivation to adopt online/Blended learning could be because of their perception that the new role would demand them to spend more time in learning technologies rather than on carrying out scholarly work (14).

Adoption of blended learning depends largely how teachers move from their traditional roles to the role of online facilitator. The additional skills and the forging of a new professional identity might not come easily to all practitioners. It requires a pedagogical understanding of the affordances of the new medium and an acceptance by the teacher of his or her new role and identity (15). Faculty needs a collaborative learning environment and platform where they can openly share their technological short coming and get support from IT staff (16).

This paper explored perceptions of faculty members in a multi sited, international university, which aims at reaching out to students at different campuses through blended learning. This would allow maximize utilization of available resources. For that, it is viable for a university to get an insight into the perceptions of their teaching faculty about the barriers in adoption of technology in teaching and

learning before investing in this area. Therefore, the aim of the reported research is to identify faculty's perception of the key barriers encountered by them for the adoption of technology for teaching and learning in different units of the university.

## Methods

The pilot study adopted a cross-sectional survey design (17) where data was collected at one point of time across major campuses of the university located in East Africa and Pakistan.

The study was conducted in four entities across Pakistan and East Africa. This included: (I) Institute for Education Development, Pakistan (IED, P); (II) Institute for Education Development, East Africa (IED, EA); (III) School of Nursing and Midwifery, Pakistan (SONAM, P); and (IV) School of Nursing and Midwifery, East Africa (SONAM, EA). The target sample for this study was the faculty members (both full-time and part-time) from these institutions.

The study adapted a self-reported questionnaire (18). The questionnaire had earlier administered and validated in a research study at four departments of College of Applied Sciences (CAS) in Oman. In the process of adaption of the tool for this study, few items were also taken from two other similar studies (19,20). The tool was further modified after a focus group discussion. The modified version of the questionnaire for this study comprised of 29 items, measured on a five point likert-scale (1 = Strongly Disagree; 5 = Strongly Agree) which were afterward merged into 3 scale (disagree 1 to agree 3). Moreover, a demographic section seeking a personal profile (e.g., gender, location) of each respondent was added. The questionnaire was developed on survey monkey.com, and faculty members were sent a survey link via email. Participants were requested to complete the survey within the one month of receipt of email. They were reminded in 15 days and week before the deadline.

The data was entered and analyzed using Statistical Package for the Social Sciences (SPSS version 20). Frequencies and proportions are reported. All participants provided an online consent before filling the questionnaire and ethics approval was obtained from the Aga Khan University Ethical Review Committee.

## Results

We sent questionnaires on survey monkey to 142

**Table 1** Target population vs. sample size

Institution	Target population			Sample size
	Part-time faculty	Full-time faculty	Total	
IED, P	2	35	37	9
IED, EA	–	16	16	4
SOMAN, P	4	51	55	12
SONAM, EA	18	26	34	8
Total	24	128	142	33

**Table 2** Distribution of sample

Indicators	Classification	Number (n=33)	Percentage (%)
Gender	Male	13	39.4
	Female	20	60.6
Faculty ranking	Assistant professor and above	09	27.2
	Instructors	24	72.7
Years of experience as university faculty	<5 years	12	36.5
	5–10 years	13	29.3
	>10 years	08	24.2
Experience using ICT in teaching	Yes	29	87.8
	No	04	12.2

**Table 3** Perceptions on lack of knowledge, skills and interest in using ICT in teaching (n=33)

Domain	Disagree (%)	Neutral (%)	Agree (%)
Knowledge	51.6	15.2	31.3
Skills	54.5	12.1	33.4
Interest	54.6	15.2	30.3

participants and after several reminders 33 participants responded and completed the questionnaire. *Table 1* gives a summary of the target population.

*Table 2* shows further distribution of samples in terms of gender, university rank, number of years of experience as university faculty, and experience of using ICT in teaching.

Findings of the reported study are organized under four constructs: faculty's perception about (I) their knowledge,

skills and interest; (II) time and resources available to faculty members; (III) institutional support provided to faculty; and (IV) challenges they encounter while integrating technology into their teaching.

### ***Perception of faculty members about their knowledge, skills and interest***

More than 50% of the participants disagree that there is lack of knowledge, skills and interest among faculty members of using ICT in teaching. However, around 30% of the participants were of the view that faculty neither had the knowledge nor the skills and interest in the use of ICT.

Although, as depicted in the *Table 3*, most of the respondents were confident that faculty possessed basic knowledge, skills and interest required for using ICT in their teaching, the numbers of faculty members who disagree were also high. Comparatively, lack of skills was identified by 33.4% respondents than the lack of Knowledge and interest.

*Table 4* shows that faculty of education perception about their knowledge, skills and attitude in using ICT is much more positive than faculty of nursing.

### ***Perception of faculty members about available time & resources***

This construct seeks participants' views about the context within which ICT integration takes place. *Table 5* indicates that participants of the view that there was enough access to hardware for ICT integration as compared to the soft wares and internet connectivity. Also time was a major issue in the integration of ICT. Percentage of total responses of faculty members regarding their perceptions on lack of availability of resources and time is given below.

The lack of necessary software could be a contributory factor to the lack of interest which could have been caused by frustration of not having the necessary resources to be able to integrate ICT. Internet connectivity has been identified as a major facility needed for ICT integration to be effectively implemented. A major reason for the unavailability of reliable internet could be that the institutions are located in the developing world where even the best internet connectivity is just not good enough. Further analysis shows that faculty IED, P (37.8%) and SONAM, P (45%) are satisfied with availability of resources as compared to IED, A (20%) and SONAM, P (18.3%). Generally 66% Education faculty and 40% Nursing faculty

**Table 4** Perceptions on lack of knowledge, skills and interest in using ICT in teaching across the disciplines

Disciplines	Disagree	Neutral	Agree	Total
Faculty does not have basic knowledge for using ICT in teaching and learning				
Institutes for Educational Development	15 (60.0)	4 (16.0)	6 (24.0)	25
Schools of Nursing and Midwifery	3 (37.5)	1 (12.5)	4 (50.0)	8
Faculty does not have basic skills for using ICT in teaching and learning				
Institutes for Educational Development	15 (60.0)	2 (8.0)	8 (32.0)	25
Schools of Nursing and Midwifery	3 (37.5)	2 (25.0)	3 (37.5)	8
Faculty does not have interest in using technology in teaching and learning				
Institutes for Educational Development	16 (64.0)	6(24.0)	3 (12.0)	25
Schools of Nursing and Midwifery	3 (37.5)	2 (25.0)	3 (37.5)	8

**Table 5** Perceptions on lack of availability of resources and time (n=33)

Resource Type	Disagree (%)	Neutral (%)	Agree (%)
Hardware	63.7	9.1	27.3
Software	33.3	24.2	42.5
Internet	42.4	18.2	39.4
Time	30.3	15.2	54.7

**Table 6** Perceptions on lack of institutional support to integrate ICT in teaching (n=33)

Support	Disagree (%)	Neutral (%)	Agree (%)
Administrative	33.4	21.2	45.4
Pedagogical	33.3	24.2	42.4
Mentoring	18.2	27.3	54.5
Technical	39.4	18.2	42.5
Financial	24.2	36.4	39.4

**Table 7** Perceptions on lack of incentives (n=33)

Type of incentive	Disagree (%)	Neutral (%)	Agree (%)
Lack of appreciation for teaching innovation	27.3	24.2	48.5
Innovation does not lead to promotion	45.5	21.2	33.4

say that they have less time to learn and incorporate ICT in their teaching.

#### *Perception of faculty members about institutional support*

Institutional support in this study was conceptualized from multiple dimensions which include: administrative, pedagogical, mentoring, technical, financial support.

Table 6 shows that from 40% to 55% participants thought that there is lack of institutional support, in different aspects, for faculty members to integrate technology in teaching. However, the results showed that faculty's perceptions regarding lack of mentoring support is higher than the lack of technical and financial support.

The faculty members' perception regarding institutional support was also gauged through the item if there is lack of appreciation and incentive for faculty members in using Blended or eLearning approaches in teaching.

Table 7 shows that around 48% respondents thought that there is lack of appreciation for technology based teaching and 33% respondents had the view that innovation in teaching does not lead to promotion.

#### *Perception of faculty members about challenges they face in integration of technology*

There were several items regarding challenges faculty members encountered in technology driven teaching. With reference to challenges vis-à-vis faculty members' own

**Table 8** Perceptions on challenges they face in integration of technology in teaching (n=33)

Challenges	Disagree (%)	Neutral (%)	Agree (%)
Classroom management is difficult	18.2	72.7	9.1
More time is required for online interaction with students	42.4	30.3	27.2
Lack of culture of knowledge sharing, collaboration and open dialogue	42.4	24.2	33.4
Lack of clarity on vision and strategy for the adoption of technology within the entity	39.3	27.3	33.4
Technology does not fit well for the courses taught by the entity	69.7	18.2	12.1
Policies are not conducive for adoption of technology	39.4	24.2	36.4
Expect that faculty will be available 24/7 in technology-enhanced courses	24.2	24.2	51.5
Students' sociolinguistic background does not allow adoption of technology in teaching	60.6	12.1	48.5

capability, they were quite indecisive as 72.7% respondents were neutral on this point (*Table 8*) that they faced difficulty in managing classes. For the other aspects of challenges faculty members views were also distributed in different categories almost equally. However, the faculty members who disagree with statement that 'technology does not fit well in our courses' or students socio-linguistic background does not allow adoption of technology were outnumbered.

Regarding challenges faced by university culture in incorporating ICT in teaching, 42% respondents disagreed that there is a lack of culture of knowledge sharing, collaboration and open dialogue. And around 39.3% faculty members disagree that there is lack of clarity on vision and strategy for the adoption of technology within the entity but 51.5% faculty members agree that students expect that faculty member will be available 24/7 in technology enhanced courses.

## Discussion

The result in this study indicates that faculty members show the interest of integration of technology in their teaching. They recognize that they do possess knowledge; skills and accessibility of required hardware and internet facility to integrate ICT in teaching and learning. However, basic IT skills would certainly provide the base to initiate amalgamation of technology in teaching within the university. Nevertheless, it also requires certain specialized technical trainings for such initiatives. This compels the need of providing proper training of faculty members in technical aspects of the course management software and in course design delivery (21,22). The training must include hands-on learning to use technological devices and tools to

teach. Therefore, it is asserted that faculty members should be encouraged to get actively involved in developing and implementing ICT rich courses instead of having imposed upon them so the ownership could be attained (22).

Designing ICT rich courses certainly requires extended time. However in our study, mostly faculty members acknowledge constrain of not getting protective time to develop and deliver technology driven teaching experiences for the students. Delivering ICT based courses (blended learning) through course management technology increases the workload for faculty members (23). Therefore, cost in terms of more effort and time is increased (24,25). However, blended learning can offer other highly valued benefits to the faculty members such as flexibility in teaching from an off campus location. Most faculty members believe that blended teaching requires more responsibilities and that, in most cases, the faculty members have to manage various roles (24). Designing blended learning courses requires time more than three times than developing a similar course in a traditional format (26). The University of Central Florida, which is known for its online teaching programmes, faced the similar issue of time and affirmed that other than development of online course, administrative responsibilities during implementation of the course, consumed lot of time of faculty members (27).

Teaching blended learning courses requires faculty to deal with logistics and administrative issues, which hampers their intellectual engagement with the content of the course. Therefore, it will be viable a viable option to engage graduate students or teaching assistants in teaching with the senior faculty members. So the senior faculty members could get assistance from novice or junior teachers and also provide them mentorship (28).



In this study the findings also depicts that students do expect faculty members to be available 24/7. It is clearly said that faculty members facilitating a blended learning course are devoting more time getting accustomed with available technology, developing teaching strategies, and appraising the course critically as whole. Due to its demanding nature, academic organizations tend to provide adequate support and resources when blended learning courses are being offered for the first time. Therefore, it is proposed that educators need to engage in intellectual dialogue to address their issues related to online teaching modalities (29).

The results reveal that the faculty perceives their innovation in terms of teaching as blended learning does not count towards their promotion. A number of literatures uncover these factors. It is indicated that the issues lie at macro-level (30-35). The underlying innovation barriers is rather related to culture of the university which usually give priority to research over teaching innovation for promotion or recognition. Having said that, faculty members involved in blended learning develop an insight that their universities do not recompense them for teaching innovations, which eventually jeopardizes their academic career (35).

Mentorship plays a pivotal role in any academic milieu. It was revealed from the finding of this study that university lack mentorship in the field of blended learning. Globally blended learning have made its own roots and established infrastructure such as they probably do not face such premature challenges. Therefore, universities as quality assurance organization needs to be proactive in faculty development and should institute relevant programmes to develop mentoring capacity in the area of blended learning (36). The study findings may not be generalizable due to its low response rate; however, this would provide basis to scale up the study at mega level.

## Conclusions

This first exploratory pilot study persuaded us to move a step further in adoption of technology in teaching and learning in the target university. Then overall insight of perceived barriers must guide us to expand resources within the university across the countries in order to establish infrastructure with effective methods to measure quality and time for blended learning. Our study had explored faculty members' perceptions about the technology adoption. It is recommended to study blended learning adoption from the perspectives of students from the diversified background.

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## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* All participants provided an online consent before filling the questionnaire and ethics approval was obtained from the Aga Khan University Ethical Review Committee (No. 2202, IED-ERC, 12).

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