

Stakeholder engagement a way toward improvement in stakeholder performance with mediating effect of learning technology adoption

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Abstract

The business and occupations are halted due to social distancing that is deemed essential to curb the spread of this virus. This job killing pandemic has been a reason for discontinuation of businesses altogether. As a result governments were forced not only to tackle pandemic but also the struggling businesses and economies. Organizations also had to respond quickly to the new norms in order to ensure their survival. Education sector was one of the sector that was affected drastically. Students are interacting and showing interest toward learning technology adoption and stakeholder participation (students, faculty) enabling them to communicate with each other during this pandemic. It helps them to participate in view of their intellectual proficiencies, personal qualities and other resources that contribute to enhance performance of higher educational institutes. This study demonstrates a conceptual framework work using technology acceptance model in education sector. The conceptual framework studies stakeholders' engagement, its impact on stakeholder performance and the suggestions to enhance the mutual values of students and institute in post pandemic world. This research adopts qualitative technique design along convenient sampling method. This study will add significantly to the knowledge and concepts that could aid managers and leaders in raising employee performance standards and addressing any potential weaknesses that may exist with online technologies.

Keywords: *Pandemic, Stakeholders' engagement, Technology acceptance model, Stakeholders' performance, Education sector*

Introduction

The 2019 pandemic has disrupted both the cycle of human social interaction and life pattern. Due to social isolation, which is thought necessary to stop the spread of this illness, businesses and occupations have been put on hold. The COVID-19 lockdown and social isolation are the most detrimentally affecting factors for organisational setup. The rise of fatal diseases has altered every organisational worker's working life, from the country's controlling government to political work, corporate leaders and managers to health care organisations, and finally the global educational system. There is a significant shift in the educational cycle when the business cycle and social engagement are completely prohibited and all vocational routines are moved to home-based routines. This choice to implement a change in the operational and functional responsibilities was made for a brief period of time, but due to the disease's protracted stay, the global operating pattern is still in place. The performance level has also been impacted by the home-based online working method. The adoption of the online working method and awareness of it are to blame for the high performance level. A stakeholder's performance is evaluated based on how actively they contribute to their task. However, the obstacles to a working system's widespread adoption have made stakeholder work a more dubious indicator of the performance level of a stakeholder.

In pandemic situation the online working system has impacted the stakeholder performance in many ways (Singh et al., 2020; Tubadji, Boy, & Webber, 2020). The business community including the managers and the leaders are considering it more disturbed functioning of the business cycle and also a big and a unique life changing event. This change has impacted the performance level and patterns of delivering performance. The online working decision was a good strategy in the need of hour (Griffin & Denholm, 2020). The COVID-19 introduced some new strict rules of social distancing and complete lockdown which is an ultimate shutdown to organizational working environments (Leidner, 2020; Richter, 2020). This pandemic situation has certainly poses the biggest challenge for testing management decision in terms of evaluating outcomes of performance. The integration of technology into the online working system has helped in passing on and continuation of the business world (Webber, 2020). But still there is lack of training, awareness, acceptance and adoption to the online working portals. And that's how the graph of performance is not getting stable at any lower or higher point. Keeping in mind the organizational community of educational sector also, the aim of performing actively,

effectively and efficiently is also very critical and is a big challenge in achieving high standards of performance (Carroll & Conboy, 2020).

As education has migrated to online learning portals, teachers are providing students with learning materials via recorded audio or a face-to-face interaction via internet videos. The home-based online teaching method has perpetuated the educational cycle (Lazar, 2020). Technology has made life simpler for people who operate in the field of education through online portals like Google Meet, Zoom, and a few more ones that are comparable. However, employing this online technology to continue the teaching and learning system is not a wise strategic move. Numerous studies have revealed that not all students and teachers find it easy to adjust to online platforms (Shen, 2020). Before they could interact and perform through the online portals, the students and teachers had to go through a learning process to use these online aid tools. However, people still have trouble understanding and using internet technologies (Porter, 2014). Before, there was no active use of the online system or the practise of using these internet portals for routine work. People's struggles in adjusting to this online working style are crucial because their lives are becoming more difficult (Tulinayo, 2018).

Adoption of educational technology is a key aspect that affects performance. People consider using technology to be the hardest thing they have ever had to do. The community's biggest challenge during the epidemic, aside from coping with the disease's impacts, was adopting a frequent use of technological culture (Lazar, 2020). Everyone, however, was reliant on the usage of technology in one way or another because they had no other choice. The way that technology is utilised nowadays has a huge impact on how well the educational sector performs (Shen, 2020). According to a study, organisations that have fully trained and understood how to use technology have achieved the best results and are still on the path to retaining high performance outcomes. This contrasts with organisations that are only early adopters of technology (Antwi, 2020). In order to improve the performance of its stakeholders, organisations, particularly those in the education sector, work to further integrate the best functionality of their technologically integrated programmes and activities through the integration of technology platforms.

The purpose of this study is to evaluate and seek the strategy that will work out in the pandemic situations in Pakistan to overcome this challenge of performance level. The selection of variables stake holders (faculty and students), learning adoption to technology and stakeholder

performance is based to determine the future designing of strategies that will work out as a backup for the post pandemic situation.

Study Rationale

The adoption of technology is still in its early stages in Pakistan. The level of technology necessary to do a task is still in its infancy and has not yet been properly adopted. The education industry is still having trouble integrating itself into a technology-based integrated structure in terms of stakeholder performance. All parties involved—faculty, staff, and students—need to be educated and trained to the point where they are mature enough to handle the complexity of technology (online system). The proper application and integration of technology into this online networking arrangement could be successful in managing the stakeholders' performance levels. Based on their integrated work style, stakeholders in the educational sectors must perform better, and this can be done by implementing online learning technology. This study, which takes into account the educational landscape in Pakistan, focuses on elements that could improve academic performance in institutions of higher learning as well as further develop tactics that could be actively used in pandemic emergencies.

Significance of the study

The insights and ideas gathered from this study will considerably increase managers' and leaders' capacity to boost employee performance with the aid of an integrated technological network. The pandemic issue necessitates quick, intelligent decisions to be made at the proper time and location. The COVID-19 outbreak necessitates prompt decisions. Making the right decisions needs to be done fast because waiting would cost lives and inflict financial loss. This study will act as a road map for managers and leaders in the field of education as they develop plans and training manuals to assist them in handling pandemic circumstances. As a result, this study will provide learners with additional strategy-building opportunities.

Literature review

Model for Technology Acceptance

A modern trend in the educational system for learning and training is being encouraged by the adoption of novel learning and teaching methods for teachers and students. But even with the new structure, the education system is still inadequate. The teachers' and students' steadfast opposition and restrictive behaviour towards the acceptance of new technology serve as proof

that there are differences between the technology setup of education that is being utilised and the one that is anticipated to be employed. These acceptable and inappropriate behaviours are clearly defined under the Technology Acceptance Model (TAM). This is the information technology implementation theory model that has generated the most research across all disciplines.

As Davis (1989) sought to understand the causes of users' acceptance and rejection of the technology, his research led to the logical justification for TAM's existence. According to Davis' research and knowledge, human beliefs and perspectives help shape the attitudes and behaviours that either support or oppose technology.

The foundation of TAM theory is the human intention, which describes, forecasts, and explains user attitudes towards accepting information technology. This hypothesis is the most widely accepted since it offers logical explanations for why people use technology, or don't utilise it, as well as why people adopt new computer technologies. The TAM is the most popular theory for analysing why people psychologically accept new technologies.

In order to monitor how technology users, in particular students and teachers, respond to it, TAM has been implemented in the educational sector. This theory helps assess how well teachers and students are engaging with and performing in technology-based learning, as well as how well they are accepting of e-learning and computer-based teaching approaches. This online learning program's approval had been coerced, and implementation of that acceptance had been mandated. With or without prior experience, the education stakeholders were under pressure to quickly adapt to the online education programme as a result of the abrupt change to the educational system (Fearnley, 2020).

Stakeholders Engagement

The pandemic situation has a huge impact on the changing scenarios and professional engaging activity events occurring in the educational field history. The stakeholders at educational institutes are going through a challenging phase where they have to maintain a long distant formal interaction to continue their daily official performance (Kumar, 2020). The stakeholders that are dominantly engaged in educational organizational performance are students and teachers (Ratten, 2020). The lockdown and closures of educational institutes has disturbed the learning system as the educational platform has been shifted from live to online classes where teachers are instructed to teach through online learning platforms (Abidah et al. 2020). The home based

working style has affected the engagement level of teaching faculty and student's interest in education (Ratten, 2020). The online system has also brought a change into the educational engagement system where the system demands virtual links developed between faculty and students. Raju (2020) argued in his study that online system is not getting more recognition due to lack of acceptance but for continued education facility, innovation in teaching patterns is necessary to overcome the stress and anxiety on both sides. The closure of educational facilities during this time of lockdown hindered the teaching-learning process and the education system. It is crucial to comprehend the teaching-learning process in this crisis moment in order to create efficient interventions for the efficient operation of teaching and learning (India Today, 2020). In light of this context, the current study seeks to define the learning state, manner of learning, and issues connected to study during this COVID-19 pandemic lockdown.

Engagement and Performance of Stakeholders

The engagement behaviours displayed by the stakeholders have an impact on the organisational success in educational institutions (Ratten, 2020). Faculty and administration's active participation in sustaining this distance learning technique is a distinctive aspect of their engaging behaviours, which is ultimately a gauge of how well they execute in carrying out their organisational responsibilities (Mahmut, 2020). The active enrollment and attendance of students at online learning sessions is the other metric used to assess educational institutions' efficacy (Cahapay, 2020). In formal educational settings, the formal relationship between teachers and students is increasingly evaluated through their participation in home-based online settings; this also necessitates ongoing administration support in developing an engaging platform for instruction delivery and performance evaluation (Toqero, 2020).

H1: Stakeholder performance is impacted by stakeholder engagement.

Learning Technology Adoption

The technology adoption model was firstly analyzed, explored and introduced by Davis in 1989 (Davis, 1989). This model was designed and experimentally applied in field of education; integrated in computers initially and with gradual modification in time and technology they were integrated into electronic gadgets such laptops and mobile phones (Lowther, 1998). The Technology Acceptance Model (TAM) is considered the first model of technology integration

which was and is still in continuous stage of development and adaption depending upon the modification in technological perspectives and further explorations in patterns of integrations (Bagozzi, 1992). First models adapted for education were used to evaluate the introduction of computers in the learning process (Trocaru, 2020). The development of the Internet and the burst of e-learning systems imposed some adjustments regarding the theoretical framework and the instruments used to study the digital technology adoption (Sumak, 2011).

In current time the technology integration into the educational field is observed through two way interactional system where one is the deliverer of the knowledge (teacher) and other is the receiver of the knowledge (student) (Nicolas, 2003). This integrated learning platform has further developed a new interactive-textbook based system also considered as blended online learning system where face to face interaction of teacher and student is combined with some specifications of online interaction tools (Liu, 2005). This blended system of learning with its integration framework into digital technology has moved the educational pace line into a new era of development that the users may feel an ease with and at the same time they feel it difficult to adopt also.

Adoption of Learning Technology and Stakeholder Performance

Technology incorporation into educational institutes' performance during the lockdown has had a very favourable influence (Singh, 2020). According to Shen's (2020) study, the deployment of learning technology has given educational stakeholders' at-home performance a multidimensional approach. Online learning tools are assisting institutions in increasing the frequency and ease of home-based learning while also making their work more environmentally friendly (Rahmi, 2020). It is becoming easier for teachers and students to communicate with one another. The most fascinating feature is that integrating technology into educational tasks has also increased functional advancement and stakeholders' capacity to adhere to the online system, which ultimately demonstrates their improved performance through development of technology-paced skills, capabilities, and technical problem-solving skills (Manzoor, 2020).

H2: Learning Technology Adoption has impact on Stakeholder Performance

Stakeholder Performance

According to Bernardin and Russell (1993), performance is a consequent consequence that can gauge the quality of an action or an individual's behaviour at a given time. Therefore, stakeholder performance in the educational sector is a direct result of the deeds and deeds committed by the

students and teachers. Another study by Mathis and Jackson (2006) defined an employee's performance in an organisation as either actions that were never taken by the employee when doing the action or actions that were never taken by the employee while performing the activity. The only indicator of the success or failure of the educational system nowadays is stakeholder performance, which is a topic of much discussion. Every educational sector's top performers are its students and teachers, and the effectiveness of the institution's online learning plan depends on how well they perform in those roles (Fidyah, 2020).

There are a number of factors that affect stakeholders' performance that have been examined in earlier studies, such as their engaging behaviours and the leadership styles used in the workplace (Bagyo, 2013). Another way to raise performance levels is through the performance evaluations that are given to employees (Lutwana, 2011). However, in the educational sector, stakeholder performance is affected more by their engagement with and adoption of the methods provided than by trainings and leadership style (Sendawula, 2018).

The interaction between the instructor and the student binds the stakeholders in the educational sectors. Both viewpoints are used to assess the operation and performance outcomes in the educational sector (Carroll & Conboy, 2020). Teachers that integrate their institute's operational and functioning procedures into their classroom instruction make sure that their performance benefits both the students and the institute (Lazar, 2020). In the same manner, students are an integral part of the institution whose success in terms of learning is crucial. The more he or she retains the information and exhibits the best results, the more his or her performance will advance (Shen, 2020). Every time new methodologies and approaches are used in the educational sector, the effectiveness of the stakeholders is evaluated by looking at how well the faculty meets expectations and how well the students are absorbing the new techniques.

Engagement of Stakeholders, Performance of Stakeholders, and Learning Technology Adoption

Due to the COVID-19 epidemic, the higher education system undergoes a technological revolution that includes online lectures, teleconferences, free textbooks for e-learning, online exams, and interactivity in virtual environments (Strielkowski, 2020). The online learning platform has changed how educational staff, including instructors, operate and carry out their jobs, as well as how students and their families view the system (Kumar, 2020). Prior to COVID-19, internet platforms were primarily acknowledged for interacting with the public in an

entertaining way (Strielkowski, 2020). However, in a few cases, the adoption of online learning strategies and the legitimacy of managing the online technology at institutions have been seen as having a positive impact on the use of online platforms brought about by technology. Teachers and students have shown improvements in their performance by displaying more engaged behaviours through these actions (Gonzalez et al. 2020). These surveys have demonstrated that incorporating technology into learning environments has its own benefits. The online teaching-learning process typically discriminates against disadvantaged and excluded students. The platforms for online learning and education may have had a big impact on the community of persons with hearing impairments, putting them in danger (Manzoor, 2020).

H3: The relationship between stakeholder engagement and organisational performance is mediated by adoption of digital technology.

Research Gap

As the pandemic situation has developed an urge for the quick strategy and decision to handle the current situation there is a need that decision makers need to maintain constant vigilance to identify and assess tipping points and escalation triggers for next steps (Aon, 2020). In future, developing quick and immediate strategies could be a very huge risk in terms of analyzing the outcomes, measuring the uncertainty of situation so the organizations should develop some future patterns and strategies that could be used as a backup in post pandemic situations. Adoption of technology in the educational sector and its integration in daily educational programs has nothing to do with pandemic environment or any natural disaster occurring but in future it can be a great alternative against physical meeting and live face to face interactions so there should be a new dimensions of focus developed where utilization of technology should be planned and strategized (van Beijma, 2015). Technology management for future can be a return and control of further monetary and business operational crisis (Kritikos, 2020). Shiffman (2020) and Shiffman and Shawar (2020) indicated the organizations were not prepared for this pandemic situation but there is a need to seek the strategies that can enhance the preparedness of the organizations for further securing their performance importance of information systems during the Pandemic and its relevance in achieving strategic success. Shiffman (2020), also recommended in his study that the infrastructural facilities should be availed to the education institutions which can regulate the digital learning process during future health emergencies.

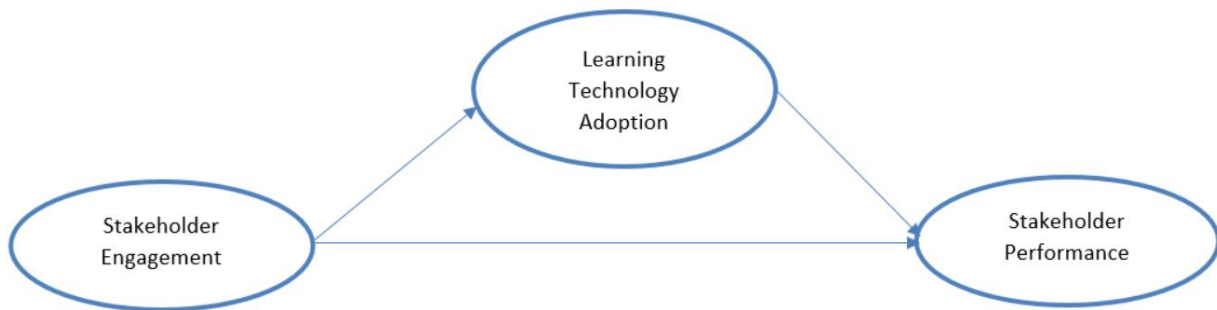
There is a need to ensure adequate funding for the improvement of the education system and to provide capacity development training to the stakeholders of higher education institutions. Interventions should be initiated through a targeted approach to create a positive space for study among the students from the vulnerable section of society (Esteban, 2020).

Conceptual Framework and Hypotheses

In this study, stakeholder engagement is taken as predictor while stakeholder performance is taken as criterion variable. Learning technology mediation act as mediating variable between stakeholder engagement and stakeholder performance.

Figure 1

Conceptual Framework



Hypotheses

H1: Stakeholder performance is directly impacted favourably by stakeholder engagement.

H2: The relationship between stakeholder involvement and stakeholder performance is mediated by learning technology adoption.

H3: The performance of stakeholders is directly impacted by the adoption of learning technology.

Methodology

Target Population and Sample Description

The entire professor and student body of the educational sector is the study's target audience. The lower Punjab is home to the educational institutions that were taken into consideration for this study. The convenient sampling technique was created specifically for this study. This method was chosen because it makes it simpler for the researchers to respond together.

Data Collection Method

For data collection, qualitative technique of research will be applied. In qualitative technique the interviews will be conducted with faculty members of the education sectors.

Results and Analysis

The pandemic of 2020 has created shockwaves all around the globe. In the midst of present pandemic, organizations and leaders have been focusing on operational and financial issues, prioritizing employees' wellbeing and finding ways to improve their productivity to survive ongoing health and economic shocks. Where Covid 19 has halted different occupations and industries almost completely such as tourism (religious and seasonal), travel etc. education sector was also adversely affected by this pandemic. Education sector in Pakistan already faces basic infrastructural challenges. From availability of digital connectivity to ensuring updated curriculum matching international standards are some of the problems faced by this sector.

100% of respondents believed that online learning programs are not fulfilling educational objectives of institute. Though some respondents highlighted the unprecedented challenges raised due to the global pandemic. This global pandemic has changed the face of many industries and business of sectors such as tourism, retail, education etc. These respondents believed that Pakistani educational institutes had no time to prepare and equip themselves with the technology and infrastructure required to achieve objectives of educational institutions fully (R2, R7). Our country is one of the poorly connected country in the world. Even with provisions of online lessons, the biggest challenge is ensuring internet connectivity at students' end. This challenge needs to be addressed at the government's end. However, under these dire circumstances institute are trying their best to maintain optimal level of educational performance (R3, R8).

These technologies also provide conveniences to both sides of teachers and students. The students of our sample universities belong to rural areas of Pakistan. Traveling to cities to reach universities is still considered difficult and an uphill task. Respondent R5 observed that online learning has removed this barrier and they can get their education from the comfort of their homes.

Stakeholder engagements

This pandemic has also presented some opportunities in the form of opting for E-learning programs and have benefited even the faculty members. In a country such as Pakistan where

technology adoption is still low teachers have got this opportunity to learn about the best practices from the region and use these global technology tools to offer e-learning lessons. According to R2, “In today’s world digitization ensure survival of business. This pandemic has provided our educational institutes a viable prospect to upgrade themselves. Faculty members are self-motivated to capitalize this opportunity, however the biggest challenge was to maintain students’ engagement.” Most of the teachers used tools such as university developed LMS and google classroom for content management according to their and students’ availability. Beside that faculty members are using zoom and google meet to conduct these online classes. However some teachers observed that they faced lots of problems during the beginning of lockdown in 2020 (R5, R7). Students’ connectivity was a major problem. Even faculty members were given instructions just to engage students at minimal levels so that they can get familiar with this method. However, with time both teachers and students started to grasp the technology pretty quickly. To keep them engaged, teachers used different methods such as extempore presentations, using whiteboards, class’s discussion sessions on case studies etc. These interactive sessions tried to build up engagements of students during classes. These technologies have also helped faculty members in managing their course content efficiently. In Pakistan most of the content/data management is still done on paper based record keeping. However, during this pandemic faculty members got a chance to digitize their lessons and notes for the very first time. It made them realize the ease of use and access for digital record keeping.

Technology adoption

Faculty members showed a linear adoption and learning behavior towards technological tools. At the start of pandemic, universities experimented with different learning methodologies. All methods were used from even delivering lectures through whatsapp to building a complex online learning system. However, all the faculty members emphasized that despite getting facilitations and trainings from their departments, it took them time to adopt it completely. Respondent R6 also emphasized that “getting trained was not important for technology adoption. Trainings can be taken even from youtube tutorials. The real challenge is tuning yourself and evolving your teaching style to accommodate online teaching methods”.

One of the biggest change encountered in our lives is physical disconnection with one another. “6 feet distance” has become the mantra of our lives in the midst of this pandemic. Where digital

solutions has provided a solution to this problem, on the hand it has also raised its own challenges. According to Respondent R 10, “During a normal term semester, faculty members can socially interact and share knowledge base, best practices and lecture materials. This exchange of knowledge facilitate in nurturing a learning environment of an institute. Where these technological models have allowed teachers to maintain digital connection with their students, however they can’t provide an alternative to human connection.”

Respondent R10 noted that “teachers have also started to use technology based resources more instead of conventional books.” Digital educational platforms such as Khan Academy, edx etc. have become popular with these faculty members.

Stakeholder Performance

100% of the respondents agreed that online learning methods present challenges for maintaining optimal level of performance as compared to on-campus classroom lectures. It focuses more on self-learning models as well. However, all of the respondents observed that they learnt quickly and tried to address the structural weaknesses in their future classes. For example Respondent R 7 said “I never used PowerPoint presentation before switching to these online teaching methods, however I started making these slides and shared them with the students before the class. They were expected to come prepared before the class. My class was more like a dialogue based lecture with applying the concepts on some case study. This helped me in covering most of the course outlines’ topics”.

Similarly time management is considered essential to evaluate performance of a faculty member. These online teaching methods provided flexibility and freedom to the professor to plan for his lesson plans at his own speed and conduct it at owns availability. 89.8% respondents observed that though they followed the department’s time table, however they could arrange an extra class even on weekend or in evening to cover any topic not taught during regular class.

Dialogue between student and teacher is considered the soul of a learning environment. Online learning method raises serious challenges for implementing a run-time interaction between students and teachers. 100% of respondents voiced their reservation about this performance indicator. According to Respondent R9, “Students’ interactions can be managed efficiently in a class of no more than 25 students. However, our strength of an average class is 40-50 students. This also present us with a difficult situation.” Keeping cultural and religious sensitivity in mind,

teachers were instructed by their departments to keep videos off. This was also suggested due to connectivity issues observed by students from rural areas. This also made it difficult for teachers to ensure that students are actively participating.

100% of the respondents believed that students' performance assessment was one of the biggest challenge that they faced during this process. As Pakistan is one of the most poorly connected country in world, therefore most of the students also used this narrative. Respondent 6 believed that "problem is not with technology, rather with the students' attitude. For every assessment they have a readymade answer that internet is not available in their area at particular time."

These teachers showed their distrust on students' narratives and agreed that this could potentially harm even those with genuine concerns. Universities also struggled to develop SOPs for valid assessments methodologies. Mostly assessment methods were based on open book and time-constrained exam strategies. Faculty members were instructed to make applied papers to ensure reliable assessment across students.

Conclusion

The pandemic of 2019 has disturbed the life pattern as well as disturbed the human social and interaction cycle. The business and occupations are halted due to social distancing that is deemed essential to curb the spread of this virus. This job killing pandemic has been a reason for discontinuation of businesses altogether. As a result governments were forced not only to tackle pandemic but also the struggling businesses and economies. Organizations also had to respond quickly to the new norms in order to ensure their survival. Education sector was one of the sector that was affected drastically. While education institutes in Pakistan are not well equipped with basic infrastructures, yet these institutes had to update and create SOPs for their students and teachers for their safety.

All educational institutes started their online learning systems to provide uninterrupted teaching services. Our results attest that at the start of lockdown stakeholder engagements' were low due to unfamiliarity with the technology and the new teaching patterns required for online teaching. However, with time respondents started exploring online solutions and their increased engagement had positive impact on stakeholder performances.

The respondents also believed that given the unprecedented and uncertain circumstances online learning solutions provide the best option for managing educational services. Though it has

helped in providing uninterrupted connectivity with the students, but the faculty members feel isolated with one another. Regular meetings between faculty members promote a more conducive environment that encourages research collaborations and sharing of best practices. Respondents also felt that a more direct and personal teacher-student interaction is difficult to maintain on online forums. The instructors also had to learn and devise methods to keep students involved in their lectures. They had to shift to a more question-and-answer teaching methodologies. Videos, whiteboards etc. were also used to increase students' engagement. Technology adoption also provide some unintended benefits to faculty members. Some of these teachers were using online learning tools for the first time and they realized the easier content management and time management achieved through these methods.

It is proved from our findings that stakeholder engagements in education sector has a positive impact on their performance. Online learning technologies also enhances their relationship and has a direct impact on stakeholders' performance.

Suggestions for Improvement

Faculty members suggested that online teaching methods should continue even after the normal proceedings of universities would start. This would facilitate the universities in managing their courses' contents effectively. Lectures of notable professors can be recorded and shared on digital platforms to provide opportunities to students from rural areas. Respondent R4 emphasized that faculty members should be continuously trained on delivering lectures online in order to mitigate the effects of any future calamity

Respondent R2 suggested "Instead of technology adoption, universities should develop such interactive sessions that can increase students' interests and participations." 99% respondents suggested that their universities should develop a comprehensive online learning systems that can accommodate and address all the issues related to online lectures. Universities should also ensure easy and reliable access to this online learning system, otherwise teachers would be forced to shift back to the free standard digital solutions available.

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