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Academic leadership during the time of crisis: Success story of implementation success from traditional to online mode of education in a low-resource context

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Abstract: The beginning of 2020 was marked by the spread of the COVID-19 virus, which led to a global response in terms of lockdown measures by several countries and landed academics to offer online settings for teaching, research, and administrative activities. The situation led universities to respond quickly and effectively to address the needs of teachers, staff, students, and society. This study provides an overview of Active Implementation Frameworks (AIFs) adopted by a public-sector women's university to overcome the hurdles due to the pandemic lockdown. The study provides evidence that AIFs are effective for implementing evidence-based models by promoting the development and deployment of innovations through implementation teams in a resource-constraint setting. The result of AIFs adoption by the university was the closure of the academic year on time along with global recognition of the university's efforts during the pandemic by World Universities with Real Impact 2020. Fatima Jinnah Women University was ranked in the top 50 in crisis management category. This recognition is a testimony to the application of best practices for transforming higher education to not only survive but thrive in uncertain times and serves as a roadmap for public-sector universities to adapt to their contextual realities.

Subjects: Sustainability Education, Training & Leadership; Higher Education; Teaching & Learning - Education

Keywords: Active Implementation Frameworks; academic leadership; implementation team; crisis management

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1. Introduction

The spread of COVID-19 challenged the academic leaders of the multi-faceted mission of Higher Education Institutions (HEI) to design and implement flexible solutions to continue teaching, research, and contributing to society by adopting the new unpredictable reality. The academic leaders made urgent and critical decisions for dramatic needs that arose during the pandemic times which shaped the future of their institutions by addressing issues and obligations toward teachers, students, and administrative staff. The situation provides academic leaders a chance of recalibrating institutions to build an efficient and adaptive setting for a knowledge-based society.

The ecological view of adaptive academic leadership style echoed in literature to assess the HEI's readiness for change through an online survey in times of COVID-19 (Jones, 2022; Mukaram et al., 2021). However, studies based on the Active Implementation framework (AIF) to bring change during uncertain times by academic leaders with a special focus on low- and middle-income countries in the educational setting are limited. Therefore, building from literature where academic leadership is identified as a key differentiating factor for smoothly bringing change in HEIs, this study discusses the process of change, i.e. from traditional face-to-face teaching to online education by employing AIFs in Fatima Jinnah Women University (FJWU) in the times of COVID-19 (D. L. Fixsen et al., 2005).

HEIs in developed countries had the advanced tools and requisite resources for digitalization and to continue through online teaching to effectively implement their decisions. However, the situation of Pakistani public-sector universities was different compared to the universities in the rest of the world. HEIs of Pakistan are funded and regulated by the higher education commission (HEC) since 2002 to promote research activities with a mission of strengthening the knowledge-based economy (Settles et al., 2019). There are 218 public and private universities in 2021–2022 in Pakistan, which are offering traditional or face-to-face modes of education. With the emergence of COVID-19, HEC advised the HEIs across the country to ensure their "online readiness" before offering online education (Iqbal et al., 2022). However, the majority of these universities were not digitalized and relied heavily on face-to-face teaching. Women's universities in Pakistan were no exception to it. The situation was further exacerbated by the financial constraints these women's institutions faced. FJWU with more than 4,500 student population was among these women's universities. FJWU was the first premier women's university in Pakistan, established in 1998. With the decreasing government funding, the university was facing a financial crisis when the pandemic hit the country. The university had to close on-campus academic operations on the orders of the government in March 2020, and only skeletal administrative staff was allowed on campus. This lockdown was seen as a threat to the survival of the university. It also provided opportunities in the form of technological advancement and techno-cultural transition. However, due to financial constraints, it was not possible for the university to fully digitalize. Therefore, the top management of the university decided to bring about change using AIFs.

Academic leadership during crisis

Several studies in the literature refer the academic leadership as diverse managerial roles ranging from visionary, strategic, transformational, and administrative roles (Dumulescu & Muțiu, 2021; Settles et al., 2019). The complexity and diversity of leadership roles in HEIs is a debatable issue focusing on vision, strategy, and networking to acquire the resources desired for the application of vision and strategy (Dinh et al., 2021; Ramsden, 1998). Ravitch (2020) argues that effective leaders can read and respond in times of crisis by leading their organization to achieve its goals and shared vision. Academic leadership during uncertain situations implies flexibility and adaptability with a capacity to recognize a crisis as an opportunity and have a robust capability to navigate during uncertainty by using innovative methodologies to remain competitive (Ancona et al., 2007; Fernandez & Shaw, 2020). The multifaceted operations of teaching, research, and contributing to society turn out to be challenging for academia during COVID-19. Faced with the uncertainty and growing intensity of the pandemic globally, the educational institution made a strategic decision to transition to remote learning. However, this decision requires transformative learning and adaptive

work for all the stakeholders, specifically in developing countries where academic institutions lack the requisite digital infrastructure to support a smooth transition. Studies also argue that radical changes in attitude, values, and beliefs for some stakeholders are the additional challenges towards this transition (Hamann et al., 2020; Heifetz & Laurie, 2001; Mukaram et al., 2021).

Literature supports the critical role of academic leaders in creating a culture centered on trust, collaboration, and shared leadership, which led to the sustainability of institutions during a crisis (A. Kezar et al., 2019; Dever & Justice, 2020). Several studies recognized the significance of the shared leadership model, i.e. distributing leadership for directing unpredictable challenges such as that posed by the COVID pandemic (Fernandez & Shaw, 2020). Literature supports that the institutions operating a shared leadership model have benefitted from a greater degree of agility, innovation, and collaboration (A. J. Kezar & Holcombe, 2017; Dee & Leišyt_e, 2016). Academic leaders set the institutional priorities, with a realistic strategic vision that is aligned with the institutional mission and goals to have a strategy in place for crisis resolution to reassure all stakeholders (Ravitch, 2020).

AIFs in educational setting

In the literature, there is an extensive application of AIFs in multiple contexts, by considering innovation for materializing significant outcomes to respond to crisis situation including education and health in high-income countries (A. A. Fixsen et al., 2021). However, in low- and middle-income countries, the understanding and application of the interventions by capitalizing on implementation frameworks is still limited (Tabak et al., 2012). Implementation strategies in the form of applied models and frameworks are comprehensively reviewed in the literature (D. L. Fixsen et al., 2005). AIFs provide a roadmap for capacity development by implementing innovations through the use of evidence-based interventions in practice (Metz et al., 2015). The AIFs can be considered as mid-range theories of implementation made up of relatively concrete concepts that are operationally defined and relatively concrete propositions that can be empirically tested.

The AIF consists of six core components, i.e. (i) usable innovation, (ii) drivers of implementation, (iii) implementation stage, (iv) implementation teams, (v) systemic change, and (vi) improvement cycles. Among them, the usable innovation component ensures the formation of operational explanations of innovations and fidelity assessments. However, the drivers of implementation ensure the formation of competencies related to innovation, policy of organization, and changes in procedure, with the involvement of leadership that encourages the use of innovation. The implementation stage assures the iterative innovation-based implementation which materialized into institutionalization. AIF also proposed the need for highly skilled implementation teams for materializing system-wide change. To support the change in structures, policies, and processes for the creation of an aligned and integrated system, AIF proposed a systemic change component to maximize the intended outcomes at scale. Lastly, AIF suggests the use of improvement cycles for continuous and purposeful improvement through the use of plan-do-study-act cycles (PDSACs). There is extensive support in the literature for the use of PDSAC for implementing innovative implementation methods where an issue identification is followed by the plan development which was tested (Do) and reviewed to evaluate the effect of the plan (Study) (Kloos et al., 2022), followed by the critical role of the implementation team which decided to continue, change, or restart the cycle (Act). Findings of every iteration of cycle needed to be shared with the leadership for their continual involvement, commitment, and feedback for the sustained usage of effective innovations. Table 1 presents the four stages of implementation ranging from exploration, installation, and initial implementation that eventually lead to full implementation.

(1) Exploration stage involved understanding the needs of the stakeholder, i.e., the faculty and students, and the identification of innovations that can create positive change for the adoption of online education. (2) Installation stage shifted the efforts for capacity building and arranging resources needed to introduce, improve, and sustain the online mode of education. An implementation team is formed at this stage to come up with the initial plan for implementation and

Table 1. Stages of Implementation

Exploration	Installation	Initial implementation	Full implementation
Assess needs	New mode of education delivery	Education delivery initiated	Skillful implementation
Examine fit and feasibility	Develop implementation supports	Data use to drive decision-making and continuous improvement	System and organizational changes institutionalized
Involve stakeholders	Make necessary structural and instrument changes	Rapid cycle problem-solving	Student and teacher outcomes measureable
Operationalize model			
Make decisions			

Adapted from Metz, A., Bartley, L., Ball, H., Wilson, D., Naoom, S., & Redmond, P. (2015). Active implementation frameworks for successful service delivery: Catawba county child wellbeing project. Research on Social Work Practice, 25(4), 415–422.

Table 2. Core competencies of implementation teams

Develop team structure	Know and apply intervention	Know and apply implementation	Know and apply improvement cycles	Know and apply system change
Represent the system	Assess fit of intervention with FJWU context	Develop infrastructure	Institutionalize feedback loops	Demonstrate knowledge of system components
Develop accountable structure for moving change forward	Demonstrate fluency in strategy	Conduct stage-appropriate work	Use data for decision-making, problem-solving and action-planning	Use skills for system building and increased cross-section collaboration
Develop communication protocols and policy	Operationalize intervention as needed	Use adaptive leadership skills	Functionally engage leaders	

conducted the training, monitoring, and quality improvement cycles. (3) At the initial implementation stage, performance data are used to rapidly improve both the innovation and implementation supports and strategies; and once a high level of acceptability, adoption, and fidelity were reached and maintained, the program began the (4) full implementation stage where high-quality implementation and program outcomes are realized, and sustaining performance is a core focus.

Implementation drivers are the cornerstone for bringing about system change. These implementation drivers are used collectively to ensure high-fidelity and sustainable implementation of the programs (Figure 1). Competency drivers develop, improve, and sustain teachers' and their supervisors' ability to implement and sustain alternate educational innovation. Organizational drivers provide support to competency drivers by creating an enabling environment for the teachers, students, and academic heads of departments to ensure that the data collected are used for continuous improvement. Leadership drivers ensure that appropriate strategies are adopted to overcome the challenges in the implementation of alternate educational innovations. All three drivers are complimentary to one another and compensate wherever a weakness is detected in the three drivers.

Active implementation requires building teams with the capacity to implement the innovations throughout the organization. These teams reduce the overall time to implement innovations, core competencies of implementation teams are presented in table 2 (Fixsen, Blasé, Timbers & Wolf, 2001). This case study demonstrates the trials and tribulations faced by the core implementation

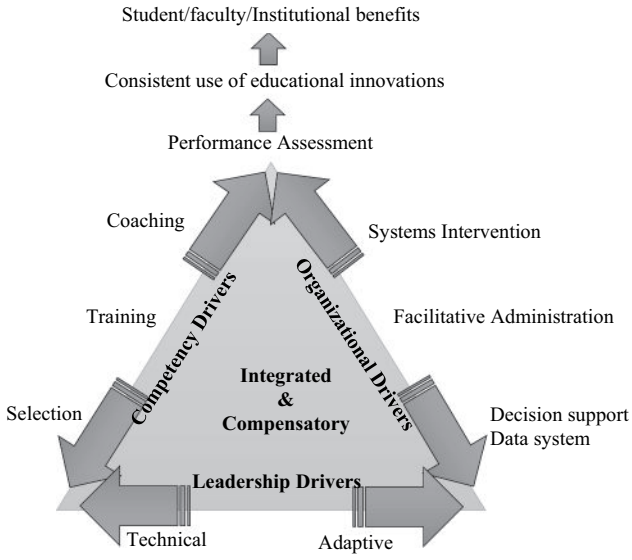

Figure 1. Implementation drivers. Adapted from Fixsen, D.L., Blasé, K.A., Metz, A., & Van Dyke, M. (2013). Statewide implementation of evidence-based programs. Exceptional Children (Special Issue), 79(2), 213–230.

team in the introduction of a new albeit evidence-based intervention and how a team newly instructed in the principles of implementation overcame the obstacles by using improvement cycles.

Adapted from Metz, A., Bartley, L., Ball, H., Wilson, D., Naoom, S., & Redmond, P. (2015). Active implementation frameworks for successful service delivery: Catawba county child wellbeing project. Research on Social Work Practice, 25(4), 415–422.

2. Methodology

We adopted a case study approach to analyze the leadership role in a time of crisis. FJWU was taken as a case of women's uni'versity which transitioned from face-to-face to online mode in a matter of days without having any learning management system (LMS) and financial resource constraints. FJWU is the first premier women's university in Pakistan, however, faced the resource constraints in terms of decreased government funding when the pandemic hit the country. At that time, face-to-face education was the only mode of education in FJWU that pose challenges with the closure of on-campus academic operations on the orders of the government in March 2020. With the only skeletal administrative staff on campus, COVID-19 was seen as a threat to the survival of the university. Therefore, the academic leadership of the university decided to bring about changes in the form of technological advancement and techno-cultural transition using AIFs.

The methodology used AIFs to assess the transition to online teaching. For this purpose, we used qualitative techniques to analyze the primary data collected in the form of internal documents (minutes of the meetings, internal office memorandums, and emails), student and faculty surveys, and focus group discussions. Due to the COVID-19 lockdown, faculty and students were not available on campus and were approached via emails to respond to online surveys and to participate in Focus group Discussions (FGDs), where necessary faculty was called on campus using a staggered approach following strict COVID-19 Standard operating Procedure (SOPs) provided by the government.

An online survey through Google online platforms was conducted from 10 April to 20 April 2020 with the aim to understand students' readiness towards online learning. A total of 4,918 student participants were considered through a combination of the total population and convenience sampling. The online survey questionnaire contained three subgroups and was adapted from the study by Doculan (2016). In

the first part, general demographics were asked such as age, session, and region of residence. The second part comprised questions to determine the student's online learning readiness (SOLR) to investigate their technical, social, and communication competencies. The third part of the survey asked for information about device characteristics to evaluate their equipment readiness. Likewise, a survey from the faculty and staff members was conducted from 5 April 5 to 12 April 2020 with the aim to understand their readiness towards online teaching. A total of 250 faculty members that included permanent and adjunct faculty members and 151 administrative staff of the university were considered through a combination of the total population and convenience sampling. Lower support staff (a total of 120 in number) were excluded from the study as they were not directly linked to the academic activities. Online written participation permission was obtained from the faculty and staff members. The ethical approval was obtained from the Research Ethics Committee of FJWU. The online teaching readiness survey questionnaire contained five categories such as technological, pedagogical, online communication, time and environment management, and institutional support with reference to the literature (Martin et al., 2019)

Moreover, online FGD was conducted to explore needs assessment to design an effective strategy for online education with the top- and middle-tier management. Five online FGDs within three participants for each academic department were conducted. FGD sessions were recorded with the participants' consent. A number of semi-structured protocol questions were prepared by the core team members to be used during the needs assessment with the objective to identify the most cost-effective ways to overcome the hurdles due to the pandemic lockdown. All FGD sessions were guided by moderators who had been trained earlier by members of the core team, especially in terms of the suitability of the questions posed and the probing handled during the FGD sessions. The moderators' ability and skills to develop rapport in each FGD session had successfully established a comfortable environment between the participants. As a result, they were able to discuss, answer, and provide their views and opinions on the most cost-effective ways to switch to an online mode of education. Finally, the recorded FGD sessions were transcribed and analyzed using thematic analysis where the data were coded and analyzed to identify emerging themes for the cost-effective ways for online education. This study also used WhatsApp messages and emails between academic departments and students as a data collection qualitative methodology where both audio recording and text messages in WhatsApp and emails were manually woven together to construct a complete transcript for review and decision-making.

For internal documentation review, 733 courses, more than 100 meeting minutes, and inter-office memorandums were reviewed using content analysis. These inter-office memorandums pertained to correspondence between 25 academic departments, quality enhancement cell (QEC), office of research, innovation and commercialization, center for learning excellence, information technology center, center for well-being, career counselling center, academic support office, examination office, registrar office, and vice chancellor office. In addition, hundreds of emails and WhatsApp messages between academic departments and students were also reviewed.

3. Results and discussion

The vice-chancellor, an implementation science practitioner herself, deployed implementation science philosophy to carry forth the change in FJWU during the COVID-19 times. AIF was used as a reference point. The AIF uses a six-phase model comprising usable innovation, implementation drivers, implementation stages, implementation teams, improvement cycles, and systemic change.

1. Usable innovation

The usable innovation phase included developing a clear description of an implementation program that would not only make the university digital in the face of crisis but would also finish the academic semester without any hindrances and wasting of the student's valuable time. In addition, the financial crunch faced by the university was also kept in mind. In the first instance, data were collected through an online survey for the student and teacher readiness to switch to an online mode of education, and FGDs were held with the top- and middle-tier management to find

the most cost-effective ways to overcome the hurdles due to pandemic lockdown. The surveys specifically focused on the use of technology without any extra financial burden on the university along with its ease of use. These surveys were taken from the faculty after an open house that was focused on generating ideas. During the open house, academic ideators presented their model. Out of a number of models, three models of online teaching were shortlisted. The ideators of these models were asked to discuss a detailed presentation of their alternate teaching models to the entire faculty. The idea was initially analyzed by 25 heads of academic departments ranging from natural science to social sciences and humanities. This was important as the range of academic departments included domains such as bio-technology, physics, and chemistry at one end of the continuum and fine arts and languages at the other end. One of the alternate education models used google classroom, a free service from google for educational institutions along with the integration of other online features to create an alternative LMS. This model was supported by 80% of the academic departments. By using open house for generating ideas and presenting viable models to the FGD for cost-effective solutions followed suit the surveys to check the student and faculty readiness to switch to an online mode of education. These methods generated enough data for informed decision-making of the top management.

2. Implementation stages

The second phase involved implementation that consisted of multiple substages, namely exploration, installation, initial and full implementation, and sustainability. In this phase, apart from the faculty, students were also involved and data were gathered through surveys for adequacy of the online educational resources during the pandemic lockdown. Survey results showed that the average age of respondents was 20 years, and they were master's level (34%), undergraduates (65%), and Ph.D. (1%). Undergraduates from years 1 to 4 were equally represented. Cronbach alpha of the SOLR questionnaire was >0.7 for overall items and individual factors. The overall mean and individual competencies readiness scores were 4 to 4.5, suggesting a high level of readiness for online learning from the side of students. All the competencies in the SOLR demonstrated a high level of readiness, with the highest score for social competencies with classmates ($M = 4.8 \pm 0.2$) and least score for communication competencies ($M = 4.1 \pm 0.5$). There is a moderate score in the survey for equipment readiness. Equipment readiness refers to having equipment or devices needed for online learning such as a computer or smartphone. This finding reflects that the students owned their devices and had internet connections within their residences. The online teaching readiness survey findings showed that faculty scored moderates in terms of their technological, pedagogical, online communication and institutional support from the university. Faculty new to online teaching perceive moderate levels of proficiency to perform pedagogical competencies. This indicates the need for faculty to experience high-quality online teacher's training before shifting to an online mode of delivery which may in turn increase their perceptions of and confidence in their ability to teach online. The findings of the survey also confirm that designing learning activities and creating online course orientation were high-rated competencies from the faculty side in online course design.

Based on the focus group discussions held during the first phase, academic departments were asked to pilot-test the online education system. A core team was created consisting of a vice-chancellor to provide vision and guidance, ideator to oversee the implementation and training, and a policy analyst to develop the online education policy of the university based on evidence-based research. The role of this core team was to oversee the pilot testing of the online system along with the drafting of the policy. In this pilot testing, five academic departments participated on a voluntary basis. Training to both faculty and students of these five departments was carried out on the system (education, public admin, and science and technology). The online education was tested for a week, and a discussion was held with the Senior Management Committee (SMC) members. Based on the results of the pilot testing, rest of the academic departments were asked to replicate the exercise. During the initial implementation of the system, one focal person from each department was specifically trained on the troubleshooting aspects of the technology. Furthermore, faculty and students were fully trained in the usage of the technology. To ensure the sustainability of the entire online education system, a three-tier committee was formulated

consisting of faculty and head of department, Deans of respective faculties, and QEC and Information Technology Center of the university. The role of this three-tier committee was to ensure not only the quality but also the smooth functioning of the entire system. Checklist for online course quality assurance was developed and made part of the entire curriculum of the university.

3. Implementation drivers

The implementation drivers consisted of organizational drivers and competency-based drivers. Organizational drivers involved the continuous guidance and support of the top management for the implementation of an online education system. In addition, IT support along with full administrative support was provided to the academic departments to succeed in the implementation. To support top management, weekly feedback data on organizational drivers were collected from the relevant stakeholder to assist in the decision-making process. Under the competency drivers, coaching, training, and performance assessment were part of the continuous learning process of the faculty as well as of the students. This was further enhanced by the technical training provided to the faculty for the designing of online courses, their time management skills, and pedagogical and online communication skills with dynamic institutional support. All these drivers contributed to the fidelity of the online system in FJWU. Feedback data on implementation drivers were collected through monthly online surveys of stakeholders for continuous support to academic leadership for effectively monitoring the progress of interventions.

4. Implementation teams

The implementation teams were formed that oversaw different aspects of online education. The core team oversaw the development and implementation of the system. The three-tier committee oversaw the quality assurance aspect of online education. The implementation team comprised master trainers that provided training to the faculty and students. This team also was tasked to cater to the needs of all stakeholders and provide assistance to them and provide feedback to the core team. The technological team assisted in any problem that arose from the usage of technology by the stakeholders. Table 3 provides the overall results of the core implementation team.

Table 3. Results of the core implementation team

Objectives achieved by the core team	Results
Development of specialized teams	The core team identified individuals having expertise in various domains. In this way, specialized teams were formulated that were related to IT, technology-oriented pedagogical methods, and quality control. These teams helped the core team in implementation.
Identify the intervention	The core team studied various online education models through an inclusive process to ensure viability and stakeholder agreement. The inclusive process yielded a cost-effective, multi-technology-integrated model.
Design and execute the implementation	The core team further integrated the low-cost, technological intervention with various administrative systems to ensure the smooth functioning of academic activities.
Identify and implement improvement cycles	The core team held regular meetings with 25 heads of academic departments to gather information on problems and take corrective measures.
Support systems change	The core team helped in the development of the university's online system. This further led to the revision of various policies such as the examination policy. The team also helped in the decision-making at various levels within the university. The university online policy was adopted by various local universities and appreciated by the higher education commission.

Table 4. PDSAC

Cycles	Plan	Do	Study	Act
Cycle 1	The transition from face-to-face to online learning	Identify intervention and pilot test	Results of pilot testing and making improvements.	Implementing the intervention at the university level.
Cycle 2	Identify the core team	Creation of specialized teams for functional implementation.	Functional implementation problems were identified through interactive sessions with the head of departments.	Capacity development of all stakeholders in the university.
Cycle 3	Need for quality parameters was identified	Development of checklist and templates for quality assurance	Three-tier committee was created to identify gaps in quality parameters.	Standard was developed to ensure uniform implementation across 25 academic departments.
Cycle 4	Online teaching policy development	Involvement of different stakeholders in policy development	Alignment of online teaching policy as per the direction of the higher education commission.	Ensuring implementation of FJOTs policy across 25 academic departments.

FJOTs: Fatima Jinnah Online Teaching systems.

5. Improvement cycles

The use of PDSAC helped the core team members to utilize the feedback received from different teams and stakeholders to ensure the effective implementation. Table 4 provides the overall summary of PDSAC.

6. Systemic change

Within the AIF, systemic change reflects a change in the status quo to produce the intended outcome of the innovation it is necessary to break the inertia within the organization. FJWU

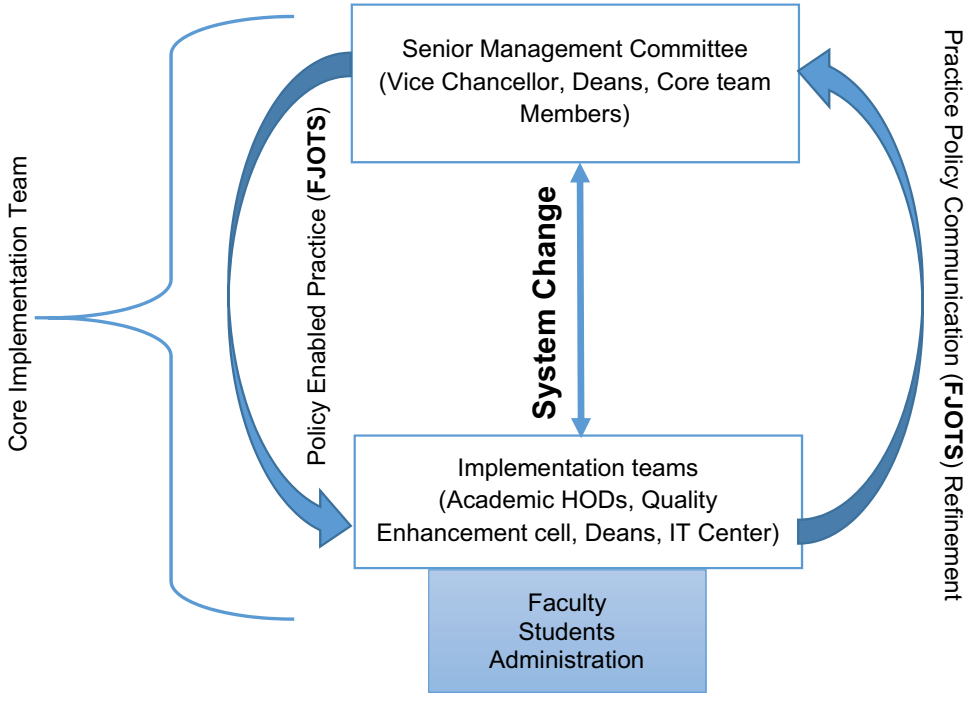

Figure 2. The approach to systemic change adapted from the Active Implementation Research network (AIRN) available at www.activeimplementation.org.

Table 5. Teacher evaluation for 2020–2021

Sr. no.	Course design and delivery (item and code)	Spring 2020	Fall 2020	Spring 2021	Fall 2021
1	Course organization and management	4.2	4.4	4.2	4.3
2	Use of a variety of resource materials for learning	4.2	4.3	4.2	4.2
3	Appropriate quality of teaching materials	4.2	4.3	4.2	4.2
4.	Easy access to online/F2F class sessions	4.2	4.3	4.2	4.2
5.	Use of a variety of apps/tools/ mechanisms for effective student learning	4.2	4.3	4.2	4.2
6.	Course-relevant assignments	4.3	4.4	4.3	4.3
7.	Reasonable methods of assessment	4.2	4.3	4.2	4.3
8.	Satisfaction with overall quality of the course	4.2	4.3	4.2	4.3

established in 1998 became trapped in inertia and status quo mainly due to its premier position as the first female university in Pakistan. This had a detrimental effect on the overall financial position of the university. The pandemic provided an opportunity to break the inertia and status quo by developing expert implementation teams and effective use of AIF.

The systemic change followed the approach developed by the active implementation research network as shown in Figure 2.

The implementation teams consisted of the academic head of the department, one senior faculty member, the dean, a representative of the QEC, and the representative of the information technology center. In all 25, implementation teams for alignment of educational activities with the alternate education delivery mode were formulated. These teams through their respective dean were represented in the senior management committee. The problems faced by the implementation teams were presented and discussed for system rectification and implementation. The core implementation team provided support to the department-level implementation teams.

The core implementation team helped in the development of policy-enabled practice, Fatima Jinnah Online Teaching system, and also devised the process of grievances for both faculty and students. These two policy documents helped in the effective implementation of alternate education in the university. In addition, during the interactions with the faculty, students, and staff, the core team developed a comprehensive frequently asked questions document that provided help to all stakeholders to overcome routine problems.

Table 6. Course design & delivery for 2020–2021

Sr. no.	Teacher evaluation (item code)	Spring 2020	Fall 2020	Spring 2021	Fall 2021
1	Use of effective teaching strategies for students learning	4.4	4.3	4.2	4.3
2	Course taught in a well-organized manner	4.4	4.3	4.2	4.3
3	Students participation encouraged in online/F2F class activities	4.4	4.3	4.3	4.3
4.	Class discipline maintained to set online class decorum	4.4	4.3	4.3	4.3
5.	Online/F2F education enabled student to actively participate in class	4.3	4.2	4.2	4.2
6.	Interactive online/F2F sessions for students learning	4.3	4.2	4.2	4.2
7.	Timely feedback on assignments/ quiz/class activities	4.3	4.3	4.3	4.3
8.	Course completed in time	4.5	4.3	4.3	4.3
9.	Quality of instruction meets the teaching standards	4.4	4.3	4.3	4.3

7. Outcomes of AIF

This section discusses the survey results that were conducted by the QEC at FJWU after the adoption of the online mode of education by the university to understand the perceptions of students about teaching and learning during online modes of education for the period 2020–2021. It was a longitudinal survey as was conducted in the Spring and Fall of 2020 and 2021. For this purpose, the entire population of students at the university from all programs from 2020 to 2021 is considered for quantitative research analysis. The survey comprised three parts, mainly part 1 is about teacher evaluation, part 2 is about the course design and delivery, and part 3 is about student's self-evaluation in the courses during pandemic times. Table 5 shows the teacher evaluation for 2020–2021 where nine items are used to understand the quality of teaching during the pandemic time. Scoring criteria are based on 5-point Likert scale, where 1 stands for alarming, 2 stands for unsatisfactory, 3 for satisfactory/fair, 4 for good, and 5 stands for excellent. Descriptive

Table 7. Student's self-evaluation in the courses for 2020–2021

Sr. no.	Students self-evaluation in the courses	Spring 2020	Fall 2020	Spring 2021	Fall 2021
1.	Class preparation by prior reading or doing assigned tasks	4.5	4.5	4.4	4.5
2.	Regular visit to online/on-site classroom to access course resources	4.6	4.6	4.5	4.4
3.	Questioning for clarification about a concept/ assignment	4.5	4.4	4.4	4.4
4.	Timely submission of course assignments/ projects	4.7	4.6	4.6	4.6
5.	Achievement of the expected student outcomes of the course	4.4	4.4	4.3	4.4
6.	Studying for the rigorous course	4.3	4.3	4.3	4.3
7.	Acquisition of new skills and strategies to improve learning	4.4	4.4	4.3	4.4
8.	Satisfaction with own performance achievement in this course	4.4	4.4	4.3	4.4
9.	Level of class attendance	4.7	4.8	4.7	4.7
10.	Amount of personal effort	4.7	4.7	4.5	4.5

statistics show that respondents mark the items in the range of 4.3 mean value which implies that students ranked the quality of teaching well for their programs during the pandemic times. Similarly, in Table 6 for the course, design, and delivery, students scored the items in the range of 4.2 which implies that students ranked the quality of course design and delivery as good for their programs during the pandemic times. Lastly, in Table 7, the students scored their self-evaluation in the courses with the mean value of 4.6 which implies that students ranked their efforts high for their programs during the pandemic times.

FJWU was also globally recognized as the top 50 international universities ranking in the crisis management category for its project titled, "Education Outreach: Dynamic Strategies in the Crisis of COVID-19 Pandemic" for its effort during the pandemic. It is noteworthy that FJWU participated for the first time in World Universities with Real Impact in 2020, and its achievement as a top 10 global university

is a testimony to the application of best practices for transforming higher education and serves as a roadmap for public-sector universities to adapt to their contextual realities.

8. Conclusion, research implication, and future directions

This case study contributes to the contemporary literature on academic leadership using evidence-based interventions during the COVID-19 pandemic. Under the dynamic and agile leadership of FJWU, a holistic transformation plan was carried out through evidence-based interventions by using AIFs which encompassed formulating academic and evaluation policies; taking quick and responsive administrative measures; conducting training for teachers, staff, and students; implementing academic and personal interventions, e.g. academic advising and online counselling; and approving, monitoring, and evaluating the delivery of online/hybrid education through a rigorous quality assurance mechanism based on a global standard for online education. From a practical standpoint, this study contributes by creating awareness about the significance of using the implementation sciences framework in academic leadership practices in challenging times and of the necessity for leadership initiatives to foster change, innovation, and adaptation for discovering the best methods to address indigenous, nationwide, and international challenges. The challenge for academic leadership is how to encourage the necessary skillset and mindset shifts for all who work in the higher education setting. Thus new approaches and practices will have to be unified into the new realism of universities, successfully harnessing the knowledge gained during the COVID-19 time. Study outcomes lead to several areas of future interest such as the use of implementation science-based decision-making in an academic environment. Moreover, as the diverse academic leadership practices across universities differ according to their organizational culture, custom, vision, etc., therefore, future studies may address this matter by considering these factors by effectively harnessing the experience gained during the COVID-19 time.

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