



“Identification of Challenges Faced by Schools in E-Management and Strategies to Overcome the Challenges”

Asma Abrar: *Allama Iqbal Open University, Islamabad (AIOU)*
Afshan Huma: *Assistant Professor, AIOU*

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ABSTRACT

During Covid 19 for the first time in Pakistan the need had arisen for implementation of e-management essentially for the schools to mitigate the learning losses due to lockdown. For that purpose, technological solutions had to be implicated to resume the work and to keep teachers and learners on track. Different kinds of schools were able to handle the situation through different strategies and modes of e-management. The study was designed with sequential explanatory mixed method approach. Checklist was made to assess the availability of physical facilities. Interviews were conducted face to face, with working leaders include principals and administrators. Focus Group Discussions were held in the end of both data collection procedures and analyses of data in order to get the best remedial measures to eradicate the challenges in future. The results showed challenges of planning, directing, monitoring, resource handling, budgeting and the challenge of deficiency of resources for schools in terms of finances, human resource and trained staff. In specified area, the findings of the study showed lack of support and guidance from concerned/competent higher authorities, to school leaders who were striving to work for the successful execution of digital transformation of management in their schools. Schools solved the unexpected and novel problems through operational management but these experiences could guide further for strategic planning of e-management in this era.

Introduction

Every new phenomenon brings social change and that change leads to not only challenges but also to opportunities for society. Pandemic of COVID-19 has brought change generally and specifically in education. Such an event can help to revolutionize systems to bring innovative and enhanced reforms. Today, all around the world, spillover effect of Covid-19 pandemic has enforced administration and academics to be digitized at almost all levels of schools due to prolonged lock downs. Information gathered by World Bank shows that till the day 150 countries are reporting school closure (World Bank, 2020). As per World Health Organization recommendation, during school closure both administrative staff and students would be staying home as preventive measures to stop the further spread of the pandemic.

School Education System in Pakistan decided immediately to digitize the school administration to resume all school activities. School Education System seems to be transformed digitally not only for academics but also at administrative level during the COVID-19 (World Bank, 2020). While school authorities in Pakistan, at the beginning of the pandemic had no idea how to plan, organize and execute digital management and to impart and ensure learning to their students electronically as there was no specified mechanism in the area for how electronic or digital learning could be conveyed to every student while staying at home through managing school functions electronically, furthermore non-availability of skilled faculty in digital mode of learning who might know how to engage students and develop their interests in studies through technical digital media, were either unavailable or deficient. Some crucial

questions were, whether students, teachers and administration were skilled enough in use of technology in order to switch to digital mode efficiently or not, whether School administration had sufficient resources and budget to deal with the transit or shift to the new approach of management or not, whether school administration would be able to direct and monitor the instructions and execution dexterously or not. In fact, school education department and private institutes demanded technical/digital management models adequate to their characteristics and the current context of changes which could contribute to these organizations to meet the challenges, turning more competitive, sustainable and related to society (Scaglione, 2019). Thus, School administration had a reverse plan to make it possible for workers, teachers and learners to administer digitally the school activities and to resume the learning process. Yet, this situation being completely unforeseen became a huge challenge for school management. (Brammer and Clark 2020).

Literature Review

"Education in emergency contexts is immediately protective, providing life-saving knowledge and skills and psychosocial support to those affected by crises. Education also equips children, youth and adults for a sustainable future, with the skills to prevent disaster, conflict and disease" (UNESCO, 2015, p.34)

Schools management had to switch from in-person or face to face to digital transformation completely. Despite the fact, developed countries had identified the need, perks and benefits of digital transformation and had started experiencing electronic management much before the advent of COVID-19 yet there was a gap in developing

countries with reference to technological transitional adjustments, implementation and execution (Ratten, 2020). As in Pakistan, school administration was managed through traditional in-person operations of managerial functions, the use of computers had merely been to get the benefits of machine for storage and retrieval of data, subsequently, COVID-19 had demanded an enforced transition in administrative style and made it possible for institutions to bring operational excellence through efficient use of technology during lock downs of pandemic (Toth, 2020). At that time in Pakistan, there aroused a need of digital transformation of school management.

Functions of management

Planning: It is essentially the recognizable function of management as it incorporates the reasonable and exact credible identification of the goals ought to be coordinated to the association's endeavors and how they can be accomplished (Rifai, 1997). Henry Fayol has characterized planning as the cycle of expectation what the future will resemble with to get ready for what's to come (Fayol, 2016). Business associations right now trying of excellence in execution of planning and looking for best practices that will empower them to adjust to all factors not only nationwide but also worldwide and to nearby levels, ultimately to find present day innovative advancements in the creation and advertising strategies such as to transform the school management to completely digitization. Moreover, it would help to face the inside and outer rivalry, and accomplish the targets of endure, survival and development.

Organizing: The second significant capacity of the organization which is inborn during the time spent planning and drawing out goals of

organization and identical in significance is association and organization of exercises and activities. Getting organized is an element of the way includes distinguishing the exercises to be performed to accomplish objectives and reaching the destinations, and recognize the people who will actualize these exercises, in order to appoint a specific movement to the individual who adjusted capacities with the prerequisites of action and decide the places of intensity and duty, techniques for management and coordination of exercises, nevertheless building the authoritative structure that shows who does what, and who is answerable for what, and so forth the outcomes to be accomplished (Hafez and Wabb, 2007).

Directing: Directing is an important function of management in coordinating and influencing the conduct of people to guarantee and ensure their endeavors and attentions are made on achieving the intended organizational or personal goals and objective. It also includes comprehension of the idea of human motivation and their conduct, communication, inspiration, authority and correspondence (Hughes, 1993). Pandemic has caused a

Controlling: Overall control can be characterized as the process toward estimating and adjusting the presentation of doled out exercises of subordinates so as to guarantee that the objectives of the association and plans that are intended to contact them have just accomplished (Public, 2009). It also helps managers in making decisions therefore, is very significant of the primary exercises of the heads of managers as this process incorporates a decision between choices, they are life saver of any association, and if this course quits working existence of the endeavor went under danger.

Education for digital transformation encompasses managing change. School leaders include managers, directors and administrators who are responsible for managing tasks and challenges associated with reorienting education to address sustainable development goals; changes that must occur in the school system (Mckeown, 2013). According to Hopkins and Jackson (2003), a “leader is a critical change agent, the guardian and facilitator of transitions” (p. 101). The Organization for Economic Cooperation and Development (OECD) (2008) also stated that school leaders could transform schools to accommodate digital change. Therefore, the success of revamping education to tackle challenges in digital transformation for attaining sustainable development goals rests on the shoulders of school managers (Mckeown, 2013). Hence, the advancement, communication, and implementation of digital transformation vision should be among the school leader’s most important tasks. For the sake of attainment of educational goals in the long run, this paper aims at realistic expose of challenges during digital transformation for an effective and supportive educational modification (Hopkins and Jackson, 2003).

Concept of E- Management

Toth specified the importance of digital transformation in his words as digital transformation is not a fast process in the management of education (Toth, 2020). Digital management was defined well Kane as well in these words, digital management actually is a process that brings people together and helps achieve organizational goals. Just similar to traditional management system electronic or digital management comprises planning,

organizing, staffing, leading or directing, and controlling furthermore it is an effort that supports in accomplishment successful desired results through the implementation of information and communication technology, handling of finances, and all other types of resources including human and natural. (Kane, 2019, p. 44)

Electronic Management makes external and internal organizational environments more flexible and also shares its effects positively on whole organizational system. The successful use of digital management system for a small enterprise in an emergency depends on understanding and addressing the adaptation of factors and challenges facing the existing executed electronic management and learning system (Almaiah et al., 2020). In an attempt to investigate more about these factors and challenges, Almaiah classified the challenges that affect the actual use of e-learning into four categories: management challenges, technological challenges, and implementation challenge and cultural challenges. Almaya et al. (2020) also identified other findings of critical challenges facing the use of e-learning system during the COVID-19 pandemic, namely change management issues (Almaiah et al., 2020).

This meets the need for a definition called innovation strategies in education infused with technological advancements “defined as commitments to improving or using new management, teaching and learning practices” (Ratten, 2020, p. 758). Many authors stated that well-defined and implemented strategies of technological management lead to sustainable management (Coulter, 2008). This concludes that it is crucial for managers of educational institutions to develop an effective strategic plan that will prevent a crisis

or reduce its impact if it occurs (Wang and Hutchins, 2010).

Emergent strategies are developed through active experimentation, learning, and modifications (Fenech et al., 2020; Lynch, 2018). Furthermore, it has been mainly observed that emergent strategies are further developed through experience and thus building expertise. In fact, according to Fenech et al (2020), participants with previous experience in blended and online learning described how these experiences helped them in the process of adapting to a new management strategy could be entirely online (Fenech et al, 2020). Other participants also had existing experience using a few online tools within a face-to-face teaching environment, which they also described as useful in times of emergency lockdowns of the pandemic or floods, earthquakes, wars or other emergency situations (Wang and Hutchins, 2010).

Further they explained the functions with the significance of disciplines of administration with the shift from non-electronic management functionality to E-management: Creation of electronic fabric of production, human resource, marketing, accounting, financing and research and development center, reliability on data bases and software's, shift to an instant processing system, offer of direct coordination between client and server (system), Propels Teamwork rather than individuality and a flexible environment structure (Ellatif, 2013).

However, also they enforce the importance of process of the educational goals as skills that are embedded to twenty first century those include research based learning convention should be introduced, learning of the content, thinking critically can communicate

confidentially and solve problems individually and able to produce and create. Burke (2004) proposes four points in favor of digital school system as - Experimentation and Feedback; plenty of resources; automation and efficiency; life skill development.

Impacts of E- Management

Chuck Martin (1997) in his book *The Digital Estate* about the Traditional System of Management states

“Traditional organizational and management systems do not scale well now as they have proven monotonous, slow, red-tapped and inefficient, Whereas, a digital management system simplifies managing work and supports start up behavior regardless of corporate size to measure and increase the value of work” (Martin, 1997, p. 141).

Therefore, it seems that digital management facilitates and simplifies management of work. It improves accountability and engagement and helps to solve problems in a speedy way then a traditional management system where so much paper work and documentation needed.

Basak stated in an article that learning through electronic or digital media is most sophisticated and advanced way to approach learning through distance (Basak, 2018, p. 206). Dorothy E Laidneren forces the importance of technology in her paper about the usage of Information Technology to enhance school management writes about the significance of digital management that information technology plays an important role in providing improved operations that can be further rely on conventionally (Alavi & Laidner, 2001). Digital learning is actually another form of distance learning and electronic management is sophisticated

way of managing organizations digitally.

The managerial function as given by many management intellects and researchers comprises of some significant and important functions. Implementation of all the managerial functions leads to proper functioning and a harmonized steady work place (Erdem, E. 2012). Consequently, implementation of all functions helps achieve intended organizational and individual goals in a market of competition. Therefore, the discourse of managerial functions is actually the talk about given functions (Rawash, september 2015).

Dede responses were divided into five functions of management: planning, organizing, staffing, leading (Directing), and controlling. (Dede, 2011). The planning function of management is focused on activities such as a sequential strategizing and goal setting. The organizing function is concerned with organizational design, division of labor, working relationships, etc. The staffing function is primarily concerned with talent recruitment and retention, as well as training and employee development. Leading refers to the ability to create and demonstrate organizational culture, delegate tasks, and responsibilities, and make decisions. Finally, the controlling function refers to performance evaluation, and if necessary, corrective action.

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Monica Manzilillo in her article Teaching Literature through online discussion in theory and practice states that the traditional mode of teaching at schools at secondary level, the lecture, is not suitable for carrying out a teaching modality that requires the direct interaction of students with the literary text. The model which is widely used at universities in Italy and elsewhere is the so-called "tell-them-and-test-them" approach: a series of lectures followed by a final test, with no possibility for students to receive feedback regarding their actual comprehension. According to Yorgen Edholm, elaborates about digitization of management that by reducing managing just 1% per quarter, an organization can improve productivity by 4% per year (Edholm, 2019).

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talk about given functions: In past, the problems in technology implementation in education have been addressed largely in America as per report of School Education Department of USA in 2010, whereas, problems of school management transformation to its digitization are not discussed with regards to the issues and problems faced by functions of school management (in emergency lockdowns) i.e. school's infrastructure, personnel capacity, finances, direction, communication, monitoring and delivery mechanism.

Problem statement

As there is a reprehensible diversity in structures, standards and functions of schooling in the area, therefore, some of the schools could manage the change in terms of digital transformation of school management easily but some of them could not due to certain inescapable circumstances and challenges. This study was conducted to identify various challenges in different schools and also to identify successful strategies to cope with these challenges. Final term exams were continuing at school level, when government announced lock down on 24th March 2020 due to prevailing danger of outbreak of COVID-19. In Pakistan, most of the schools' officials had to cope with this situation of uncertainty whether exam are going to happen in time or not. Yet, school administrations decided to transform the system from traditional face-to face school to digital operational school. The decision raised the challenges for the school management for switching between a different mode of management for the online learning. Questions raised to look into the challenges are what sort of challenges faced by different schools, how different schools had handled the situation? How the

situation varied school to school at all levels of managerial functions? The challenges faced by the schools working under Public, Private and Semi Government sectors in District of Sargodha were proposed to be studied in. In this district there is large variety of schools and many of these are less facilitated with technology compared to other advanced districts. Moreover, the problem was of the nature that was to be studied and analyzed deeply where and what were the challenges as well as how some schools have successfully faced the challenge of transformation of in-person conventional way of management digital and online mode.

The objectives of the study were to:

1. identify the Challenges faced by Schools while digital transformation of schools from traditional to online learning.
2. find the measures to cope the challenges.

Research Methodology

The study was conducted with Sequential Explanatory Design of Mixed Method Approach Sequential approach helped in multi-phased research study that required an analysis of findings of first stage of the research that later helped develop and inform for the second stage discussions in order to find out remedial measures. (Clark, 2015)

The study was carried out in Sargodha District which is one of the eight divisional headquarters of Punjab Province. The city has many public and private schools of all levels. Many local and international private schools are functioning to provide international standards of education to the people of Sargodha. Urban area of the district is comparatively small to rural one. Therefore, students coming to public and private schools mostly belong to rural background. Yet, in the city

mostly population is of feudal and landlords so, international schools are established as they are affordable to the people of Sargodha. Other than international ones there are many street schools are established as independent school systems providing education to all classes of the area according to their affordability. Many schools in the area had conducted online classes, schools can be characterized by their quality education provision and curriculum selection.

Participants of the Study

This study involved a preliminary descriptive examination of the perceptions and experiences of the school heads, managers and administrators who were engaged for the responses through personal relations approach. Two respondents were selected from each school, one was the head/principal of the institute and other was the administrator. School selection had been through as follows:

- One was private schools form Franchisee,
- One Foundation School,
- One Charitable School,
- One Independent School,
- One Semi Government School and
- One Public sector school was selected from Government of Punjab.

Instrumentation

Appropriate tools were developed for each stage of the study to incorporate with the requirement of the study. Challenges were identified with the help of checklists and elicited interviews while strategies were drawn out of protocol of focus group discussion.

Tool 1: A checklist was developed to collect basic data under the research question 1.1

Checklist is a check mark list that is selected by researcher through a

list of words, phrases, sentences and paragraphs on which observer registers and records a mark to denote a presence or absence of whatever is being observed and ensure the consistency and completeness (convenient for participant to response in a short time) and easier for the researcher to draw out the conclusions and organization of findings (Kaynat, 2017). Checklist considered to be a significant tool for this study in gathering facts for this educational research in getting facts about the challenges of the school management while transferring their traditional management to Digital/Electronic management. Instead of judgmental responses checklist would demand the factual responses regarding challenges. Tool 2: An interview protocol was developed to address the research question 1.2 – 1.6

Elicited Interviews were conducted in order to draw out the underlying facts through elicited questions to get a comprehensive ground for the Stage 2.

Tool 3: Protocol for FGD was developed for addressing the research questions 2.1-2.4

Protocols were based on the analysis of first stage data. After identification of challenges through first phase of cross analysis of interviews and checklists, a document for different strategies used by heads was developed. For the sake of getting in-depth understanding and identification of strategies, a Focus Group discussion was conducted with 6 principals. Selection of participants for FGD had been based on most challenging and best practiced individual within the sampled schools of stage 1. Discussion in FGD had been about strategies and about the remedial measures they had taken to face with challenges of digital transformation.

Data Collection Procedure

This is a mixed-method study in which participants sampling had been mostly purposive keeping a specific criterion in mind. It tried to find theoretical applicability along with quantitative representation due to triangulation of the data. It also sought to apprehend the range of views/experiences pursuing saturation of data. According to Cresswell (2013), triangulation is collecting data over different times or from different sources. The process involves corroborating evidence from different sources to shed light on a theme or perspective. Triangulation is the practice of obtaining more reliable answers to research questions through integrating results from several different approaches, where each approach has different key sources of potential bias that are unrelated to each other (Lawlor, Filling & Smith, 2017) Cohen and Manion (2000) define triangulation as an attempt to map out or explain more fully the richness and complexity of human behaviours by studying it from more than one standpoint. O'Donoghue and Punch (2003), mention triangulation as a method of cross-checking data from multiple sources as done in the research with the help of statistical checklist data with descriptive data of head of institutes and with admin administrators interviews that helped to authenticate the data. Data were collected from different sources (School Managers; Project Heads and Admin Officer) on the same topic not only to authenticate the responses but also to gain good understanding from different perspectives. It also helped to cross-check the data and increase the knowledge of the researcher about something and strengthen his standpoint from various aspects

Data Analysis

Data collected through checklists were presented in frequency tables. Thematic analysis was used to analyze the interview data. This analysis method comprised of five steps, namely, transcription, checking and editing, analysis and interpretation, and verification (Sarantakos, 1998). The researcher transferred audio recorded data onto paper and read it time to time to get an idea of what the data were about. The data were divided into smaller related (meaningful) units. This was achieved by reading each paragraph and recording the themes in every paragraph. Similar themes were then grouped together to make related units. Focus Group Discussion had largely raised group dynamics to give insights of participants along with healthy real-time benefits in the form of their feedback for achieving developmental goals of schools digital management. This was achieved by using the researcher's understanding of the themes that were presented. The differences and similarities, between the different interviews were identified, allowing typologies to develop the themes. The author summarized the units in the order that suited her, by dividing them into related paragraphs. The differences were also grouped into individual paragraphs. Validity of the data was checked by going through the transcripts again and allowing colleagues, to read it as well, to validate the findings. The central theme was then obtained

Findings

First school had executed the digital management and online learning with 412 students and 26 teachers and 9 members of managerial staff including Principal, admin, admission and Public Relation and finance officers with superintendent, accountant and a junior

clerk along with other schools in the same way. Data of physical infrastructure is represented in tables 3-7.

Statistics shown in separate categories are as under:

Table 1No. of available computer systems installed in ICT

Responses	School 1	School 2	School 3	School 4	School 5
No. of available computer system installed in ICT	30	23	40	51	16
No. of Systems connected to the internet in ICT lab at the time of lock down.	27	20	23	51	16
No. of students using online communication at the time of lockdown (Approximately)	375	250	-	1000	350
No. of students using online communication during 2020-2022 (Approximately)	400	400	-	1400	500
No. of IT trained teachers at the time of lock down	2	3	1	8	2

Table 2 Challenges of planning at sudden closure of the school

Sr. No.	Challenges Evolved denoted as Subthemes	Evidences/excerpts from respondent's data
1.	Delay in Planning. Later pre-planning stages happened frequently	After a closure of a week, head quarter in Lahore decided to take an initiative of student's studies continuation through cell phones and executing all management activities electronically. Higher management had firstly decided to call management in offices and just to open offices for fee collection later head quarter in Lahore decided to take an initiative of student's studies continuation through digitalization School Heads kept coming and decided to start connecting electronically to resume the functioning of the school after confirmation of prolonged social distancing. There was no response for two months in government sector for lock down and start of any online classes just the order received to close the schools.
2.	Lacking Expertise, Difficulty in new planning and new objectives of sudden Switching School Activities Through digital media (Deficiency of Skilled Personnel)	Initially seems the possibility to do management tasks while sitting back at home was difficult initially, School management got the plan from the Board of Director's (BOMD) meeting agenda to suggest the alternate ways of management including digital transformation of the management. We had respond on the basis of our observation and search on internet. There were no any experts available immediately to plan for a new strategy of management that is to do through digital media as this practice never being in vogue in Pakistan at local level. Help is taken from internet to explore the working and methods from already working institutes and researchers.
3.	Real-time coordination seems hard of the new planning	Management has struggled to support and coordinated to all workers, stakeholders including teachers, Students and parents to implement new strategy of online learning while all the available resources were utilized in a very optimum way yet there remain uncoordinated workers many a times that caused the disturbance in continuity of the work.
4.	Difficulty in approaching the employees and the learners	Government employees were not available for the online mode of management.

Table 3 Challenges of Budgeting for Digital Transformation

Sr.No.	Challenges Evolved denoted as subthemes	Evidences/excerpts from respondent's data
1.	Budget Control	Budget control had been a problem as allocation of immediate money was a problem but later on all paid and purchased. Resources were not enough and at a sudden, employees were asked to use their personal cell phones for official working as an unanticipated allocation of the budget wasn't possible to buy new gadgets and to update ICT instantly.
2.	Financing for extra payment to staff and teachers	One of IT teacher has taken the workshop to train the teachers for the use of zoom app and google class rooms and then teachers were all set to use these apps. IT teachers had been taken into account to help other teachers to develop the recorded lessons with extra payment for the services.
3.	Scarcity/Ornate ICT	ICT lab was in the school but not as functional as the requirement for a digitally organized management.
4.	Training of the Human Resource	We used existing teams to work with instead of hunting of outsource as they all were already there to take the responsibility. One of IT teacher has conducted the workshop in school to train the teachers for the use of zoom app and Google class rooms and then teachers were all set to use these apps. IT expert had been taken into account to help other employees to develop the technical and digital skills to manage and develop recorded lessons.

Table 4 Challenges of Directing during Digital Transformation

Sr.No.	Challenges Evolved denoted as Subthemes	Evidences/excerpts from respondent's data
1.	Complexity of conveying Instructions	Some of the employees and learners felt difficulty in understanding the system of digital transformation and personally, they had been in contact with the authorities all the time. Directions to teachers and students were given through media communication due to strict compliance of SOPs. Initially, Slowly and gradually, all were able to take instructions.
2.	Slow pace of Compliance and Adoption	Parents were not ready to give their cell phones to their children, but later, through proper counseling, they provided. Secondly, all the students were not taking the online classes and if a few students were taking they were not regular. Yes, students were at the peak of their self-motivation level.
3.	Skeptical behavior of Employees	They were afraid of the new situation and system due to uncertainty but afterwards, they were trained enough to pursue with online mode of education. New situation had created uncertainty that had created perplexity in the minds of the workers of the rate of success of the new system of digital transformation.
4.	Work load stress of Heads and Managers	School Head had been coordinating through directions that how the next task should be done.

Table 5 Challenges of Implementation of Digital Transformation at Sudden Closure of the School

Sr. No.	Challenges Evolved denoted as Subthemes	Evidences/excerpts from respondent's data
1	Uncertainty and unacceptability in the digital mode of management	Acceptability to work under new condition was hard to accept, reason might be uncertain situation of COVID-19. Government employees were not even available for the online mode of management.
2	Non-availability of Resources and Man power	All the manpower was made available and used in a befitting way and problems of non-availability of resources; learners, parents and technology etc. were eradicated slowly and gradually. There were not enough resources to conduct the digital transformation at whole organizational level.

Table 6 Challenge of Availability of Resources during Digital Transformation

Sr. No.	Challenges Evolved denoted as Subthemes	Evidences/excerpts from respondent's data
1.	Scarce Resources of ICT	ICT lab and computer systems and other gadgets were less or some were non-functional that created a problem for the management to fix and rectify it up timely. Hence management was able to arrange the needful. Some organizations had to arrange the systems from their other non-functional institutes due to blockage of ways, new system were scarce in the market and market remained mostly closed. Fees were not collected properly as parents were centrally proposed for a less fee structure and some of them have even discharged their wards from the schools. Financial crises was even had been another constraint to manage the budget of the school.
2.	Scarcity of Finance	Technical problems with gadgets and training of the teachers for the online impartment of the knowledge had been a great challenge at initial stages.
3.	Availability of ICT Trained Human Resource	In the beginning, parents were not ready to pay the fee due to economic and financial crises at international level.
4.	Collection of Fee for the smooth flow of budget	

Table 7 Challenges of Communication during Digital Transformation

Sr. No.	Challenges Evolved denoted as Subthemes	Evidences/excerpts from respondent's data
1.	Interrupted Power Supply	Load shedding had been a big trouble area that caused interruption while processing of digital management.
2.	Internet Dis-connectivity	Internet connectivity interruptions cause continuity and delay problems
3.	Staff living in remote and far-fledged areas	Some of the employees and workers were living in such remote areas where there was not an internet connection. It was hard to approach them in the beginning.
4.	Government of the employees	Employees, teachers and staff had to call to the hall of the school for their up skilling for digital transformation by a trained skillful hired trainer.

Table 8: Challenges of Monitoring during Digital Transformation

Sr. No.	Challenges Evolved denoted as Subthemes	Evidences/excerpts from respondent's data
1.	Disturbance in Hierarchy/Chain of command	New system of management had made all the employees manage their tasks. Employees monitoring had gone to self-disciplinary actions. Anyone, if not working properly, was very late informed by the recipients that caused the problem of late monitoring and response.
2.	Management got burdened	Head and admin officers had the highest responsibility as they had to communicate through calls to all the staff, teachers and learners 24/7, answering the queries and difficulties of all. Definitely, there had been difficulty in processing the system smoothly due to in-person availability of the employees rather to look them through digital media was a hard task. To make sure, feasibility and implementation of digital forms of management and teaching, project lead had to be connected with Vice Principal, Superintendent, junior clerk teachers and in touch all the time to all the stakeholders. Admins had to be available all times for rectification of the problems of employees.
3.	Accountants had to leave their offices in order to collect the fee-deposit monitoring	Fee collection had been a big challenge as accountants and superintendents were made responsible to stay on a specific point out of the school for the vouchers provision to the parents. Then, they had to report to the admin for the fee submission status of fee and likely report of the parents towards the digital transformation.
4.	Electronic Monitoring	For proper process of electronic monitoring, all the employees were given instructions to be monitored by the coordinators and coordinators were responsible to look after their respective group of classes. Coordinators had been directly in contact with their subordinates and also the parents of the learners for avoiding any deviation from attaining the goals of digital transformation.

Findings

The findings of the study aimed to identify the challenges of school digital transformation in Pakistani schools by digging into the root causes and factors

hindering the electronically managing work and digitalized embedded management and learning culture in the country. Different views were identified during the study of five different schools, initiating the digital transformation and facing the challenges in implementation, promotion and execution of digital management culture in Pakistan.

Availability of physical facilities

As all five schools were varying in the facilities of the resources for digital management as mentioned in Tables 1 showed the selected schools were having varied background including an independent school, a franchise, a school of foundation, chain and one from a public sector. The survey showed that the resources facilities were available as per the interest and involvement of a venture in providing the education to the nation.

Challenges of school management

Result of action plan of the study highlights the answers to research questions about the concerns of the school managers and administrators regarding how were they able to plan for the new planning for digital transformation in a rage of emergency. For this purpose of the study, a total of 7 themes and 28 sub themes emerged from the heads and admin officers' interviews as mentioned in the Tables 2-8 Themes were: of Challenges of pre-planning and planning, Implementation and execution of planning, Budgeting challenges, challenges of Directing, Challenges of scarce resource availability, challenge of communication and coordination with all employees and stake holders and last theme emerged as the challenge of monitoring. The themes were followed by sub themes: Delay in Planning, later

pre-planning stages happened frequently, Lacking Expertise, Difficulty in new planning and new objectives of sudden Switching School Activities through digital media, Real-time coordination seems hard of the new planning, Difficulty in approaching the employees and the learners, 24/7 Availability and Attendance of Management and Admin was Compulsory, Uncertainty and unacceptability in the digital mode of management, Non-availability of Resources and Man power, Budget Control.

Financing for extra payment to staff and teachers, Complexity of conveying Instructions, Slow pace of Compliance and Adoption, Skeptical behavior of employees, Work load stress of Heads and managers, Scarce Resources of ICT, Scarcity of Finance, Availability of ICT Trained Human Resource, Interrupted Power Supply, Internet Dis-connectivity, Staff living in remote and far-fledged areas, Up skilling of the employees, Collection of Fee for the smooth cycle of budget, Scarcity/Ornate ICT, Training of the Human Resource, Boosting Motivation through provision of Internet charges along with payment of full salary, Disturbance in Hierarchy/Chain of command, Management got burdened, Accountants had to leave their offices in order to collect the fee-deposit monitoring, Electronic Monitoring.

School 1 was a part of an international chain of school that had been supportive towards its employees in all aspects i.e. providing physical facilities for digital management execution to its staff. Challenges school had faced were of realistic level as its staff and teachers were highly trained but digital technological training they were provided with at the time of digital transformation while teachers, parents and students were all

supportive in adoption of procedures and paths for the digitization.

School 2 was a foundation school who had to face the challenges of both physical facilities challenges along with the challenge of problems of all its stakeholders. Foundation school lacked behind in its budget and finances as it already cost less fee to students. Technology harp people needed as existing staff was trained for the traditional management system.

School 3 was a public school where the digital transformation was executed at a minimum level due to uninterested staff and unrealistic planning. Therefore, this school initially couldn't execute digital transformation of school management due to challenges of planning and pre-planning stages.

School 4 was with a proper planning, curriculum development, teacher's training wing that had taken abrupt decisions to execute the digital transformation on all levels of the school and its management that is why their challenges of digital transformation were less as compared to the other schools in the study.

School 5 was a franchise that depends on the decision of the sole entrepreneur. It had also taken some steps to execute digital transformation in order to avoid students' drop out of their school.

Proposed Remedial Measures to overcome the Challenges

The second purpose of the study was linked to the remedial steps the school managers had taken to face the challenges they had gone through at the time of digital transformation enforced at the time of emergency closure of the schools due to COVID-19. Stage first analyzed data were put in front of the personnel from the schools as participants of the study for the Focus Group Discussion which

included all the challenges faced by school principals and managers during digital transformation. Later on, after the whole discussion, remedial steps shared by them and had been drawn out by a protocol set for Focus Group Discussion with six Principals of the schools who experienced and executed digital school management successfully. Themes of Remedial steps for planning function of management were drawn as Modification of Objectives according to the new mode of management that is digital management, Realistic Pre, Interim, Short-term and long-term Plan for the Digital School Management,

Tracking on remedial path for facing challenge of communication and coordination, discussion with all employees and stake holders had projected the sub-themes which are the forms of remedies to the situation included Development of an operational software of digital school management, Training of existing Staff and workers, Induction of skilled personnel of Digital Management, Purchasing Technology aligned advance purchase of gadgets and machines, establishment for a purchase committee in order to look into fair purchasing and for rectification of audit objections

Remedial steps for Budgeting challenges included Especial Budget allocation especially for school education department for digital transformation, Increments in salaries and offering other benefits to the staff and teachers. For proper Implementation and execution of planning emerged as to Plan instructions according to level of understanding of all stake holders in education system, Training of all human resource through making them realize the importance and need of Digital Transformation in Modern world, division of work load and

assigning of tasks among all departments not just to the Heads, Admins and Principals.

Remedial steps for Challenges of scarce resource availability suggested to have Assurance of providing full resources of ICT and Trained Human Resource, Uninterrupted Power Supply, Back-up of Power, Provision of a speedy Networking system, Up skilling of the employees, On-line digital system of Fee-Collection, Distribution of Job Duties through a proper Hierarchy/Chain of command, Allocation of a school representative in all remote areas, Multi-tasking, System of Electronic Monitoring.

Conclusions

The school management realistically reaches at a point of realizing the significance of digital school management after facing the challenges and getting rid of them through the remedial steps they had taken to eradicate the challenges and to get effective outcome of the digital transformation of school management. The study revealed the challenges of all managerial functions of management when digitized including Challenge of availability of physical facilities in schools including ICT labs with computer systems to initiate the digital management. Research findings revealed clearly that there were fewer labs in private school while chain, foundation and public schools had a set computer labs. Challenge of unavailability of skilled personnel and manpower for execution of digital management had faced by the school management. Challenge of planning is faced by the school management at planning stage. Difficulty in approaching the employees and the learners had been a great challenge for the online mode of management for that school management had to be

dedicatedly available throughout. Implementation stage had to face many challenges of digitization of school management due to unacceptance of an uncertain situation, a sudden change of the system functionalities and non availability of resources of digital transformation and manpower at the time of sudden closure.

Financial constraints also appeared to be a great challenge for the school management as school budget plans for that fiscal year were not included the budget and finance for the digital resources. Schools' management had controlled the monetary system effectively after facing great challenge of lack of funds for the digital transformation as they had to pay extra to their staff for training and for the sake of usage of their internet packages. In addition to all challenges, motivation to their employees had been a great challenge that is done by offering the staff extra packages along with their salaries specifically for ICT trained staff. Directing is an important function of management interconnected with rest of all functions for the smooth running of the circle of management. Complexity of conveying instructions was a big deal for school managers as new management system of digitization was hard to understand by the employees who were not ever aware of the digitization in a state of hurry and emergency. Therefore, workload and slow compliance of instructions had made the employees skeptical.

Challenge of scarce resources of physical facilities had troubled the digital transformation of management of school as created problems for collection of fees due to school and a bank closure that was important part of school budgeting for allocation of purchasing new resources that later caused fewer funds for allocation for

the new purchase. So, the financial crises had been a constraint to manage the digital transformation. Coordination and communication of all stakeholders is the key element for a successful management of a venture. Study showed that all schools were closed due to lockdowns, challenges of communication caused lack of coordination due to unapproachable remote areas among the stakeholders led to challenges for the school management. Challenge of Monitoring happened due to disturbance in the hierarchy and electronic monitoring as the employees were not aware of their responsibilities and job description according to the new mode of management that was digitized and the workers were not trained for that system.

In addition to challenges, the study had established that there are many benefits of digital management of school that can incorporate with the already prevailing benefits of education system i.e. Digital Transformation increases the work efficiency, operations and delivery and offers speedy workflow in real time, people are more organized so time consumption is less, brings awareness in a speedy way, make people a good human being, knowledgeable, produces a flux of creative minds in less resources and school management can implement and execute digital transformation through keeping some important steps in consideration. Digital transformation in education system is less explosive by minimizing the paper cost if E-offices and E-management is operational in place of monotonous manual tiresome works. The burden of education in case of digital transformation is shared only on the cost of networking and CAPEX (Capital Expenditure) budget expenditure instead of OPEX (operational expenditure) concurrent

budget that cost a lot in buying realms of paper, printers and then later the cost of their maintenance charges. Digital Transformation of schools also allows calculating the finances speedily, accurately and regularly. Digital Transformation also creates the job opportunities for the graduates in Information Technology. Digital Transformation also helped to draw out the psychological and cognitive problems of the students that create hurdles in their learning through Artificial Intelligence. Their problems wouldn't be hidden anymore from the school management and through embedded digital learning process for all the students would create uniformity and would allow implementing easily Single-National Curriculum.

The need for on-campus and off-campus digital management was stressed by almost all respondents to hit benefits and to facilitate the digital management. Government authorities may be convinced to generate Digital Management School System at National level for all private and public sector schools without any prejudice. Almost all of the participants acknowledge and admit the importance of digital management and its effects and benefits and favour to continue the practice of digital school management due to a variety of benefits already achieved. There may be a need to break conventional systems of school management by taking the full advantage of scientific and technological advancements in order to make the school administration more effective, efficient and advantageous to the society as per the study chain schools were able to perform better during in school management and recommended that Public Schools, Foundation schools and street schools may take initiative embed to a hybrid updated and upgraded from traditional

system of management to digitally transformed management due to its better work and workforce facilities, as per the research findings, to be with the developed modern world of Technology. That would create more opportunities to all types of the schools around and would support the School Managers and learners complete their education independently. There is an immediate need to bridge the gap between the Conventional and Digital Management by digitizing the school management. We also come to a conclusion that there is a great scope for promoting Digital Transformation in Pakistan's Schools to make them efficient, future-oriented and self-reliant.

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