

Investigating the Need for Inclusion of EdTech within the Secondary Education System in Pakistan.

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Abstract

During COVID-19, the education sector shifted to ERT (Emergency Remote Teaching) which raised issues of accessibility and learning. While many private and semi-private schools and colleges shifted to remote learning, various questions were raised about the quality of education provided at this time and also about the learning loss of students accessing public schools which remained closed for a majority of the time. On the other hand, Pakistan's EdTech sector, in recent years, has shown steady growth but there's no framework to streamline its inclusion in the traditional schooling system. This research aims to ascertain if EdTech be incorporated within the Secondary Education System in Pakistan to create sustainable models of (both online and in-class) teaching & learning. The study aimed to find if present-day issues, challenges, and trends that are persistent with teaching pedagogies and learning experiences, can be mitigated through the inclusion of EdTech within the traditional schooling system, and if the traditional education sector and EdTech be

brought together to make education innovative, fun and sustainable while also adhering to the already present curricula that are being taught in secondary schools, through policy intervention. This study relied on primary and secondary methods of qualitative data collection from educators and students in low to middle-income secondary schools present in Sindh along with ed-tech founders/staff who are re-imagining and disrupting the traditional framework(s) and perspective(s) around teaching and learning in Pakistan. It was found that there is a growing need for technology, specifically EdTech to be incorporated within the education system with the possibility of improving the system, however, structural barriers exist that need to be addressed at both the supply and demand end such as availability of infrastructure and resources, training of teachers, and investment of capital or formation of partnerships to liaise with local EdTech companies.

Research Context

As a result of COVID-19, most schools in Pakistan were closed for nearly 11 months, uninterrupted (UNESCO & UNICEF, 2021). It is estimated that the needs of 46 million children were impacted as a result of the lockdowns imposed by the Government of Pakistan in March of 2020 (UNESCO & UNICEF, 2021). As per the Pakistan Economic Survey 2019-20, enrollment in secondary schools is calculated at 43.28% (finance.gov.pk, 2020) — a number which is expected to have taken a hit due to hurdles imposed by COVID-19. Reports assessing the impact of the pandemic on students show that most students have struggled to continue learning during the pandemic, many have suffered substantial learning losses, and close to a million students will not be returning to

school as a result of economic hardships during the pandemic (World Bank, 2022).

A quick overview of the government's policies during the pandemic shows that there are large disparities across provinces and regions (UNESCO & UNICEF, 2021). For the most part, government-run secondary institutions remained closed during the lockdown, and the majority of students suffered learning losses for approximately 11 months (Ejaz, Khaliq & Bajwa, 2021). Low-income private and semi-government schools initiated operations a month after March 2020 through distance remote learning, however, as reported by Pakistan Telecommunication Authority (PTA), only a handful of students had access to uninterrupted

distance learning (UNESCO & UNICEF, 2021). As per PTA, only one million school-age children have regular access to a digital device and the bandwidth to access educational content (UNESCO & UNICEF, 2021). Further, the Pakistan National Education Response and Resilience Plan for COVID-19 laid out a plan at both the federal and provincial levels to tailor responses so that the learning loss of children can be reduced. The main initiatives as a result of the plan have been the emergence of the Teleschool (an education TV initiative) and a Radio School (that broadcasted educational content for four hours every day). However, data regarding the efficiency of these initiatives and if they've had an impact on students' learning is amiss. While the government has been making efforts to digitalize education, there are several hurdles the education sector in Pakistan faces, such as a lack of data on how distance learning services are being used; a huge disparity between rural and urban areas; disparity among student groups due to gender, ethnicity, and socioeconomic backgrounds; and lack of digital services hindering students' access to education remotely (UNESCO & UNICEF, 2021).

Against this background, it can be ascertained that the overall educational landscape in Pakistan is in severe need of reform when it comes to digitalizing education. While access to quality education was an issue highlighted during the pandemic, the rise of Ed-Tech Start-ups in the past few years in the country has signalled a potential shift in the

educational environment.

Ed-Tech start-ups are a recent phenomenon in Pakistan. Currently, the Ed-Tech space can be classified into two groups; B2C (Business to Consumer) Start-ups which include educational apps such as Maqсад, EdKasa, Noon Academy, Taleemabad, etc; and B2B (Business to Business) Start-ups which include Knowledge Platform and Educative. The main difference between B2C and B2B is that B2B deal only with schools whereas B2C deals with students, teachers, and in certain cases even schools. The EdTech space in Pakistan, for now, is focused on creating supplementary material for students at various levels and in various education systems (such as Cambridge versus local boards). However, there is a need to understand to what extent can these interventions work in the overall educational landscape. This research aims to understand if EdTech can be incorporated into the Secondary Education System in Pakistan and if yes, how sustainable and innovative can these interventions prove for the average secondary school student. This is explored through three main research questions; what are some present-day (Covid'19 and post-Covid'19) challenges, issues, and trends within the education ecosystem; can these be mitigated through the inclusion of Ed-tech; and if developing a holistic policy intervention framework help create accessible and sustainable models of teaching and learning in secondary public, low-income, and semi-private schools.

Research Design

The research design was based on qualitative research methods, coding, and analysis. Qualitative data was collected through both primary and secondary sources. Secondary data was collected through an in-depth document and situation analysis to obtain an understanding of the education policies, education policies introduced during the pandemic (if any), and the existing EdTech system within the country's secondary

education system. Primary data was collected through one-on-one interviews and Focus Group Discussions to provide an in-depth understanding of the situation by engaging key stakeholders, including educators, students, and key personnel in Ed-tech firms across Pakistan. Participants were recruited through snowball and convenience-based sampling methods.

A breakdown of the research participants who were interviewed or involved through FGDs is provided below:

- Two FGDs were conducted with an equal number of boys and girls to ensure equal gender representation.
 - Group A: consisted of 4 students (boys) enrolled in public, low-income private, and semi-private schools/colleges.
 - Group B: consisted of 4 students (girls) enrolled in public, low-income private, and semi-private schools/colleges.

Students in both focus groups were based in Karachi, attended grades 9-12, and were aged between the ages of 14- 18.

- One-on-one interviews were conducted with 4 educators from public, low-income private, and semi-private schools/colleges who taught grades 9-12 and were aged between 30-55.
- One-on-one interviews were conducted with a total of 3 Key Personnel from various Edtech firms in the country.

A participant information sheet including all essential information regarding the research project was shared before conducting the research, and informed (verbal and/or written) consent was taken from the participants through the consent form; for minor students, consent was obtained on their behalf from their guardians. To maintain confidentiality and anonymity, each participant has been given a pseudonym.

Key Findings and Discussion

The Education system in Pakistan can be divided into various stages with secondary education having certain distinctive years (UNESCO, 2010). Secondary education is recognized in two parts, matriculation or higher secondary education (Grades 9-10) and intermediate or higher secondary education (Grades 11-12) (UNESCO, 2010). The four formative years of secondary education are marked by competitive exams scheduled at the end of each year which play a pivotal role in admitting students into their universities and professional degrees. Currently, Pakistan has no legal framework that regulates necessary education; however, the National Education Policy (1998-2010) recognizes there is a need to expand the provision of basic education and also promote free education in public schools (UNESCO, 2010).

Overall, key policy documents and legislative bodies that overlook the education sector in the country include the Constitution of Pakistan (in particular article 37b), National Education Policy (1998-2010), Education for All (EFA):

National Education Plan of Action 2001-2015, and Perspective Plan (2001-2011) (UNESCO, 2010). In addition to these, the consultation process for Pakistan National Education Policy 2021 is under process which is expected to lay out a comprehensive roadmap for the country's goals and aspirations relating to education in the coming years, with a focus on integrating technology into the mainstream education system.

At present, Pakistan has some of the highest population growth rates worldwide (Hunter, 2020). Additionally, the country also has a bulging youth population with approximately 64% of the population being under 30 (Hunter, 2020). However, despite the substantial youth population in the country, efforts have not been made to engage this population in the education system and the labour market (Hunter, 2020). To this day, a substantial population of students is out of school with reports estimating that 70% of secondary school students do not have access to schools or education (Hunter, 2020). This figure becomes

particularly problematic when one understands it in connection to employment prospects in developing and low-income countries. As per ACEI Global, it has been estimated that every additional year of education can increase a person's future income on an average by 10% (ACEI-Global, 2014).

The outbreak of COVID-19 has further exacerbated the vulnerabilities faced by the education system in Pakistan. As per a study by the Islamabad Policy Research Institute (IPRI), issues faced by Pakistan's education system are multifield. While a lack of proper planning on part of the government exists, countless social barriers restrict access to education (IPRI, 2014). These issues are further aggravated due to the gender disparity as women's access to education is mostly hindered due to social and mobility constraints (IPRI, 2014). Further, the cost of education is another factor that creates issues in terms of the availability of schools and also the quality of education in public institutions (IPRI, 2014). Pakistan, at present, spends around 4% of its budget on education out of which 89% is spent on teachers and only 11% on development (IPRI, 2014; Faraz et al, 2021).

Essentially, there is a gap in the education ecosystem in the country and while Ed-Tech start-ups have in recent years taken off, there is very little assessment on how can these actually impact the overall education sector in the country and if the interventions even address the issues posed by COVID-19 and overall issues faced by the secondary education system in the country. Particularly in Pakistan, two major kinds of EdTech Start-ups exist — B2B which target schools helping them digitise — and B2C start-ups which have their apps.

Primary research has shown that in terms of challenges facing the secondary education system in Pakistan, the field is extremely unequal with income disparity being one of the primary factors hindering access to quality education. The pandemic has only exacerbated access to quality education. Schools and colleges that shifted to emergency remote learning reported students

had significant learning loss as a result of multiple factors including power outages; lack of resources; disruptions in Wi-Fi services within urban localities; and lack of focus due to the way the education system is structured.

On the educators' end, the response was mixed, educators from B category schools (private and semi-private schools/colleges) were able to incorporate various technological tools to make teaching innovative and engrossing, whereas educators from C category schools (low-income private and public schools/colleges) faced significant hurdles in fully utilizing technological tools either due to their lack of knowledge or lack of bandwidth on the student's end. Besides issues faced during remote learning, a recurrent factor pointed out by both students and educators in terms of the overall education system was that the system was very much focused on rote memorization which didn't necessarily encourage innovative modes of teaching or learning. Therefore, while supplying quality secondary education can be made easier and sustainable through the inclusion of EdTech, there is a lack of structural support. Both students and educators stressed that the curriculum design and how it is examined has a significant impact on how the content is taught and without changes at both levels, the inclusion of external modes might only cause further stress on the financial resources of the schools and the students accessing them.

Lastly, all stakeholders i.e., the educators, students, and the Ed-Tech representatives agreed that there are significant structural efforts that need to be made to truly make secondary education sustainable and accessible. Overall, there is a demand and need for the inclusion of technology within the education system to make it innovative and accessible, however, structural efforts need to be made at both the demand and supply end to include Ed-Tech in such a way that secondary education becomes accessible, innovative and sustainable.

Policy Recommendations

As per our discussion above, the policy recommendations have been acquired after in-depth deliberations and discussions with our three stakeholder groups, the students (the beneficiaries), the teachers (that are at the demand end), and EdTech representatives (that are at the supply end). The recommendations primarily address three institutions; the schools which are responsible for supplying education; the Government educational departments which make education policies and oversee the implementation of said policies; and EdTech firms that are creating products and services.

Overall, structural change and mobilization of resources at both the supply and demand end are essential to create receptivity to EdTech and incorporate it within the secondary education system to provide sustainable and accessible modes of learning for all.

Educational Institutions:

- Educational institutions should take Ed-Tech as an extension of their teaching methodologies, not a replacement, and propagate the use of these technologies through mobilizing teachers and providing incentives.
- Teachers should be trained in conceptual and interdisciplinary materials so they can navigate and make use of EdTech platforms/products — to be done in collaboration with Ed-Tech platforms.
- Encourage the use of outsider resources with regular modes of learning, both at the classroom

and the overall school level such as the creation of flip classrooms where students learn concepts through videos/external resources and memorize and understand them through in-person interactions with teachers.

Government & EdTech Firms:

- Structural changes need to be made at the curriculum design level so it reflects the needs and education standards of the current age.
- Liaisons of government institutions with schools/ colleges and board authorities need to be strengthened to ensure no discrepancies exist when it comes to what is being taught and what is being tested.
- Mobilization of human and technological resources to increase the accessibility and scalability of pre-existing EdTech products to the general school population.
- Regarding receptivity and inclusion in curriculum design, ed-tech representatives should be taken as primary stakeholders in the creation of a framework to address curriculum issues.
- Robust Monitoring and evaluation plan to analyse short and long-term impacts.
- Encouraging public-private partnerships, sponsorships, and CSR to fund frameworks/ collaborations between EdTech platforms and local schools.

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