Sociology & Cultural Research Review (JSCRR) Available Online: <u>https://scrr.edu.com.pk</u> Print ISSN: <u>3007-3103</u> Online ISSN: <u>3007-3111</u> Platform & Workflow by: <u>Open Journal Systems</u>

FUTURE OF JOBS AND EDUCATIONAL FOUNDATIONS IN PAKISTAN: A STUDY OF REIMAGINING EDUCATIONAL DOMAINS Nadia Khan

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ABSTRACT

Pakistan's future job market depends on the innovation and restructuring of its education system. With the emergence of new technologies, the proliferation of automation, and globalization, the demand for a modern workforce with skills such as digital literacy, critical thinking, and adaptiveness continues to grow. Despite this, Pakistan's approach to education remains stagnant, relying on outdated curricula and rote memorization, which does not meet the standards of the international job market. Major issues include the absence of practical training, minimal industrial engagement, and extensive gaps in providing favourable education in rural regions. Pakistan's graduate skill sets are mismatched to the employer's requirements, which results in high unemployment rates among the youth. These deficiencies highlight the need for comprehensive reform in the employment educational setting of STEM and vocational schools and the integration of legislative and entrepreneurial elements for middle and high schools. Furthermore, this article highlights the unparalleled contribution that government-funded and private educational institutions can provide to ensure formulated training to perform these practical tasks. Revamping educational sectors in Pakistan is key to having an able and skilled workforce to tackle a globalized problem. Furthermore, it helps in fostering sustainable economic growth.

Keywords: Pakistan, Education Reform, Job Market, Technological Advancement, Vocational Training, STEM Education, Public-Private Partnerships, Workforce Development, Global Economy, Skills Gap

Introduction

In the modern world, globalization and technological shifts are major changes impacting the global workforce. Emerging technologies, including artificial intelligence (AI), robotics, and automation, are changing industries by rendering certain job functions obsolete while providing new skill opportunities. With economies becoming increasingly interconnected, nations are required to grasp these technological changes in order to remain relevant in the competitive global marketplace. Moreover, the expansion of the digital economy has raised the need for more advanced skills in data science, cybersecurity and digital marketing (Sutherland, 2018). These shifts have been accelerated by globalization which has made global interdependence stronger where nations and companies utilize technology as the means towards economic development (Sultani & Usmonjon, 2024). In the case of Pakistan, the stress to modernize educational systems to cope with these obal changes is significantly high because the young people must be ready to enter the marketplace where sophisticated technical and critical thinking skills are vital (Nasir, 2024).

Pakistan as a country is trying to improve literacy rates but its education system is still not able to cater to the changing demands of the job market. The system still emphasizes rote memorization rather than critical thinking and does not have the capacity to provide relevant modern education (Khushik, 2021). Moreover, most of the educational organizations within the country do not incorporate different forms of vocational and technical training which makes the students' prospects in one of the developed fields - technology, engineering, or even health services - very bleak. The gap between the quality of education in urban vs rural areas makes the situation worse, as rural areas are devoid of the modern educational infrastructure that is available in developed cities (Ejaz & Mallawaarachchi, 2023). Pakistan as a whole is stiff and does not seem to be making drastic tactical adjustments. At this moment, if the educational economy system does not adjust and move toward steps like including coding, data analysis, and even artificial intelligence in education, it could leave a generation of students underemployed. This surely would bring economic stagnation and social unrest, deepening the already dire conditions in Pakistan.

One cannot downplay the relevance of education in the evolution of the employment sphere. Education has a direct relation with economic growth since it enables a person to participate effectively in a competitive economy. It has been established that countries with strong education systems have higher employment and economic growth. However, in Pakistan, there is a growing mismatch between what the education system is producing and what is required by the labour market. The highly qualified and skilled workforce, especially in the contemporary technology-oriented sectors, is needed, but the education system still heavily concentrates on nonemerging job market-oriented subjects (Hazrat et. al., 2023). Determining the most appropriate educational strategies for economic development in a technologically advanced world should accompany changes in Pakistan's educational structure. This article seeks to analyze the range of transformational changes within the education system of Pakistan that would enable the educational system to adequately respond to the challenges posed by globalization.

Problem Statement

There is a wide gap between the existing educational program in Pakistan and the current and future requirements of the labour market. While the world is progressing towards a knowledge-based economy, the educational system of Pakistan still relies heavily on rote learning, which is ill-suited for the modern world. With the focus on technological advancement, automation, digital marketing, artificial intelligence, and other highly demanding practical skills, the curriculum still focuses on outdated ergonomically designed theories. Thus, the resultant graduates are deficient in specialized and desired skills such as critical and analytical thinking, problem-solving, and relevant technology tools. This discrepancy extends beyond the job readiness of these graduates to an overall failure to contribute to the economy which is becoming more innovative and digital friendly.

This gap in education and employment affects Pakistan's economic growth. Pakistan is in a disadvantageous position as its youth is not properly prepared to face the global economy if it competes. The void of practical and industry-relevant curriculum in education ensures that several areas, particularly those that are technology and competitively driven, do not have adequately skilled workers. Such a disparity restricts the nation's economic growth potential because industries are not able to fill their productivity and competitiveness void with labour supply. Students being separated from real life applications to their studies, paired with the lack of strong educational and industrial partnerships also solves this concern.

Objectives

- To understand the nature of nature of Pakistani education system and gaps.
- To find out the possible solutions for future jobs and educational domains' meet up.

Research Questions

- What is the basis of the education system of Pakistan?
- What could be the job scenario in the near future, and which challenges can occur in Pakistan?
- How can the educational system be reformed to meet the future jobs in Pakistan?

Significance of the Study

The present study helps to understand the existing situation of the educational system and the jobs-trauma in Pakistanis. The emergence of new technologies has given birth to the jobs shortage, and attention has been paid to the new paradigm of the educational system so that living standards can be achieved. Through the study, the future directions of job-grab and the need for educational foundation revision can be better understood.

Research Methodology

The present study is qualitative and based on a literature review. Qualitative research is textual description-based rather than numerical description (Gay et al., 2012). The literature review study is conducted based on secondary sources, which include articles, theses, reports, etc. The present study is also conducted to note the nature of the existing issues of educational concerns and is based on previous research studies.

Discussion

• The Changing Nature of Jobs in Pakistan

The job market has changed considerably with the introduction of technology such as automation, Artificial Intelligence (AI), advanced tools, and the increased impact of the COVID-19 pandemic. Routine and manual jobs are being done by machinery and AI, which in turn leads to demand for new positions in data science, machine learning, and programming (Tschang & Almirall, 2021). With the onset of the COVID-19 pandemic, there has been a material shift in the work of the healthcare, finance, and education sectors towards online and technology-enabled formats (Matsieli & Mutula, 2024). Global forecasters suggest that the modern workforce will consist of humans and machines, therefore giving preference to work that requires thought and feeling because these skills are irreplaceable. This

global phenomenon has compelled countries, including Pakistan, to rethink the skills their students will need to flourish in such an environment, and how their education systems can deliver students the skills needed. Pakistan faces this problem, where the gap between the educational system's outputs and the job market's future demands remains ever-present.

The employment landscape in Pakistan is changing rapidly with new forms of technology-based unemployment such as high levels of youth unemployment, emergence of advanced regional and global e-economies, and ICT based remote employment freelancing (Umair, 2024). Historically Pakistan's employment structure was significantly dominated by Agriculture, Manufacturing and Government employment, but these sectors are now rapidly waning (Umair, 2024) along with the growth of information technology, digital services and e-commerce. Unfortunately, the education system is not in tandem with the requirements of these growing sectors which worsens youth unemployment. Simultaneously, the gig economy is growing in Pakistan, especially among the youth who prefer casual, freelancing or short contract jobs. While this phenomenon presents new avenues, it questions the security, welfare, and future employment conditions (Bashir et. al, 2023). The shift of youth into freelancing has increased the urgency for reform in how young people are educated and trained for work relevant to contemporary economic environments.

Since the world is evolving toward more advanced jobs, it is likely that the future job market will seek skills in digital skills, critical thinking, creativity, and emotional intelligence. The increasing dependency on digital technologies demands the workforce to be proficient in skill sets such as data analysis, coding, and even cybersecurity, which have already become fundamental in many industries (Baskoro et. al, 2023). There has been an increasing recognition of the importance of adaptability, teamwork, and emotional intelligence, the so-called soft skills, as people function more frequently in non-unitary, transdisciplinary contexts. For Pakistan, reskilling the workforce for future foreseeable challenges will require a complete pivot in educational approach. Schools and universities should place equal emphasis on academic thinking and creativity alongside developing critical thinking skills in students. Such shifts would require reforming the entire curriculum and enhancing teacher education and industry engagement more meaningfully so that students are prepared to face the challenges posed by a digital and global economy.

• Analyzing Pakistan's Education System

The educational system of Pakistan is facing obstacles that threaten to undermine its effectiveness and relevancy overcoming the challenges posed by the modern, fast paced world. The most critical hurdle is the rigid curriculum which predominantly relies on memorization instead of critical analysis, innovation, or problem solving (Zaman et.al, 2023). Such a methodology, especially in this era, does not help prepare the students to the workforce which requires specific practical skills in various disciplines, such as IT, digital services, and engineering. Furthermore, the exacerbating conditions of insufficient vocational training results in a high number of students lacking the necessary training for specialized technical positions. Disparities in educational access persist, especially in rural regions where skeletal infrastructure, poorly qualified instructors, and scarce learning materials exist creating a stark difference in the education quality and levels achieved between urban and rural regions (Mokhosi, 2023). These shortcomings not only lower educational standards, but also result in high joblessness among skilled educated youth in Pakistan.

The government, private sector employers, and educational institutions consider themselves as key stakeholders that assist in resolving the educational problems of Pakistan. The government is supposed to develop policies for the education sector, ensure that every person has access to education, and provide enough funding for higher education institutions. However, issues like political violence, insufficient budgets, and corruption in the reform processes have worsened the situation. While educational institutions are central to the creation of the learning environment, they still do not have adequate resources or the autonomy to revise the curricula or collaborate with the industries (Chhatria et. al, 2024). The private sector such as educational institutions that offer internships or vocational training and guidance do so, but such arrangements tend to be peripheral and unintegrated in the main educational policies of the state. Consequently, there is often little, if any, coordination between the education system and the economy, thus constraining employment opportunities for the graduates.

It is important to analyze the gaps in Pakistan's educational model in comparison to global systems which have achieved successful outcomes. Countries such as South Korea, Finland and Singapore have successfully developed models in which equality, a good standard of teaching and industry requirements are all met (Peña et. al, 2024). South Korean integration of technology in education resulted in the production of a highly skilled workforce that is competitive in global high-tech markets (Lee &

Choi, 2024). Students are taught the importance of self-care, critical thinking, and having faith in their teachers in Finland, and due to this Finland is achieving some of the highest outcomes in education globally (Matyoqubovna et. al 2024, April). Singapore's education is also deeply rooted in economic needs wherein strong vocational pathways are provided along with the fostering of partnerships between schools and industries to ensure the students' skills are relevant. Unlike these countries, Pakistan's education system suffers due to obsolete ways of teaching, faults in the vocational education system, and low levels of integration with industries. Due to these gaps, Pakistan will have to transform its education system by learning from these models and trying to mix those with the local context.

• Reimagining the Education System

In order to keep up with the rest of the world, the education sector within Pakistan requires a drastic change where students are taught how to think critically, solve problems, harness creativity, and embrace technology. With regards to the curriculum witnessing a shift, it is imperative for the change to be made from rote learning to learning through inquiry, where students are encouraged to investigate, evaluate, and resolve challenges contextually (Kotsis, 2024). An education system that is oriented toward the future needs to have more approachable methods of cultivating creative thinking, such as the adoption of project and activity-based learning and interdisciplinary approaches which foster collaboration among students across subjects. At the same time, the teaching of technical skills, such as coding, data literacy, and other forms of digital literacy, should start at a young age. Incorporating these skills as part of the core curriculum will prepare students to succeed in emerging industries like AI, cybersecurity, and robotics while simultaneously helping them nurture an adaptable attitude for a constantly evolving labour market. This curriculum will assist students in becoming equipped for the current and future employment gaps, therefore bridging the divide between education and the world of work.

Incorporating technology into the education system is essential for preparing students for the digital economy. Online learning platforms, such as Massive Open Online Courses (MOOCs), can provide flexible, accessible, and scalable learning opportunities for students across Pakistan (Abdullah, 2023). These platforms can serve as a supplement to traditional learning, offering students the chance to learn from global educators and institutions. Integrating coding into the curriculum, starting from primary education through secondary school, is crucial to building a workforce capable of navigating the digital future. Moreover, digital literacy must be an integral part of the education system, as it equips students with the necessary tools to thrive in today's technology-driven world. Schools and universities should also invest in e-learning tools and virtual classrooms that can provide a more interactive, engaging, and personalized learning experience. By integrating technology in education, Pakistan can create a more dynamic and future-ready education system.

Strengthening partnerships between educational institutions and industries is perhaps the most effective strategy towards improving the education system and ensuring that it meets the needs of the job market. With these partnerships, universities and schools can develop the curricula that incorporate the skills that the employers are looking for. These partnerships could include industry experts assisting with course development, provision of internships, and active mentorship to the students. In addition, students will also be able to gain relevant work experience through apprenticeships which will enable them to appreciate the everyday challenges and possibilities in their areas of specialization. Such collaborations will increase the effectiveness of education as well as improve the students' chances of succeeding in the market. Besides, by incorporating industries into the education system, the students will be trained and prepared to face real problems, which will stimulate their creativity and contribute to the economy (Abulibdeh et.al, 2024).

The gap between employment opportunities and workforce capabilities can be efficiently minimized by providing vocational and technical training. While academic learning is undoubtedly important, vocational training is a preferred form of learning for those who do not want to pursue a university degree since it directly positions the individual into the workforce. In Pakistan, the development of programs for vocational training can be expanded to cover practice-oriented disciplines such as plumbing, welding, IT, nursing, and hospitality (Ghosh & Ravichandran, 2024). These are in not only high demand in Pakistan, but also guarantee employment in other countries. In doing so, if Pakistan enhances the scope of vocational education and meets the requirements of local and foreign markets, the country can bring down the overall youth unemployment rate tremendously and give students the opportunity to be financially free. Therefore, vocational training programs should also be complemented with emerging sciences and industry standards, so that the student graduates are job ready.

• Focus Areas for Reform

Curriculum Reforms serve as vital tools to prepare students for the quickchanging employment sector and future economic requirements. The education system of Pakistan should place priority on incorporating STEM subjects because these fundamental disciplines will prepare students for evolving industrial developments. The World Economic Forum (2020) reports that nations which adopt STEM into their educational systems gain substantial economic advantages such as better innovation output and entrepreneurship activity (Khushk et.al, 2023). Education focused on entrepreneurship development should be prioritized to develop student creativity along with problem-solving capabilities and innovative thinking. Schools which teach critical thinking and entrepreneurial skills enable them to produce job-making and leadership capabilities in the future student generation (Ahmad et.al, 2023). The success of students in a globalized competitive job market requires essential soft skills such as communication and teamwork alongside adaptability and emotional intelligence (Ramos-Monge et.al, 2023). When schools offer complete curricula, which teach technological competencies alongside social abilities they prepare students to join future workplaces where they can effectively handle professional environment changes.

Teacher Training is another key area that requires immediate reform to ensure that teachers are prepared to teach these future ready skills. Continuous professional development of teachers in Pakistan should be provided regarding modern teaching methodologies, digital literacy and emerging fields like artificial intelligence and data science. Teacher training has been recognized as key to global educational reform efforts. A report by the Organisation for Economic Co-operation and Development (OECD) has found that countries which invest in teacher development programmes have the capability to measure improvements in student learning outcomes (Sliusarenko, 2023). In the light of the above, Pakistan should initiate training programs that will not only impart knowledge but also develop skills in teachers for teaching critical thinking, creativity and problemsolving skills in the students. In addition, incorporating technology in the classroom and increasing teachers' digital literacy will be key in improving learning experience and making sure students are ready for the digital economy.

Public Private Partnership (PPP) has a vital role in closing the gap between education system and job market (Fabre & Straub, 2023). The major issue in Pakistan's education system is the mismatch between what is taught in the schools and universities and what employers need. In order to address this, the government needs to work on frameworks of public-private partnership to bring collaboration between the industry and the educational institutions. These partnerships can enable the development of curriculum that is aligned with demands of industry, internship and apprenticeship placement, and innovation in the pedagogical process. Public private collaborations can improve the employability outcomes by ensuring that students do not lose their focus on academics while still getting industry relevant training. Furthermore, private sector companies can also contribute in the supply of the funding for educational reforms, setting up training programs and mentoring students (Muzari, 2023). By strengthening these partnerships, Pakistan can enhance the dynamic and responsive education system to produce jobs ready students.

Conclusion

The education system in Pakistan is an important issue that needs to be addressed for the country to progress economically and socially. The ongoing technological advancements, automation, and globalization in the global landscape require Pakistan's education system to adjust and equip its youth with the skills needed to meet the standards of the future workforce. The existing educational framework that depends too heavily on old methods and curriculum must be thoroughly reformed so as to bridge the gap between education and employment. The reformation here includes the retraining of curricula to not only target academic knowledge but also to equip students with such skills as critical thinking, creativity, problem solving and digital literacy. These skills will be very important to secure future job opportunities as industries around the world are going more and more technologically driven. Due to inadequate focus on vocational and technical training, Pakistan's education system suffers from lack of preparedness of students for careers in the emerging sectors. Furthermore, a dearth of practical experience, obsolete pedagogical methods and inequality in access to good education in urban and rural areas make things worse. Due to these systemic weaknesses, graduates are unable to find employability and the high rate of youth unemployment is a major concern for Pakistan's economy. But the challenges here also offer the chance for real reform. By utilising curriculum innovations that combine the use of modern skills and technology, Pakistan can prepare its youth to meet the challenges of a more digital and competitive work environment.

It should be a collective effort of the policymakers, educational institutions and private sector employers in the reimagining of Pakistan's educational domains. Investments in education should be a top priority for policymakers, and an environment that encourages innovation and collaboration should be created. The curricula of educational institutions must be updated so that students acquire theoretical knowledge and also practical skills that are job ready. Furthermore, public-private partnerships will need to be fostered in order to align education with industry needs. On the employers' part, they need to invest in skill development programs, internships and partnerships with educational institutions so that there's a bridge between classroom learning and real-world applications. The future of jobs in Pakistan hinges on the country's capability to transform its education system in a manner that is in line with the changing work. To create a future ready workforce which can be a part of sustainable economic growth in Pakistan, technology can be integrated in education, vocational education can be promoted and collaboration between education systems and industries can be improved. This endeavour will not only make available better employment opportunities, but will also enable individuals to live in a more complex and interdependent world.

Recommendations for Policy and Action

In order to address the challenges facing Pakistan's education system, policies should focus on supporting an educational environment that is compatible with the future job market. First is funding, because more money is needed to increase the infrastructure, increase the quality of the teachers and educational resources across the country. The government should also make sure that funds are allocated to the vocational training and technical education that are very important for the growing demand for skilled workers (Altaf, 2023). Policymakers should also support policies enabling institutions to modify their curricula to quickly respond to changes in industry needs. International bodies collaboration may assist Pakistan to learn from successful educational models of countries like Finland, South Korea and Singapore with regard to integration of STEM (Science, Technology, Engineering, and Mathematics) education and soft skills development (Zeeshan, 2024). In addition, the government should implement policies that encourage private sector participation in education and training, as in other countries, public private partnership has been found to be effective. Establishing a long-term coherent policy framework for education reform will pave the way for an education system that can be adapted, industry responsive and sustainable.

It is important to revise the curricula to give students the required skills in the changing job market and educational institutions are a vital part of this. One practical step is to introduce project-based learning and problemsolving methodologies to spark critical thinking and innovation in the students. Real world applications should be integrated in curricula of subjects such as digital literacy, artificial intelligence and data science to create knowledgeable students, but also capable of applying their learning in a professional context (Pandit et.al, 2025). Along with this, educational institutions can form a relationship with industries to offer hands-on training, internship and career guidance programs to the students to gain practical experience and also, to be familiar with the working environment (Bose et.al, 2023). Besides, schools and universities should also put in place teacher training programs geared towards ensuring that educators are well equipped with skills that would enable them to teach future ready subjects and ready students for the industry demands (Nemani, 2024).

Employers have a crucial role to play in making sure that the education system and the workforce needs fit, and they should put in place training, internships, and collaborative partnerships with the education institution. An internship program can give students an opportunity to gain experience working in real world job settings while providing businesses with their chance to find potential new hires. These programs fill the gap between academic knowledge and practical application to make the students more employable (Jackson, 2024). By upskilling their current workforce through continuous training programs that enhance employees' technical and soft skills, employers should also consider that employees can remain relevant in the rapidly changing job market. In addition, businesses can work with universities and vocational schools to maintain the current curriculum based on the latest industry standards (Yoto et.al, 2024). Employers can support the overall economic growth of the country by fostering strong industry-education collaborations in order to make sure that students graduate with the skills they require to succeed. It will bring such partnerships that will create a dynamic ecosystem where the educational institutions and the private sector will work together to prepare students for the challenges of tomorrow's job market.

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