

# Innovative Teaching Practices: An Investigation of HEC and Obstacles in Pakistan's Higher Education System till 2012

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## Abstract

*This paper presents a brief about the establishment of HEC in Pakistan, the challenges it faced and recommendations for its further strengthening. It covers analysis and challenges which were faced by HEC since its establishment till the year 2012. The paper concluded that the country was already dealing with several issues throughout the decade under review, including terrorism, corruption, energy shortages, etc. The disintegration of HEC would turn out to be a negative sign. When comparing HEC's shortcomings and accomplishments, it becomes clear that the organization has made significant strides and has shown itself to be a reliable entity. Its disintegration overnight would turn out to be a massive devastation. Moreover, working at various educational levels concurrently was crucial because, if postsecondary education was necessary to achieve economic growth, then elementary and secondary education was crucial for social development and strengthening the foundation of education.*

**Keywords:** *Education, Socioeconomic Development, HEC, Higher Education, Pakistan*

## Introduction

Any nation's basic capital is its human resource which contributes towards achieving national objectives. Education is essential for a nation's socio-economic growth and is crucial to the development of human resources. Therefore, the quality of education a nation offers its citizens has a significant impact on both its spiritual and material progress and prosperity. Since education produces young brains with the information, attitude, skills, and competencies to build a nation's future, it is, in fact, one of the most potent change agents in accomplishing national goals. The development of human capital heavily depends on education. November 1947 saw the organisation of Pakistan's first conference on education. Jinnah presented a theory of education that combined elements of contemporary science and technology with the foundations of Islamic culture (Aziz et al., 2014). It recommended making the education system stronger and particular emphasis on Higher Education with relevance to the country's needs and human resource development (Qadir, 2013). The developed world has advanced by utilising its human resource base, and the calibre of that resource is determined by how well-developed its educational system is.

## Literature Review

The formal process by which society consciously passes on its collected information, skills, traditions, and values from one generation to the next is called education. Almost all the countries of the world have three tiers of education, of which primary education lays down the foundation

of the learning process; Secondary education facilitates transition, while higher education equips graduates with information and abilities that enable them to contribute significantly to the nation's socioeconomic progress (Qadir, 2013). Article 37(b) and (c) of the Pakistani Constitution declares that "The state shall remove illiteracy and provide free and compulsory secondary education within the minimum possible period; make technical and professional education generally available and higher education equally accessible to all based on merit" (Khan et al., 2019). On the contrary, education as a whole has remained a neglected area in Pakistan and Higher Education was no exception till 2002 at least (Qadir, 2013). In 2009, Pakistan spent 2.1% of GDP on education, while Bangladesh announced and implemented 2.6%. Indonesia 3.5%, Malaysia 4.7% and Iran 5.1%. The Education Policy announced by the government in 2008, declared an expenditure of 7% of GDP on education but in actuality, only 1.8% of GDP on education was being spent (Aziz et al., 2014).

There have been significant challenges facing Pakistan's Higher Education (HE) industry for many years, spanning several decades (Naureen & Lodhi, 2015). The HE system was characterised by a faculty with barely 25% PhDs, limited research, and generally poor quality (Mubarak et al., 2012). With only 2.1% of its budget allocated to education, Pakistan has some of the lowest total spending levels in the area. This was made worse by the poor literacy rate of around 56%<sup>1</sup> and a weak economy with a per capita GDP of \$690 (Rehman et al., 2013).

Since Pakistan's founding in 1947, the HE sector has remained mostly unchanged. This is not because its issues have gone unnoticed, since independence, at least 10 evaluations of HE have been conducted, but no fruitful results were achieved. Indeed, since independence, there have been reports on HE in 1947, 1951, 1959, 1966, 1969, 1970, 1972, 1979, 1992 and 1998 (Bukhari & Asim, 2013) and six major education policy documents. Nonetheless, HE had been stagnant throughout most of this period. Universities lacked a research culture. There were very few publications and very little research being done. Pakistan has no universities that are among the top 500 in the world (Khan et al., 2019). Overall, the system did not meet the demands of the country or equip students to compete in a global market that is becoming more and more demanding.

It was until then, in 2000, that The Education Ministry was prompted to act when the World Bank and UNESCO highlighted how undeveloped nations like Pakistan were. A task group for higher education and research in Pakistan was then established by the education minister (Qadir, 2013). This task group proposed that the University Grant Commission (UGC) be replaced with the Higher Education Commission (HEC). The concept of Vision of Higher Education was examined as the transformation of our higher education institutions into world-class centres of learning, equipped to foster high-quality education (Shabbir et al., 2014), scholarship, and research, to produce enlightened citizens with strong moral and ethical values who build a tolerant and pluralistic society rooted in Pakistani culture, according to the January 2002 Task Force Report on the Importance of Higher Education in Pakistan (Aziz et al., 2014).

On April 11, 2002, then-President General Musharraf's regime approved the recommendation of the Task Force on Improvement of Higher Education in Pakistan. The Federal Minister of Science and Technology at the time, Prof. Dr. Atta-ur-Rehman, was regarded as the most qualified individual to assume the role of Chairman of HEC. To shift Pakistan's economy from one centred on agriculture to one centred on knowledge, certain projects and programmes were designated as national priority initiatives. The goal of the human resource development

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<sup>1</sup> 44 % among women

initiatives was to match these programmes' human resource needs. Information technology, biotechnology, engineering, sciences, pharmaceutical sciences, material sciences, basic sciences, social sciences, economics, finance, and other fields were among them, as was the shift in the agriculture sector to high-value-added agricultural goods (Farid et al., 2015).

To enable Higher Education in Pakistan, to meet the Challenges of the 21<sup>st</sup> century, the federal government increased the grant of Universities to Rs 10.493B for the financial year 2005-2006, thus allowing a 50% increase over the previous years' grant (Qadir, 2013). It is important to note that during 2001-2002, funding from the federal government to all public sector Universities was only Rs. 2.9 billion (Khan & Bhatti, 2016). Therefore, a three-fold increase in the grant of public sector Universities took place in just four years (Razi, 2016). In addition, the Chancellor's Committee decided to raise the recurring and development budget allotments for the higher education sector by 50% per year until they reach 1% of Pakistan's highest GDP. These measures aimed to initiate a qualitative transformation in the sphere of higher education by raising the academic standards of Pakistani institutions to match those of industrialised nations (Qadir, 2013).

The Prime Minister was designated as HEC's governing authority when it was established as an independent entity. With 17 members, the committee has the ideal mix of representation from the federal, provincial, and university levels (Ashraf & Ismat, 2016). They were appointed for a term of four years and were not subject to removal. HEC carried out several significant tasks, including coordinating efforts between universities and industries, establishing new institutions, providing funding, accrediting universities and the degrees they award, and ensuring the quality of research and higher education (Khan & Bhatti, 2016).

### **Higher Education Contributing towards National Development:**

Pakistan is well situated at the intersection of Central, West, and South Asia. Situated near two superpowers in the North and an aspirant power in the East, it has a turbulent past dating back thousands of years and is at the mouth of the oil-rich Arabian Gulf. The nation is endowed with abundant natural resources. Within the next ten years, it must exploit its abundant natural and human resources to catch up with other developed, industrially sophisticated, and wealthy countries.

Pakistan must discover, map, and extract its natural resources, which include coal at Thar, gold at Riko Deq, copper at Saindaik, gas at Qadirpur, and other unexplored minerals. It also needs to develop vital technologies for industrialization, economic growth, and energy expansion. Technology is necessary in Pakistan for several reasons, including information and communication technologies, aviation, transportation, avionics, health, agriculture, the natural and applied sciences, and weather forecasting, which allows for the forecasting of natural calamities like floods and tsunamis (Farid et al., 2015).

Technology is necessary for Pakistan to maintain border defence and national asset protection. It is forced to use its resources more wisely and efficiently by a factor of 10 since it is surrounded by a hostile neighbour ten times its size. It is a known reality that money cannot buy everything, particularly when it comes to strategic interests, even if it has the financial means.

The growth of HEC throughout the reviewed decade has shown that, with the right tools and energetic, imaginative leadership, the people of Pakistan are capable of great things. When faced with obstacles and motivated to address pressing national needs, Pakistani scientists have worked wonders, as seen by the Green Revolution of the 1960s, the establishment of vital heavy industries in the 1970s, and the advancement of nuclear and missile capabilities in the 1980s and 1990s (Khan et al., 2018). Academicians responded to the urgent necessity to save higher

education in the first ten years of the twenty-first century. HEC, which was first directed by Dr Atta-ur-Rehman and is currently managed by Dr Javaid Laghari, has achieved remarkable outcomes in that time (Qutoshi, 2015; Razi, 2016).

The number of universities had almost doubled in the decade under review. Pakistan has 73 public and 56 private universities (Halai, 2013). Since 2001-02, the enrolment in universities had increased six times from 135,123 to over 803,507 as of 2011. In the first 55 years, Higher Education produced only 1500 PhD scholarships, but in the whole decade, HEC issued 13000 PhD scholarships. The total PhD output in 55 years<sup>2</sup> was 3281 including 14 in Engineering & Technology, but in that particular decade, it was 3944 including 232 PhDs in Engineering and Technology (Farid et al., 2015). HEC launched a massive faculty development program under which about 2700 scholars had gone abroad for MS/PhD and about 5000 were enrolled in indigenous PhD programs. In the next 3-5 years, HEC is expected to produce more than 8000 PhDs. Publications in impact factor journals increased almost ten times in that decade. Pakistan's share in world articles also increased three times. Following statistics would be prudent to appreciate the effectiveness of HEC.

**Table 1: UGC vs HEC Comparison**

|  | UGC 2002-03 | HEC 2010-11 |
|--|-------------|-------------|
| Total recurring budget of universities | Rs. 3.44 b  | Rs. 29.1 b  |
| Funded students                        | 159,103     | 392,893     |
| Research budget                        | Rs. 50 M    | Rs. 1,225 M |
| PhD & MPhil students                   | 6,744       | 29, 834     |
| Self-generated revenue                 | Rs 3.6 b    | Rs. 22.3 b  |

### **Revolution in HE in Pakistan:**

Pakistani higher education transformed with the founding of the HEC in 2002, particularly in the domains of engineering, science, and technology. Pakistan has to maintain this pace for the following ten years or more to reach industrially advanced status. Over Rs. 97 billion was invested by Pakistan in the advancement of its institutions. A twelve-fold increase above the Rs. 7.5 billion spent by the UGC between 1978 and 2002 since the establishment of HEC. The HEC made the largest investments in the fields of agriculture, engineering, information technology, and basic sciences. More than 500 Indigenous and more than 1,000 foreign PhD scholarships in engineering were given out, and projects valued at more than Rs. 35 billion were accepted for funding by engineering universities. One of the most advanced computer networks in the world, the Pakistan Education and Research Network,<sup>3</sup> which connects all universities with a 10 GB backbone and 1 GB of connection per university, began connecting colleges as well. There were 74 institutions using video conferencing equipment, and that number was rising quickly (Khan et al., 2021). 75% of the world's literature was accessible through digital libraries (Zahra et al., 2017). In terms of technological readiness, HEC gave higher education institutions access to cutting-edge machinery through the Equipment Sharing Programme (Haapala, 2017) and awarded grants for conferences,

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<sup>2</sup> 1947-2002

<sup>3</sup> PERN

seminars, workshops, travel, and other events as well as research. There were established research collaborations between Pakistani universities and top universities worldwide.

To support Pakistan's strategic development, HEC concentrated on developing vital technologies such as biotechnology and genetics, immunology, robotics and automation, nanotechnologies, superconductivity, computer vision, photo optics and lasers, electromagnetic and microwaves, nuclear fusion for energy (Farid et al., 2015), etc. Since 2002, research production has increased sixfold (Muborakshoeva, 2015).<sup>4</sup> Higher Education Institutions accounted for 80% of these research articles. In the previous three years alone, output has more than doubled, and in the following three years, it is predicted to double once again. It was made possible for about 5,000 academics (Rasheed & Guo, 2020) from Pakistan to present their findings at prestigious conferences all over the world. Pakistani researchers maintained connections with colleagues at all of the world's top universities, including those in the US, UK, China, Germany, France, Australia, South Korea, and so forth. HEC began developing high-tech incubators as a means of facilitating technology transfer to the industry (Muborakshoeva, 2015). The universities that had candidates in the pipeline were NED, NUST, UET Peshawar, UET Lahore, and the University of Agriculture Faisalabad. Three prestigious universities were working with USAID to establish three new Centres of Excellence in the areas of energy, food security, and water resources. With the construction of top-notch academic facilities in second and third-tier cities in the central regions of Punjab, Sindh, and KPK, HEC brought higher education to a wider audience. With new institutions being established in Bannu, Kohat, Malakand, Swat, and Mardan, the KPK received the largest investment.<sup>5</sup> Compared to many other Pakistani universities, the Kohat University of Science and Technology produced more articles in prestigious international publications. Compared to the two universities that existed in Baluchistan in 2002, four new institutions have been constructed and put into operation. Projects to establish two more in Loralai and Turbat were authorized. Because of the connection created by HEC, 57 PhD scholars from the University of Baluchistan were enrolled in AIT Bangkok at the time. Three recently established universities and four campuses in disadvantaged districts of Sindh were at different levels of development. With the creation of the Accreditation Council to ensure conformity to international standards and the standardization of the four-year undergraduate programme, the IT industry has witnessed a full overhaul of the educational system. This served as the cornerstone of Pakistan's IT export revolution.

### **International Recognition**

The entire Bachelor's,<sup>6</sup> Masters and PhD<sup>7</sup> degrees were updated to meet international standards. In addition to being shorter than Pakistan's present educational system, this prior system placed less emphasis on independent study and topic specialization, according to NARIC, the UK body for equivalent international education certificates. For this reason, an MPhil and a PhD from the University of Karachi awarded in 2007 were deemed to be comparable. But given the new educational framework, NARIC wrote, "Within the revised<sup>8</sup> Pakistani higher education system, we recognize all research degrees<sup>9</sup> to UK standard." According to Science Watch, January 2011

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<sup>4</sup> from 815 in 2002 to 5068 in 2010

<sup>5</sup> by share

<sup>6</sup> 4 years

<sup>7</sup> 3 tier

<sup>8</sup> Post HEC

<sup>9</sup> MPhil and PhD

issue,<sup>10</sup> Even though Pakistan's research growth was ranked first in two fields—plant and animal sciences and microbiology—it remained insufficient. It was necessary to do extensive research in important areas and engineering and technology, which were gradually taking control (Farid et al., 2015).

Another important feature of HEC's performance was the appearance of some Pakistani universities on the international horizon. NUST led in world ranking and was ranked overall 426<sup>th</sup> in the world, and 250<sup>th</sup> in Engineering and IT. Four other universities in Pakistan were in the top 600 out of about 30,000 universities in the world. They were UET Lahore, Karachi University, Quaid-e-Azam University and University of Lahore. In the Asian ranking, NUST was ranked 84<sup>th</sup> overall and 58<sup>th</sup> in Engineering and IT (Mueed et al., 2013).

The World Bank's 2008 approval of a US\$100 million Higher Education Support programme gave HEC worldwide legitimacy. On March 24, 2011, a new US\$300 million Tertiary Education Support Programme was authorized. The HEC will receive US\$250 million from USAID, with the primary goal of establishing Centres of Excellence in Water, Energy, and Agriculture.

### **Challenges**

Despite the significant successes of HEC it faced many challenges. Pakistan had one of the lowest rates of scientists and researchers per million people in the area, with just 162 researchers/million. By comparison, Turkey had 562, China 926, South Korea 4162, and the USA 4651 (Naureen & Lodhi, 2015). Pakistan needed significantly more research in important areas and a much larger workforce in science and technology. To be the leader in the area, it needed to hire at least four times as many scientists and researchers over the following ten years:

- i. **Turbulence in HEC:** April and March of 2011 had been difficult for HEC. On March 28, 2011, the Implementation Commission, under the direction of Mian Raza Rabbani, decided to transfer HEC to the provinces. In addition, they divided up the federal powers into the Islamabad Capital Territory (ICT), the Cabinet Division, and the Ministry of Inter-Provincial Coordination. HEC received news on its devolution on March 31, 2011. After that, students in other Pakistani cities staged protests against this choice. Due to the uncertainty surrounding HEC's stance following this announcement, the Ministry of Finance also withheld the payment of Rs. 7.7 billion. The World Bank's \$300 million soft loan and USAID's \$250 million additional external aid were both anticipated.

Vice Chancellors from over 130 institutions met on April 7, 2011, and requested that Prime Minister Yousuf Raza Gilani and then-President Asif Ali Zardari intervene to maintain the HEC's federal status. On April 9, 2011, Advocate Arshad Ali Chaudhry and Mr Anwer Masood Khan filed a petition against the Federal Government and Ministry of Law at the Supreme Court under Article 184(3) of the Constitution on behalf of Professor GA Miana, the Rector of Rippah International University, and Brigadier Muhammad Ajaeb, the Director General of the University of Lahore Islamabad Campus.

Dr Atta-ur-Rehman has appealed to the Pakistani Supreme Court to take a suo moto action against the HEC's devolution. On April 12, 2011, a three-judge

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<sup>10</sup> a prestigious magazine published out of the UK

panel made up of Chief Justice Iftikhar Muhammad Chaudhry, Justice Muhammad Sair Ali, and Justice Ghulam Rabbani decided that the March 31, 2011, notification would not have an impact on the HEC's operations due to the provisions of Ordinance 2002. The ordinance would take precedence in the event of a conflict or inconsistency between the notification and the ordinance's provisions. Ultimately, on April 28, 2011, the federal government decided to keep funding HEC till the next NFC Award in 2014 during a meeting of the Council of Common Interest (CCI), which was presided over by Prime Minister Syed Yousaf Raza Gilani and attended by the chief ministers of every province (Qutoshi, 2015).

- ii. **Significance of Higher over Primary and Secondary Education:** A country's education system is the first to fail, and the devolution of higher education is a surefire way to see our country destroyed. It is one of the few federal agencies that was operating. Pakistan intended to destroy the HEC, which India intended to construct. In contrast to higher education, some opponents said that primary and secondary education needed to be funded immediately. However, they questioned if doing so would benefit the growth of our economy. The nations that made increasing investments in higher education were developing considerably more quickly (Muborakshoeva, 2015). As an illustration, consider Sri Lanka, which had a 97% literacy rate and heavily invested in basic education but little in higher education, resulting in a stagnant economy. In contrast, countries like South Korea, Singapore, Hong Kong, and others saw tremendous economic growth as a result of their investments at all levels, particularly the tertiary one. Therefore, massive financial investments were required at all educational levels. In this context, it can be concluded that as a short-term measure and to accrue benefits in an early time frame investment in HE was priority one. Similarly in the long term, to enhance the educational base of the country, investment in Primary and Secondary Education was to be undertaken.
- iii. **Reactions of People from Various Walks of Life:** The majority of students protested in several places because they disagreed with this choice. The provinces were unable to assume control over higher education. It was a position that asked what would happen to higher education if they failed to pay attention to even elementary and secondary school. The VCs all unitedly opposed the decision as well. Political parties' positions and remarks differed on a provincial level rather than as the ruling party or the opposition. Punjabi politicians opposed this move, while the majority of KPK and Baluchistan politicians supported it, and Sindhi politicians responded in a way that betrayed disdain.
- iv. **18<sup>th</sup> Amendment and HEC:** HEC should have remained independent as it was an independent organization that answered directly to the Prime Minister rather than the Ministry of Education. Since the opposition to HEC's dissolution preserved the organization as a federal entity rather than causing it to devolve, it did not violate the 18th Amendment (Qutoshi, 2015). Thus, it may be seen as an act of insanity or retaliation for its charge of verifying fictitious degrees of lawmakers.
- v. **Effects of Devolution of HEC:** It was believed that the choice to devolve HEC would ruin the uniformity of postsecondary education across all provinces. Numerous opponents of HEC contended that inter-provincial rivalry would rise as a result, but it was also possible that the nation would become more fragmented as

a result of HEC's disintegration. If HEC academics were not given a conducive work environment following the devolution of HEC, their departure would inevitably lead to a brain drain. HEC's substantial financial investment in the scholars would be useless. Prof. Dr Hoodbhoy noted that the dissolution of HEC would harm Pakistan's already significantly lower quality of university education when compared to China, India, and Iran (Shabbir et al., 2014). He said that the government was headed in the wrong direction, creating chaos, adding another bureaucracy or giving power to the already-existing provincial education bureaucracies, which were even more narrow-minded and incompetent than those at the federal centre. Similar to this, a large number of esteemed researchers like Dr. A. Q. Khan and a large number of analysts like Tallat Hussain opposed the devolution of HEC.

- vi. **HEC as a Federal Entity:** Higher Education and the Ministry of Science and Technology, which are closely associated with HEC, are federal topics in many nations. Higher education is overseen by federal ministries in several nations, including China, India, Malaysia, South Korea, Turkey, Japan, Egypt, Indonesia, Singapore, and the United Kingdom. Thus, it was a bad idea for Pakistan to devolve HEC.
- vii. **Survey on the dissolution of HEC:** Education is as important to a country's development as the foundation of the educational system. If effective education policies contribute to the strength of a country, then ineffective education policies have the opposite effect. Regarding education policy, the government's creation of HEC was among its better moves; its devolution may be the worst (Bukhari & Asim, 2013). To record the opinions of recent science graduates, NAYS chose to poll HEC dissolution. For that reason, on April 22, 2011, the NAYS survey distributed a straightforward "Google form" questionnaire to all of its members, who together represented Pakistani scientists and researchers. Out of the 400 respondents, 94.5% disagreed with the dissolution of HEC, according to the survey results. Resisting the dissolution of HEC was not viewed as a violation of the 18th Amendment by 63.75% of respondents. 72.25% said that most emerging nations' higher education was a federal topic. More than 4000 PhD scholars who were studying overseas would be a huge loss to the country if they were to not return following the collapse of HEC, according to 84.25% of respondents who believed that all provinces should have the same standards for higher education.

## Conclusion

Education is a long-term investment in the nation as a whole and its results or outcomes take longer to appear. Hence, it is impossible to work out the impact of higher education on the economy and society. However, one thing is very important, HEC has generated movement and momentum on the highway to education and people are responding with ever-increasing inspiration to educate their children.

The country was already dealing with several issues throughout the decade under review, including terrorism, corruption, energy shortages, etc. The disintegration of HEC would turn out to be a negative sign. When comparing HEC's shortcomings and accomplishments, it becomes clear that the organization has made significant strides and has shown itself to be a reliable entity. Its disintegration overnight would turn out to be a massive devastation. Even HEC detractors like

Prof. Dr. Hoodbhoy opposed HEC's sudden devolution to the provinces since the latter were ill-equipped to carry out HEC's duties. Even under such a scenario, several tasks ought to be carried out by a federal government agency operating independently, such as HEC. Finally, on April 28, 2011, PM made the wise choice to continue sponsoring HEC by the federal government through the 2014 NFC Award. A preferable course of action would be for HEC to continue operating as a federally independent organization while the provinces give basic and secondary education their whole focus. By doing this, states might gain the public's trust while simultaneously improving the appalling state of basic and secondary education. Working at all three educational levels concurrently was crucial because, if postsecondary education was necessary to achieve economic growth, then elementary and secondary education were crucial for social development and strengthening the foundation of education.

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