

EDUCATION





The ability to learn and focus on precise detail is unique to humans among all other species, enabling them to achieve the wonders of the world. This ability can be traced back to the origin of life on Earth. The fact that nations advanced in education are also leading the world clearly highlights the importance of effective learning. In modern times, the economies that excel in innovations like biotechnology, quantum mechanics. nanotechnology, and modern technologies like artificial intelligence (AI) will be the key deciding factor in determining which economies will lead in the emerging knowledge driven world order. Education is a powerful tool for transforming the patterns of thought within individuals and nations. It holds top priority in the social sector of developing countries, including Pakistan. Historically, the education sector has faced numerous challenges, preventing it from delivering the expected outcomes. Education has long been a neglected area, but its role in shaping the future of nations is now widely recognized. As a result, significant efforts and resources are being directed toward improving the sector, particularly through the introduction of blended learning and modern technologies.

The Government of Pakistan is fully aware of these challenges and is committed to prioritizing the education sector. Furthermore, efforts are being made to bring out-of-school children into schools, improve the quality of education, and create a conducive learning environment, among other initiatives. Emphasis is being placed on both primary and higher education to make the younger generation competitive from an early age. For a country like Pakistan, this focus is even more crucial for socio-economic development, as it facilitates the effective transition of its large youth population.

Transforming 63 percent of the youth into real assets requires optimal capitalization through the establishment of high-quality, market-driven primary, secondary, and higher education institutions. Education is undeniably crucial for shaping individuals and societies in contemporary times. It is the cornerstone for personal development, social advancement, and economic prosperity. Education goes beyond mere knowledge acquisition, it focuses on critical thinking abilities and practical skills that are essential for navigating life's multifaceted challenges. Moreover, it promotes social cohesion, tolerance, and a sense of unity. Empowered by education, individuals are poised to make substantive contributions to their communities and the broader global milieu. Education is not solely about attaining credentials, but about empowering individuals and catalyzing positive societal transformation.

This chapter explores various aspects of Pakistan's education system, beginning with a detailed examination of the measures outlined in Article 25A of the Constitution of Pakistan. which mandates free and compulsory education for children aged five to sixteen, as well as Goal 4 of the Sustainable Development Goals. In line with the objectives of "URAAN Pakistan" vision, the chapter also highlights the vital role of higher education in fostering a knowledgebased economy, with a focus on investing in the youth. It provides an in-depth analysis of enrollment trends across regions and genders, the expansion of higher education institutions (HEIs), the composition of faculty (Ph.D. vs. non-Ph.D.), and significant initiatives of Higher Education Development in Pakistan (HEDP) project. Furthermore, it underscores strategic achievements, institutional reforms, and new initiatives in the higher education sector,

particularly focusing on the promotion of research and development within HEIs.

Focusing on the provincial level offers a comprehensive overview of government efforts to spread education and knowledge throughout the population. Additionally, skill development, a crucial component of the educational framework, has become a top government priority, with notable achievements and ongoing projects highlighted for clarity. Central to this effort is the essential role of the National Vocational & Technical Training Commission (NAVTTC) in providing professional training to youth and the skilled workforce, enhancing national productivity, and facilitating the export of labor abroad.

10.1 Progress on Education Indicators Related to Goal 4 of SDGs

Sustainable Development Goal 4 (SDG 4) aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. One of its key targets is to ensure that, by 2030, all girls and boys have access to and complete quality primary and secondary education, achieving relevant and effective learning outcomes. Pakistan has shown a strong commitment to transforming its education system into a high-quality, globally competitive, and demand-driven model, in alignment with the SDG 4. The country's progress toward achieving this goal is outlined below.

- Primary, Lower and Higher Secondary Education Completion Rates stood at 67 percent, 47 percent, and 23 percent, respectively, depicting higher Primary attendance than Lower and Upper Secondary levels (SDG4 Target Indicator 4.1.2).
- Parity Indices at Literacy, Youth Literacy, Primary and Secondary are 0.71, 0.82, 0.88 and 0.89, respectively (SDG4 Target Indicator 4.5.1).
- The participation rate in organized learning (one year before the official primary entry

age) by sex is 19 percent (female), showing a low level of consideration of Pre-Primary Education (SDG4 Target Indicator 4.2.2).

 The percentage of the population in a given age group achieving at least an affixed level of proficiency in (a) functional literacy and (b) numeracy skills is 60 percent (SDG4 Target Indicator 4.6.1).

Federal and provincial governments have undertaken various initiatives to elevate education standards in alignment with their commitment to achieving Goal 4 of the Sustainable Development Goals (SDGs). These measures encompass a wide range of strategies aimed at improving access to quality education. Key initiatives include establishing new schools, upgrading existing facilities, and enhancing the learning environment through the provision of basic educational resources. Efforts also focus on digitizing educational institutions. strengthening their resilience to cope with unforeseen circumstances, and promoting distance learning. Additionally, there is an emphasis on teacher capacity building and improving recruitment practices, particularly in hiring qualified science teachers to address gaps in science education.

10.1-a Educational Institutions and Enrolment Data¹

i) Pre-Primary Education

Pre-primary education is the essential component of Early Childhood Education (ECE). Prep classes are for children between 3 and 5 years of age. At the national level, a decrease of 3.3 percent in pre-primary enrolment (11.77 million) in FY 2023 against (12.16 million) in FY 2022 has been recorded. The estimated figure for pre-primary enrolment in FY 2024 is around 11.6 million (Table 10.1).

ii) Primary Education (Classes I-V)

In FY 2023, 168.24 thousand functional primary schools with 506.02 thousand corresponding teachers were recorded in the country. Primary enrolment increase by 3.2 percent, as the total

¹ According to Pakistan Institute of Education, the estimated data for enrolment, number of institutions and teachers for the FY 2025 is not available. However, the July 2025 onwards data will be incorporated in the Statistical Supplement of Pakistan Economic Survey, 2024-25. Therefore, the estimated data for the FY 2024 is considered for analysis.

number of students enrolled increased to 24.61 million in FY 2023 compared to 23.85 million in FY 2022. However, it is estimated to increase by around 24.83 million in FY 2024.

iii) Middle Education (Classes VI-VIII)

In FY 2023, the total number of middle-level institutions stood at 51.03 thousand, with 511.2 thousand employed teachers in the country. Middle school enrolment increased by 7.6 percent. The total number of enrolled students reached 9.43 million in FY 2023, compared to 8.77 million in FY 2022, and it is projected to increase by 4.7 percent (from 9.43 million to 9.88 million) in FY 2024.

iv) Secondary/High School Education (Classes IX-X)

In FY 2023, 39.4 thousand secondary schools were functional, with 733.4 thousand teachers recorded nationwide. Secondary school enrolment increased by 5 percent nationally, to 4.72 million in FY 2023 against 4.49 million in FY 2022. However, it is estimated to increase further by 3.8 percent (i.e., from 4.72 million to 4.89 million) during FY 2024.

v) Higher Secondary/Inter Colleges (Classes XI-XII)

During FY 2023, there were 9.0 thousand higher secondary schools/inter colleges with 196.7 thousand teachers functional at the national level. The overall enrolment of students in higher secondary education witnessed an increase of 8.8 percent in FY 2023. The enrollment registered during FY 2023 was 2.33 million compared to 2.15 million in FY 2022. For FY 2024, it is projected to reach 2.38 million.

vi) Degree Colleges (Classes XIII-XIV)

An enrolment of 0.65 million students in degree colleges is expected during FY 2024, as compared to 0.66 million in FY 2023. A total of 2573 degree colleges were found in FY 2023, with an estimated 2516 degree colleges for FY 2024. The number of teachers in degree colleges was 60.13 thousand in FY 2023 and is projected to be 59.84 thousand in FY 2024.

vii) Universities

There were 269 universities with the overall enrolment of students in higher education institutions was recorded at 1.94 million in FY 2023, decreased from the previous year by 13 percent. The enrolment is expected to increase by 0.8 percent from 1.94 million in FY 2023 to 1.95 million in FY 2024.

viii) Technical and Vocational Education

During FY 2024, 4,563 technical and vocational institutes with 51.08 thousand teachers were functional nationally. The enrolment was recorded at 0.45 million in FY 2023 compared to 0.44 million in FY 2022. However, it is estimated to increase by 1.1 percent (i.e., from 0.45 million to 0.46 million) in FY 2024. Detailed information about the number of institutions, enrolment, and teachers is presented in Table 10.1.

Table 10.1: Number of Mainstream Enrolment, Institutions and Teachers by Level (The										
	Years	Pre- Primary	Primary*	Middle	High	Higher Sec./ Inter	Degree Colleges	Technical & Vocational Institutes	Universities	Total
	2014-15	9589.2	19846.8	6582.2	3500.7	1665.5	510.6	319.9	1299.2	43314.1
	2015-16	9791.7	21550.6	6922.3	3652.5	1698.0	518.1	315.2	1355.6	45804.0
	2016-17	11436.6	21686.5	6996.0	3583.1	1594.9	537.4	344.8	1463.3	47642.6
nt	2017-18	12574.3	22931.3	7362.1	3861.3	1687.8	604.6	433.2	1575.8	51030.4
lme	2018-19	12707.1	23587.9	7634.1	3969.0	2139.9	725.6	433.2	1858.7	53055.5
lolu	2019-20	12038.8	23758.2	7869.5	4014.5	2226.8	771.6	433.2	2001.7	53114.3
Ξ	2020-21	11366.6	24351.5	8414.7	4359.7	2320.2	757.9	433.2	2226.3	54230.1
	2021-22	12165.9	23848.7	8767.3	4489.9	2145.8	623.4	438.1	2226.3	54705.4
	2022-23	11771.5	24613.1	9432.7	4715.1	2335.2	660.7	453.9	1936.3	55918.5
	2023-24(E)	11598.1	24826.9	9877.2	4892.4	2377.8	648.9	458.3	1952.5	56632.1

Ta	ble 10.1: Nu	mber of N	lainstrear	n Enrol	ment, Iı	nstitutio	ns and Te	achers by Le	vel	(Thousands)
	Years	Pre- Primary	Primary*	Middle	High	Higher Sec./ Inter	Degree Colleges	Technical & Vocational Institutes	Universities	Total
	2014-15	-	165.914	44.818	31.255	5.393	1.410	3.579	0.163	252.6
	2015-16	-	164.630	45.680	31.740	5.470	1.418	3.746	0.163	252.8
	2016-17	-	168.864	49.090	31.551	5.130	1.431	3.798	0.185	260.1
SU	2017-18	-	172.519	46.665	31.392	5.754	1.659	3.740	0.186	262.0
utio	2018-19	-	180.054	47.294	31.668	5.876	2.893	3.740	0.202	271.8
stitı	2019-20	-	179.968	47.045	31.668	5.898	2.983	3.740	0.209	271.3
In	2020-21	-	180.217	47.182	34.210	7.102	3.021	3.740	0.220	275.6
	2021-22	-	162.113	47.822	34.564	8.113	2.487	4.182	0.220	259.5
	2022-23	-	168.241	51.033	39.389	9.004	2.573	4.406	0.247	274.9
	2023-24(E)	-	166.033	51.840	41.310	9.963	2.516	4.563	0.269	276.5
	2014-15	-	430.920	380.785	514.158	118.079	36.587	19.393	88.288	1588.3
	2015-16	-	444.567	394.231	529.520	123.061	37.082	18.207	83.375	1630.1
	2016-17	-	475.235	455.445	560.642	120.336	37.857	18.207	58.733	1726.3
Ś	2017-18	-	522.369	448.074	563.302	123.154	41.233	18.207	56.885	1773.3
her	2018-19	-	494.913	448.667	567.309	136.008	61.602	18.207	60.279	1787.0
eac	2019-20	-	485.215	442.656	566.703	137.660	60.064	18.207	64.817	1775.5
F	2020-21	-	476.513	433.979	592.307	158.386	59.455	18.207	69.604	1808.4
	2021-22	-	463.165	434.272	587.055	170.240	57.709	18.347	69.604	1800.4
	2022-23	-	506.019	511.205	733.367	196.694	60.130	40.889	98.030	2146.3
	2023-24(E)	-	508.290	525.456	776.300	214.247	59.843	51.077	-	2135.2

Pakistan Economic Survey 2024-25

E: Estimated. * Including Pre-Primary, Mosque Schools, and Non-Formal Basic Education (NFBE).

Source: Ministry of Federal Education & Professional Training, Pakistan Institute of Education, Islamabad.

10.1-b Literacy, Gross Enrolment Rate (GER), Net Enrolment Rate (NER) and Out-of-School Children (OOSC)

PBS has not published the Pakistan Social and Living Standards Measurement (PSLM) Survey report since 2019-20, nor the Labour Force Survey since 2020-21, therefore, the literacy rates region-wise/category-wise are given as per Population and Housing Census, 2023 (Table 10.2). According to the Population and Housing Census, 2023, Pakistan's literacy rate stands at 60.65 percent. The male literacy rate is higher at 68.0 percent, compared to 52.84 percent for females. A significant contribution of the census was the inclusion of the literacy rate of transgender, which stands at 40.15 percent.

The literacy rate in urban areas is substantially higher than the national average, recorded at 74.09 percent, compared to 51.56 percent in rural areas. This highlights the continued challenge of the urban-rural divide in access to quality education. The divide is even more pronounced among females, compared to males and transgender. Punjab has the highest literacy rate among the provinces, followed by Sindh, Khyber Pakhtunkhwa, and Balochistan.

Table 10.2: Literacy Rate (10 Years and Above) Percent									
Ducyince/Auco		2023							
r rovince/Area	Male	Female	Transgender	Total					
Pakistan	68	52.84	40.15	60.65					
Rural	61.02	41.67	32.94	51.56					
Urban	78.13	69.71	42.4	74.09					
Punjab	71.98	60.19	41.3	66.25					
Rural	65.91	50.51	34.47	58.37					
Urban	80.37	74.01	43.37	77.3					
Sindh	64.23	50.21	37.45	57.54					
Rural	48.06	27.52	26.98	38.14					
Urban	76.27	67.8	39.28	72.26					
Khyber Pakhtunkhwa	64.57	37.15	44.67	51.09					
Rural	62.55	33.76	39.26	48.35					
Urban	75.06	55.39	48.48	65.55					
Balochistan	50.5	32.8	24.97	42.01					
Rural	44.16	26.59	22.2	35.74					
Urban	64.51	46.49	29.03	55.86					
Source: Population a	and Housing	Census-2023	, Pakistan Bureau	of Statistics					

Since the latest PSLM Survey is not available, the data presented on gross enrolment rate (GER), and net enrolment rate (NER), regionwise and category-wise, of basic education is based on PSLM 2019-20 as reported in Tables 10.3 and 10.4.

Table 10.3: Gross Enrollment Rates (GER) at the National/Provincial Level by Gender and Age (Percent)									
Location	GER	at the Pri vel (Age: 5	mary 5-9)	G Lev	ER at Mid el (Age: 10	dle)-12)	GER at Matric Level (Age: 13-14)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Pakistan	89	78	84	65	57	63	63	50	57
Punjab	93	90	92	68	66	67	68	62	65
Sindh	78	62	71	60	43	54	54	39	47
Khyber Pakhtunkhwa	98	79	89	84	53	70	71	39	56
Balochistan	84	56	72	56	34	47	47	21	36
Source: Pakistan Social a	and Livir	og Standard	s Measur	ement S	urvey (PSL	M) 2019	-20		

GER (primary, middle, and matric) is 84, 63, and 57, respectively, which has increased for males. Punjab has the highest GER at the primary,

middle, and secondary levels, and Balochistan has the lowest. In all provinces, GER of males is higher than that of females.

Table 10.4: Net Enrollment Rates (NER) at the National/Provincial Level by Gender and Age (Percent)											
Location	NER	NER at Primary Level		N	NER at Middle			NER at Matric			
		(Age: 5-9)		Lev	Level (Age: 10-12)			Level (Age: 13-14)			
	Male	Female	Total	Male	Female	Total	Male	Female	Total		
Pakistan	68	60	64	35	35	37	28	25	27		
Punjab	71	69	70	40	41	41	30	31	30		
Sindh	60	49	55	35	29	32	24	20	22		
Khyber Pakhtunkhwa	73	59	66	48	32	40	32	20	27		
Balochistan	65	45	56	31	20	26	18	09	14		
Source: Pakistan Social	l and Liv	ing Standar	ds Measu	irement S	Survey (PSI	LM) 2019	9-20				

NER (primary, middle, and matric) is recorded as 64, 37, and 27, respectively. NER at the primary level is higher for males in all provinces. However, middle education NER is higher for males in all provinces except Punjab. The same applies to NER at matric except for Punjab, where NER is higher for females. Fig-10.1 shows that 38 percent of the country's children are Out-of-School (OOS), more females out of school than males. Balochistan has 69 percent OOSC, followed by Sindh (47 percent), Punjab (32 percent) and Khyber Pakhtunkhwa (30 percent). In all provinces, more females are out of school than males.



Box-I: Availability of Basic Facilities in Public Schools

The overall quality of education is closely linked to the quality of school facilities. Well-designed classrooms and well-maintained equipment can improve teaching and learning outcomes. Infrastructure and school facilities are essential components of a comprehensive education system. They provide a safe and comfortable learning environment and contribute to the overall quality of education and the well-being of students. Investing in these aspects of education is crucial for students and society's long-term development and success. Adequate infrastructure ensures that students are comfortable while learning. Proper sanitation facilities, clean drinking water, and hygiene practices are essential for the health and well-being of students. Since the data is only available for government schools, the indicators presented in the box are based on public sector schools.

Around 67 percent of schools in the country have access to electricity. There are disparities among provinces, with Punjab and ICT having higher access while Balochistan consistently lags behind. Punjab and ICT have higher percentage of primary schools equipped with water facilities, but Balochistan and AJK faces challenges, with only 23 percent coverage. Toilet access in schools varies widely among provinces. Punjab, Khyber Pakhtunkhwa, and ICT have high coverage, but Balochistan struggles with only 40 percent access at the primary level. Pakistan maintains a moderate level of boundary wall access in schools, with Punjab, Khyber Pakhtunkhwa, and ICT leading in this area. As schools progress to higher levels, the availability of electricity, drinking water, toilets, and boundary walls increases.

The following tables show the availability of basic facilities, such as electricity, drinking water, toilets, and boundary walls, in primary, middle, high, and higher secondary schools along with their overall status.

Table-A: Acces	s to Electric	ity			Percent	Table-B: Availability of Drinking Water				Percent	
Region	Primary	Middle	High	Higher Sec.	Total	Region	Primary	Middle	High	Higher Sec.	Total
Punjab	98	100	100	100	99	Punjab	99	100	100	100	100
Sindh	27	47	79	88	31	Sindh	56	69	89	91	58
Khyber Pakhtunkhwa	85	87	96	99	86	Khyber Pakhtunkhwa	88	90	96	98	89
Balochistan	15	30	63	78	21	Balochistan	23	40	68	81	29
AIK	32	55	75	77	43	AJK	23	46	88	92	37
AJK CD	52	55	15	100		GB	68	90	98	100	77
GB	59	83	96	100	/0	ICT	100	100	100	100	100
ICT	100	100	100	100	100						
Pakistan	62	79	93	95	67	Pakistan	72	83	95	96	76
Table-C: Avail	Table-C: Availability of Toilet Percent						ilability of B	oundary W	all		Percent
Destau	Determine	Mean.	IRak	III alson Com	Tetel					Higher	Total

Table-C: Availa	admity of 10	net			Percent	Table D: Availability of Boundary Wall				Percent	
Region	Primary	Middle	High	Higher Sec.	Total	Region	Primary	Middle	High	Higher Sec.	Total
Punjab	99	100	100	100	99	Dunish	08	00	00	00	08
Sindh	53	74	93	94	57	Funjab	98	99	99	99	98
						Sindh	58	79	93	93	61
Khyber Pakhtunkhwa	86	88	96	99	87	Khyber Pakhtunkhwa	92	95	96	99	93
Balochistan	40	72	89	95	49	Balochistan	40	74	89	94	48
AJK	44	70	81	86	54	AJK	34	51	53	57	40
GB	72	92	96	100	80	GB	64	85	93	100	73
ICT	100	100	100	100	100	ICT	100	100	100	100	100
Pakistan	74	89	97	98	78	Pakistan	76	89	94	96	79

10.2 Expenditure on Education

Cumulative education expenditures by federal and provincial governments in FY 2025 (July-March) were estimated at 0.8 percent of GDP. Expenditures on education-related activities during FY 2025 decreased 29.4 percent and reached Rs 899.6 billion from Rs 1,251.06 billion. This position may improve up to the month of June as the expenditure data was available for July-March FY 2025, which is used for analysis. Disaggregated education-related expenditures in a historical context are given in Table 10.5 and Figure 10.2.

Voors		Current Expenditure	Development	Total	Percent of CDP
rears		Current Expenditure	Expenditure	Expenditure	(2015-16 Base)
	Federal	103,787	21,780	125,567	2.0
	Punjab	339,402	32,413	371,815	
8-19	Sindh	153,492	9,110	162,602	
2018	Khyber Pakhtunkhwa	132,516	20,195	152,711	
	Balochistan	49,298	6,029	55,327	
	Pakistan	778,495	89,527	868,022	
	Federal	83,266	31,300	114,566	1.9
	Punjab	337,562	35,378	372,940	
-20	Sindh	165,028	5,427	170,455	
5103	Khyber Pakhtunkhwa	162,778	18,523	181,301	
(1	Balochistan	53,640	8,111	61,751	
	Pakistan	802,274	98,739	901,013	
	Federal	90,974	5,646	96,620	1.4
020-21	Punjab	348,460	32,964	381,424	
	Sindh	183,718	10,538	194,256	
	Khyber Pakhtunkhwa	35,816	28,250	64,066	
2	Balochistan	55,924	9,936	65,860	
	Pakistan	714,892	87,334	802,226	
	Federal	26,910	30,945	57,855	1.7
	Punjab	389,264	46,535	435,799	
-22	Sindh	212,721	8,105	220,826	
021	Khyber Pakhtunkhwa	277,030	33,596	310,626	
2	Balochistan	67,995	8,553	76,548	
	Pakistan	9,73,920	127,734	1,101,654	
	Federal	97,857	51,186	149,043	1.5
	Punjab	448,529	44,199	492,728	
-23	Sindh	251,203	12,354	263,557	
022	Khyber Pakhtunkhwa	240,898	12,996	253,894	
~	Balochistan	80,439	11,394	91,833	
	Pakistan	1,118,926	132,129	1,251,055	
	Federal			91,783	0.8
£ ?	Punjab			381,516	
25() Mar	Sindh			277,258	
24- 1ul-1	Khyber Pakhtunkhwa			55,767	
50 C	Balochistan			93,295	
	Pakistan			899.619	

P: Provisional

Source: PRSP Budgetary Expenditures, External Finance Policy Wing, Finance Division, Islamabad.



10.3 Development Programmes FY 2025

10.3-a Federal Public Sector Development Programme (PSDP) FY 2025

Development expenditure across all sectors, particularly education, is closely linked to poverty reduction and socio-economic development. Despite financial constraints, the federal government remains committed to ensuring adequate investment in education and skills development, along with efficient public spending to achieve national learning goals. In the Public Sector Development Programme (PSDP) FY 2025, Rs 92.1 billion has been earmarked for the education sector, including higher education. During the FY 2025, the Ministry of Federal Education and Professional Training implemented 22 projects and programmes related to basic and college education, comprising 17 ongoing and 5 new initiatives, with a total allocation of Rs 20.75 billion. This includes two new Daanish School establishment projects in Islamabad Capital Territory (ICT), Azad Jammu & Kashmir (AJK), Gilgit-Baltistan (GB), and Balochistan, with an allocated budget of Rs 5.5 billion.

10.3-b Provincial Governments

Provincial governments have undertaken significant efforts to improve the education sector by addressing missing facilities, enhancing physical infrastructure, establishing IT and science laboratories, upgrading primary schools (for both girls and boys) to middle, high, and secondary levels, constructing new schools and colleges, and providing scholarships through endowment funds and other financial assistance schemes.

Punjab

In the Annual Development Programme (ADP) FY 2025, the Government of Punjab allocated Rs 65.5 billion for 142 development projects related to the education sector. Of this, Rs 42.5 billion was allocated for school education, Rs 17.0 billion for higher education, Rs 2.0 billion for special education, and Rs 4.0 billion for literacy and non-formal education. The portfolio has a significant portion of Rs 34.25 billion allocated under the Other Development Programme (ODP) to support public-private partnerships. including **Punjab** Education Initiatives Management Authority (PEIMA), Punjab Education Foundation (PEF), and Daanish Schools. Major initiatives include foreign-aided projects like Getting Results: Access and Delivery of Quality Education Services in Punjab (GRADES), expansion of the Programme, Afternoon Schools school infrastructure upgrades, and lab IT establishment. This investment reflects the government's continued emphasis on improving access, equity, and quality in school education while optimizing delivery through innovative public-private models.

The priority areas of the Medium Term Development Framework (MTDF) FY 2024-27 include enhancing teaching and learning practices to improve educational outcomes; ensuring adequate access to education from preprimary to secondary levels, including for marginalized groups and children with special needs; promoting quality education within safe, inclusive, and conducive learning environments; and strengthening governance in the education sector to ensure equitable access and highquality learning opportunities.

Sindh

In the Annual Development Programme (ADP) FY 2025, Sindh allocated Rs 48.031 billion for the School Education sector across 713 development schemes, including a significant portion dedicated to addressing foundational educational needs. The portfolio includes allocations for various sub-sectors, focusing on elementary and secondary education, reflecting a commitment to improving access and quality at all levels. A notable portion of Sindh's ADP is the emphasis on specific interventions such as the construction of shelter less primary schools and the rehabilitation of existing infrastructure, highlighting a focus on improving the physical learning environment. This investment signals Sindh's multifaceted approach to educational development. combining infrastructural improvements with targeted interventions to enhance educational outcomes and inclusivity.

The key features of the ADP FY 2025 included improving the quality of education, enrolling

out-of-school children, enhancing literacy initiatives, creating child-friendly environments in primary schools, strengthening teacher recruitment, training, and professional development, building the capacity of educational leadership and management, and establishing effective monitoring and evaluation mechanisms.

Khyber Pakhtunkhwa

The government of Khyber Pakhtunkhwa (KP) allocated Rs 15.26 billion in FY 2025 for 132 ongoing and 24 new development projects. Of this, Rs 10.58 billion was allocated for elementary and secondary education and Rs 4.67 billion for higher education. Within this distribution, a significant portion is dedicated to enhancing existing infrastructure and maintaining educational continuity through 82 ongoing programs. Recognizing the need for advancement, the ADP also injects support for 17 new programs, signaling intent to evolve and expand educational services. This investment strategy underscores the province's effort to sustain its current educational framework along with fostering development and innovation within the sector.

Khyber Pakhtunkhwa's Education Sector Plan (ESP) emphasizes on marginalized groups, including girls, special children, refugees, and those residing in the Newly Merged Districts (NMDs). Achieving meaningful progress in access, retention, equity, quality, and governance will require a sustained commitment and adequate investment to build a more robust and effective education system.

Balochistan

Balochistan's Public Sector Development Programme (PSDP) for FY 2025 outlined a commitment to advancing socio-economic development through strategic investments, with a total outlay of Rs 48.47 billion for education sector including an amount of Rs 20.42 billion for higher education and Rs 28.04 billion for secondary education to the total 389 ongoing projects and 168 new development projects. Prioritizing the completion of ongoing projects, the plan aims to translate investment into tangible outcomes. Key sectors receiving substantial allocations include enhancing literacy and educational outcomes which are crucial for human capital development.

Azad Jammu and Kashmir

The Annual Development Programme (ADP) FY 2025 for Azad Jammu and Kashmir allocated significant resources to Elementary & Secondary Education, with a total allocation of Rs 3.0 billion across 22 schemes. This funding is distributed across various sub-sectors, including Primary, Middle, Secondary, and Higher Secondary Education, demonstrating comprehensive approach to educational development. A considerable portion of the allocation was dedicated to new initiatives, with Rs 2.1 billion earmarked for 11 new schemes, indicating a focus on expanding and improving educational infrastructure and access. Overall, the ADP reflected a commitment to enhancing the region's elementary and secondary education ongoing through projects and new developmental efforts.

Gilgit-Baltistan

The Gilgit-Baltistan ADP for FY 2025 allocated resources to the School Education sector. emphasizing the enhancement of educational infrastructure and access, focusing on projects totaling approximately Rs 197.48 million. This included allocations for improving facilities such as laboratories and libraries (Rs 23.063 million), providing transport solutions for educational institutions (Rs 8.694 million), establishing Early Childhood Development (ECD) centers (Rs 8 million), and transforming schools into 'smart schools' (Rs 54.663 million). This investment strategy indicated a regional priority in strengthening the general school education system through targeted financial commitments.

10.4 Technical and Vocational Education

National Vocational & Technical Training Commission (NAVTTC)

The NAVTTC is mandated to provide professional training to the youth to help the skilled workforce enhance national productivity and increase workforce exports abroad. It aims to promote, facilitate, regulate, strategize,

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revamp, train, and approve curricula and provide policy direction for the country's entire Technical & Vocational Education and Training (TVET) and skill development system. Article 38 of the Constitution states that the "State shall provide for all citizens, within the available resources of the country, facilities for work and adequate livelihood." Hence, the Government has taken various initiatives to create job opportunities, which may also trigger the Sustainable Development Goals (SDG) goal 04 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) and SDG target 03 (Equal Access to Technical/Vocational and Higher Education) and 8.6 (Promote youth employment, education, and training).

Pakistan's workforce is one of its most valuable assets, especially given the country's demographic dividend. With a significant portion of the population under the age of 30, the Government of Pakistan has placed high priority on skill development to improve employment opportunities, reduce poverty, and by enhance the skills of youth. The Federal Government focuses on TVET uplift through the "Skill for All" Strategy and youth productive engagement nationwide.

NAVTTC Achievements FY 2024

NAVTTC, the apex body overseeing TVET across the country, has been at the forefront of implementing skill development initiatives. NAVTTC's strategic initiatives are reshaping the TVET landscape, fostering skill development, and addressing systemic TVET challenges in Pakistan. Last year, NAVTTC's TVET-related initiatives and the Prime Minister's Youth Skill Development Program registered substantial progress, creating a robust, inclusive, and globally competitive workforce for sustainable national development. The significant achievements of NAVTTC during FY 2024 include implementing numerous measures at the federal level to oversee and standardize the TVET sector. These initiatives aim to cultivate a proficient and skilled workforce that aligns with international job market standards across diverse sectors of the economy, such as construction, hospitality,

services, energy, and other emerging fields.

Following is the PSDP portfolio that pertains to the youth skill development sector:

- i. Prime Minister Youth Skill Development Program (PMYSDP) 2023-26: Rs 15,000 million
- ii. Skill Development Program (NAVTTC): Rs 4,700.00 million
- iii. Skill for All Program: Rs 9,877.00 million

The TVET sector has undergone significant reforms, with a shift towards demand-driven training, industry linkages, and international certification standards.

a. Completed Initiatives

- 51,833 trainees completed PMYSDP Batch
 1.
- Special Skill Training for AJK: 576 trainees in Batch 1, 899 in Batch II.
- Special Skill Training for GB: 932 trainees in Batch 1, 600 in Batch II.
- ▶ 4,780 students completed training under the Summer of Code initiative.
- 338 students graduated from High Impact IT Training across 16 FDE colleges.
- ▶ 2,580 madrassa youth trained under PMYSDP.
- ▶ 650 women empowered through the "She Fixes" initiative.
- ▶ 825 individuals completed Foreign Language Training via NAVTTC, NUML, and FDE.
- ▶ 56 graduates from Ghulam Ishaq Khan Institute (GIKI) completed skill training.
- 25 students completed Chip Design Training at NUST.
- ▶ 600 youth trained under the Skill Development Program for NMDs (Batch 1 & II).
- Takamol Skill Verification: 54,479 certified across 75 trades and 32 centres.
- ▶ 1,196 trainees passed out from the End-to-

End Skill Program.

b. New /Ongoing Initiatives

- The NAVTTC Annual Plan (2025-26) outlines strategic initiatives aimed at equipping Pakistan's youth with demanddriven, globally recognized skills to support economic transformation and inclusive growth. Building upon the foundations laid in the 2024-25 cycle, this plan integrates the priorities of the 13th Five-Year Plan and the "Uraan Pakistan" development framework. Kev focus areas include workforce readiness, international certification, labour market linkages, promoting of skilled labour exports, particularly from underdeveloped regions. Aligned with "URAAN Pakistan" and the 5Es Framework, NAVTTC's 2025-26 objectives and some development initiatives are to:
 - a) Expand access to high-quality, demanddriven skills training nationwide.
 - b) Enhance employability through industry partnerships and enterprise-led training.
 - c) Improve economic participation of marginalized groups, especially women and youth from rural areas.
 - d) Increase international mobility of the skilled workforce and remittance generation.
 - e) Promote innovation and digitalization across the TVET ecosystem.
 - f) Specialized Training for marginalized groups including women, madrassa students, and youth from NMDs, Balochistan, GB, AJK, and South Punjab.
 - g) Enhance digital skills through High-End IT Training & Summer of Code initiatives.
 - h) Launch NAVTTC Smart Skills Platform for real-time progress tracking and course delivery.
 - i) Establish High-Tech Labs and Mechanical Sheds in industrial hubs for trades including robotics, welding, industrial automation, and scaffolding.
 - j) Enhance capacity of training institutions for international accreditation.

- k) Operationalize the National Accreditation Council (NAC) to ensure quality assurance in training delivery.
- Strengthen collaborations with GCC, EU, and other labor destination countries to align certification and training standards with international requirements.
- m) Scale up foreign language training and soft skills programs to support overseas placement.
- NAVTTC has launched diverse programs targeting youth, marginalized communities, and the informal sector workforce. The goal is to improve access, quality, and relevance of vocational training. Major initiatives include partnerships with international bodies for high-end technical training, capacity building of training providers, using of digital tools to enhance transparency and accessibility.
- NAVTTC has expanded its Skill for All (Hunarmand Pakistan) program, introduced advanced TVET reforms, and strengthened partnerships with industry leaders to promote job creation and exports. These strategic efforts contribute to reducing unemployment, boosting productivity, and preparing Pakistan's workforce for both local and international labor markets.
- NAVTTC has started several initiatives under the Skills Development Plan (2023-28) to improve skill training, ensure quality, and achieve self-sustainability. These initiatives include launching an industrybased training program, strengthening the National Skills Information System (NSIS), accrediting TVET institutes, improving countries facilitation centers in of destination, providing entrepreneurship training to youth, and creating the NAVTTC Endowment Fund.
- During FY 2025, the Public Sector Development Programs supported NAVTTC in implementing several impactful skill training projects. These initiatives focused on broader regional inclusion, prioritizing underdeveloped and conflict-affected areas such as the Newly Merged Districts (NMDs), Balochistan, and

South Punjab. Training programs were conducted in collaboration with provincial TEVTAs and training centers. Projects aligned with national employment priorities and local labor market demands. The RPL initiative gained traction, certifying thousands of informal sector workers across provinces. Skill centers and digital job placement platforms were also strengthened through PSDP support. Investment Facilitation Council (SIFC), Prime Minister's Office and the chairman PMYSDP, Sector based training of 60,000 youth in 10 sectors and 230 demand driven trades/occupation under PMYSDP (2024-25) includes IT (25,000), Driving/HMO (3,000), Textile (4,000), Agriculture (3,000), Construction (12,000), Services-Aesthetics (4,000), Hospitality-Tourism (4,000), Banking (500), Language (2,000), and Mining (1,000).

In line with the direction of Special

Box-II: Quantum Mechanics Education: A Corridor to Future Innovation and Modern Technologies

Quantum mechanics education is a gateway to understanding the most revolutionary technologies of the future. Quantum mechanics is crucial in education for future generations because it underpins many modern technologies and advancements. Quantum mechanics is not only essential for physicists but also for professionals in fields such as engineering, computer science, finance, and medicine. Quantum mechanics is the substratum of numerous technologies, including lasers, transistors, MRI scanners, and electron microscopes. Understanding quantum mechanics is vital for developing a workforce capable of innovation in areas like quantum computing, materials science, and medicine. Without a foundation in quantum mechanics, future engineers and scientists will not be well equipped to innovate in these fields. Quantum science is the essence of emerging technologies like quantum computing, quantum encryption, and quantum sensing, which have the potential to revolutionize various industries. Quantum computing education goes beyond just quantum mechanics and algorithms, incorporating interdisciplinary knowledge from computer science, physics, mathematics, and engineering. This approach fosters interdisciplinary learning, making it applicable to various sectors. For example, quantum computing plays a significant role in fields like cryptography and artificial intelligence, and educational programs in quantum physics equip students to work at the intersection of these areas.

Moreover, it fosters critical thinking and advanced problem-solving skills, preparing students to thrive in a future increasingly shaped by quantum technologies. The quantum science education equips students to navigate and leads in a world where quantum technologies will play an increasingly pivotal role and to contribute to a rapidly evolving technological landscape. Therefore, embedding quantum mechanics into educational curricula is not only a scientific necessity but also a strategic investment in the future of innovation. The abstract nature of quantum mechanics encourages students to develop critical thinking and abstract reasoning skills, which are valuable across various disciplines. By introducing quantum concepts at an early age can ignite curiosity and interest in STEM (Science, technology, engineering, and mathematics) fields among diverse student groups. Additionally, quantum mechanics provides a framework for understanding fundamental cognitive patterns and the nature of scientific knowledge.

The United Nations General Assembly (UNGA) has declared 2025 as the "International Year of Quantum Science and Technology," under the leadership of **United Nations Educational, Scientific and Cultural Organization** (UNESCO), highlighting the global importance of quantum education and research and to promote global collaboration and address critical challenges in science and technology.

Despite the complexity of quantum concepts, the future of quantum science education is bright, driven by increasing investments in research, development, and educational programs. Globally, many developed countries, in cooperation with private sector companies, are investing heavily in quantum technologies, making the need for trained quantum experts more pressing than ever. As these technologies continue to evolve, so too will the curriculum and teaching methods used in quantum science education. Institutions worldwide are expanding their offerings, and partnerships with tech companies and research labs are providing students with valuable real world experience. In the coming years, the growing demand for quantum researchers, engineers, and technologists will make quantum science education even more critical. This global need will create exciting opportunities for those equipped with the right skills and knowledge, making it an exciting field to pursue for anyone passionate about the future of science and technology. In view of the significance as mentioned earlier, the GoP/HEC and all other concerned stakeholders must take into account the following:

a) Encourage quantum educational programs at all levels, from graduate to postgraduate, to build a strong quantumliterate workforce by searching for existing quantum education programs at these levels globally. b) Supports the creation of quantum science curricula to prepare students for careers building by assessing the growing demand for skilled professionals in quantum technology and based on industry demand. c) Enhances/foster collaboration between academia, government, and industry to develop tailored training programs. d) Establishes initiatives to attract and retain a diverse talent pool in Quantum Information Science (QIS) related fields. e) Emphasizes training in multidisciplinary skills, blending physics, computer science, mathematics, and engineering by analyzing training programs focusing on multidisciplinary skills in quantum technology.

10.5 Higher Education Commission (HEC)

Higher Education Commission (HEC) provides overall strategic guidance and enabling environment for reforms in higher education sector since 2002. It is a forum for higher level decision making and interface with the national political leadership. The quality of education and research has been the key driver for socioeconomic development in the globalized world. The Higher Education Commission has been focusing on three main objectives: enhancing access, improving quality, and ensuring the relevance of higher education and research in the country. While access to higher education has increased, the country still lags behind compared to global standards. To address these challenges, the Commission has implemented various measures aimed at expanding access, developing human resources, and strengthening physical infrastructure.

10.5-a Key Achievements (July-March FY 2025):

i. Public Sector Development Programme (PSDP 2024-25)

Under the PSDP 2024-25, the Federal Government allocated Rs 61.12 billion, including Rs 12 billion for the laptop scheme to the Higher Education Commission for the implementation of 159 development projects (138 ongoing & 21 new) of Public Sector universities and HEC.

The following major development initiatives have been launched;

- i. Establishment of 05 National Centers in emerging fields like; Nano Technology, Quantum Computing, Manufacturing, Brand Development and Growth Center.
- ii. PM's Youth Laptop Scheme (Phase-IV).

- iii. PM's National Volunteer Corps program.
- iv. Establishment of National Institute of Intelligence and Security Studies (NIISS).
- v. Establishment of National Cyber Security Academy (NCSA).

Out of the total allocation of Rs 61.115 billion, the government authorized the same amount (100 percent), and HEC released Rs 32.6 billion to development projects of universities/HEIs (July-April 2025), while Rs 9,000 million has been retained for PM's Laptop Scheme. During the current financial year, 26 projects have been planned for completion; of these, funding to 18 projects has already been completed. Some of the new initiatives related to the vision of "URAAN Pakistan" are as under:

- The Government of Pakistan in its vision "URAAN Pakistan", has several goals for the growth and development of the country. One of the most important key thematic areas is E-Pakistan, which mainly includes "Accelerating Growth of Human Capital". In this regard, five National Centers have already been established, whereas five more National Centers have been planned in the emerging areas. Similarly, numerous initiatives have been taken to modernize the IT landscape and eco-system of the higher education sector in Pakistan by Providing 100,000 laptops to students and establishing Centralized Data Centers, High Performance Computing (HPC), Enterprise Resource Planning (ERP) for Universities, Learning Management System (LMS), and Smart Campuses and Classrooms.
- Under the "Equity & Empowerment" which mainly focuses on access to higher education and improving the quality of

higher education, HEC has initiated numerous development projects for strengthening and expansion of the infrastructure of public sector universities/HEIs and their campuses. especially in the marginalized areas of Balochistan, Southern Punjab, Interior Sindh, Merged Areas of Khyber Pakhtunkhwa and AJK / Gilgit Baltistan.

ii. Human Resource Development

Human Resources play a vital role in the development of countries and economic prosperity. Higher Education Commission is committed to enhancing the capacity of human resources by providing scholarships, both locally and abroad, in emerging fields. The scholarships are specifically focused on enhancing the capabilities of students and faculty of the public sector universities.

- Currently, there are 17 scholarship projects (Local & Foreign) with the allocation of Rs 8.340 billion during CFY to provide quality education at the Undergraduate and Postgraduate level (students & faculty) in top-ranked local and foreign universities in emerging disciplines. Under these scholarship schemes, around 18.500 scholarships will be provided, including 14,000 in local universities and 4,500 topranked international/foreign universities.
- In FY 2025, around 600 foreign scholarships have been awarded. 147 scholars have returned after completing their research and PhDs. More than 1000 indigenous scholarships have been awarded, mainly to students of FATA, Balochistan, and Gilgit-Baltistan.
- Around 700 scholarships have been awarded to students from Afghanistan and Sri Lanka to strengthen the bilateral ties with these neighboring countries. Under the Interim Placement of fresh PhDs, 150 faculty members have been trained and placed in the public sector universities.

iii. Higher Education Statistics (HES): Achievements

a. Ranking of Universities

- For analysis, analytics and computation of KPIs, a business intelligence and data analytics platform has been configured. The ranking model has been developed with multiple dimensions on data provided by universities and internal HEC divisions.
- Results of normalized relative percentage scores against five major and 61 minor ranking parameters were shared with 152 HEIs.

b. Unified Information System (UIS)

- A detailed activity was carried out to identify data entities and their attributes, which are collected against various tasks/ processes of HEC's 17 divisions.
- RFP draft for UIS, identified Master data, and its attributes, with evolving requirements.

c. HES

- Successfully collected and finalized 85 percent of HES data for the FY 2023.
- A Survey on the employability data for the past 05 years of graduates has been conducted and data from more than 160 HEIs has been collected.
- Provision of the requisite information for the year 2022-23 on the UNESCO prescribed template to the Pakistan Institute of Education (PIE), Islamabad).
- Provision of information for the Economic Survey of Pakistan for FY 2023 to facilitate higher education institutions and serve as an engine of growth for the socio-economic development of Pakistan.
- Provision of the information for the Medium Term Performance-Based Budget FY 2025 to FY 2027.

d. Ph.D. Country Directory (PCD): 2683 online PCD applications were approved during FY 2025 as of 25-3-2025.

iv. Research & Development

Programme	Policy Measures/ Action Taken - July 2024 to March 2025
National Research Programme for Universities (NRPU)	 Around 7000 researchers participated in the competition. Disbursement of funds amounting Rs 696.80 million to 1081 ongoing projects. Total 316 projects completed.
Technology Development Fund (TDF)	• A total of 38 projects have been awarded and the 1st instalment was released.
Business Incubation Centers (BICs), ISF	• Establishment of Business Incubation Centers at 2 BICs, i.e, IBA- Karachi and University of Balochistan.
Research Grants (Grand Challenge Fund (GCF), Local Challenge Fund (LCF), Technology Transfer Support Fund (TTSF), Rapid Technology Transfer Grant (RTTG), Center of Excellence (CoE) under Higher Education Development in Pakistan (HEDP)	 About Rs 2.862 billion has been released to ongoing projects of GCF, LCF, TTSF, RTTG, and COEs. Total 76 projects completed (Closure of projects is in progress), 05 projects closed and 17 projects are ongoing (progress reports under review for completion). A total of six Innovator Seed Fund (ISF) Awards have been successfully completed and 37 are under process for administrative closure.
Offices of Research Innovation and Commercialization (ORICs)	 Recognition of 4 ORICs at universities i.e, Agriculture University Peshawar, Iqra National University Peshawar, DHA Suffa University Karachi, and Bahauddin Zakariya University Multan. Identification and Coordination of meetings with industrial associations, chambers, and representatives for consultation on the industrial research grant areas solicitation. Facilitating research linkages of ORICs with industrial and public sector organizations, i.e, NIC Islamabad, NADRA, and SECP.
Access to Scientific Instrumentation Program (ASIP)	 The program's policy framework has been revised to better align with the evolving research needs of scholars and to streamline the grant application and utilization process. 172 applications have been approved for funding, allowing MS/ PhD students to access advanced scientific testing and analysis services not available at their home institutions.
National Centers (NCs)	 Eight 08 National Centers (NCCS, NCRA, NCAI, NCBC, NCGSA, NCLBG&G, NCIB, and DDSDP) operating under PSDP in different Universities have achieved major milestones as enshrined in their relevant PC- I. PC-1 of 04 projects (NCCS, NCRA, NCAI, and NCBC) have been revised by CDWP in its meeting held on September 03, 2024. National Steering Committee (NSC) meetings (NCLBG&G, NCRA and NCCS) held to review progress. As per revised PC-I, endowment fund of Rs 500 million has been approved for each of the 04 Centers of emerging technologies (NCCS, NCRA, NCRA, NCAI, and NCBC).
Pak-France PERIDOT Researchers Mobility Grant Program	 41 applications were received in FY 2025. 3 projects have been selected out of 41 applications for funding in the joint selection committee meeting. Disbursement of funds to 08 previous projects. Payment of Review Fee to the reviewers.
Travel Grant for Researchers	 A total of 164 Travel Grants have been awarded. An amount of RS 25 million was released to reimburse 79 Travel Grant cases.
Seminar Conference Grant	• 94 Seminar Conference Grants have been awarded and RS 14 million has been disbursed for reimbursing 28 approved cases.
Research Journals	• 1147 applications were received and 587 were recommended.

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Programme	Policy Measures/ Action Taken - July 2024 to March 2025
	 Policy revision of research Journals. Capacity building workshops are in progress with on-site/online modes in 6 cities all over Pakistan with expected participation of around 500 onsite and over 500 online participants.
Digital Library (DL)	 Revision in Digital Library's Cost-Sharing Policy to facilitate HEIs and enhance utility. Saving of US \$ 376,562 (106 million) in renewal of 2025 contracts through rigorous negotiation sessions. Introduction of demand-driven resource acquisition to save the national exchequer. Cumulative usage of DL resources has soared to 23 million due to extensive awareness and training drives.
HEC Research Awards	 151 applications received and reviewed by Panels and Experts through the online RGMS portal. Organize the 10th HEC Research Awards Ceremony by May 2025. Adjustment of all financial transactions related to the 9th HEC Research Awards Ceremony.
Pak-UK Education Gateway Project	 Three REF Steering Committee Meetings were held. Advertisement has been launched to hire a consultant for REF development in January 2025. After a successful review, the final installment of Rs 9 million was released to the ICRG projects.
Prime Minister's National Innovation Award (PMNIA)	• Two rounds of awards were completed with 100 awards (50 each round). Out of them, 70 also opted for incubation and further grant was disbursed during their incubation at 18 incubation centers.

v. Prime Minister's Youth Programme (Talent hunt and sports activities):

The registration drive for the Talent Hunt Youth Sports League was executed through a wellrounded and inclusive media and outreach strategy. The campaign also saw the active involvement of local sports clubs, the Pakistan Sports Board, provincial sports boards, and national sports federations, helping achieve broad-based participation and representation from all corners of the country. Details are as under:

Registration of Players for onward Activities in FY 2025								
Sports	Men	Women	Total					
Boxing	1,440	250	1,690					
Cricket	26,009	2,731	28,740					
Grand Total	27,449	2,981	30,430					

Registration Drive-Sports							
Sports	Description	Total					
Table Tennis	Completed	5,267					
Handball	Completed	4,300					
Judo	Completed	2,638					
Cricket	On-going	28740					
Boxing	On-going	1690					
Grand Total		42,635					

vi. Higher Education Development in Pakistan (HEDP):

HEDP is a World Bank-supported project (US\$ 400 million). It assists HEC in key strategic areas of research and development, improving the quality of higher education and supporting affiliated colleges, leveraging technological resources and capacity building of faculty/ staff through the National Academy of Higher Education (NAHE). There are six components of the project.

a. IT Component of HEC Pakistan HEDP Project

The IT component of the Higher Education Development Program (HEDP) by the HEC aims to modernize the IT landscape of the education sector in Pakistan and foster a more efficient, secure, and innovative academic environment by introducing advanced IT solutions. Under this programme, some initiatives are as follows:

Sub component	Key Initiatives
Centralized Data Center	 Establishment of a centralized data center to consolidate and manage data across universities. Enhanced data security and streamlined data management processes. Improved accessibility and reliability of data for academic and administrative purposes.
High Performance Computing (HPC)	 Introduction of high-performance computing resources to support advanced research and development. Facilitation of complex computational tasks and large-scale data analysis. Empowerment of researchers and students with cutting-edge technology for innovative projects.
Enterprise Resource Planning (ERP) for Universities	 Implementation of ERP systems to integrate and automate university operations. Improved efficiency in administrative processes such as finance, human resources, and student management. Enhanced decision-making capabilities through real-time data insights.
Learning Management System (LMS)	 Deployment of a robust LMS to support online and blended learning environments. Provision of tools for course management, content delivery, and student engagement. Increased accessibility to educational resources and flexibility in learning.
Blockchain for Degree Attestation	 Implementation of blockchain technology to secure and streamline the degree attestation process. Ensuring transparency, efficiency, and authenticity of academic credentials. Reducing the risk of fraudulent degrees and enhancing trust in the verification process.
Data Warehouse for Data Visualization	 Establishment of a data warehouse to aggregate and organize educational data from various sources. Enabling comprehensive data analysis and reporting to support decision-making. Providing stakeholders with valuable insights through advanced data visualization tools.
Hybrid Cloud for Education Sector	 Deployment of a hybrid cloud infrastructure to combine on-premises resources with public and private cloud services. Enhancing flexibility, scalability, and cost-efficiency in managing educational IT resources. Supporting remote learning, research, and administrative functions with improved agility and resilience.

b. Impact of these projects on Higher Education

The IT Component of the HEC Pakistan HEDP Project is expected to have a significant positive impact on both students and faculty:

	Impact on Students	Impact on Faculty						
1.	Enhanced Learning Experience:	1. Streamlined Administrative Tasks:						
_	Access to Resources: The Learning Management System (LMS) will provide students with easy access to a wide range of educational resources, including lecture notes, assignments, and multimedia content	- E ac as	CRP Systems: Faculty will benefit from automated dministrative processes, reducing the time spent on tasks such s grading, scheduling, and record-keeping.					
_	Flexible Learning: Students will benefit from flexible learning options, allowing them to study at their own pace and access materials anytime, anywhere.	 Data Management: The centralized data center will simplify data management, making it easier for faculty to access and analyze academic data. 						
2.	Improved Research Opportunities:	2. E	mianteu Teatming Tools.					
_	High Performance Computing (HPC): Students engaged in research will have access to advanced computational resources, enabling them to conduct complex simulations and data analysis.	 L te in R 	MS Integration: Faculty will have access to advanced eaching tools through the LMS, enabling them to create interactive and engaging course content. Real-Time Feedback: The LMS will allow faculty to provide					
_	Collaborative Projects: The centralized data center will	experience.						
	facilitate collaboration among students from different universities, promoting interdisciplinary research.	3. R	Research Support:					
3.	Skill Development:	- H	IPC Resources: Faculty involved in research will have access					
_	Technical Skills: Exposure to modern IT infrastructure and tools will help students develop valuable technical skills that are in high demand in the job market.	to ac - C w	 high-performance computing resources, supporting dvanced research projects and publications. Collaboration Opportunities: The centralized data center /ill facilitate collaboration with other researchers, both 					
-	Digital Literacy: Using ERP and LMS systems will enhance students' digital literacy, preparing them for future careers in a technology-driven world.	na	ationally and internationally.					

10.5-b Pakistan HEIs Enrolment, Region, Sectors

To enhance equitable access to quality higher education, total number of universities in the country, both in the Public Sector & Private Sector, has increased to 269 (Public: 160 & Private: 109), with 58,814 teachers in both public and private sectors functional in FY 2024.

Table 10.6 depicts details of enrolment of HEIs for the period FY 2024, while Table 10.7 presents information related to faculty in HEIs. The overall enrollment increased by 2,010,672 (4.2 percent) for the year FY 2024 as compared to 1,929,295 in FY 2022.

 Table 10.6: Region-wise and Gender-wise Enrolment (Provisional) of Public and Private Sector Pakistani HEIs; 2023-24.

Region		Public			Private		Overall	Overall	Overall
	Male	Female	Total	Male	Female	Total	Male	Female	Total
AJK	11,685	13,021	24,706	1,062	1,739	2,801	12,747	14,760	27,507
Balochistan	20,373	13,750	34,123	1,675	698	2,373	22,048	14,448	36,496
Federal	325,406	303,245	628,651	38,767	31,993	70,760	364,173	335,238	699,411
Gilgit-Baltistan	4,250	4,348	8,598	-	-	-	4,250	4,348	8,598
Khyber	102,407	46,084	148,491	28,850	12,208	41,058	131,257	58,292	189,549
Pakhtunkhwa									
Punjab	240,020	319,975	559,995	90,268	70,699	160,967	330,288	390,674	720,962
Sindh	122,280	93,762	216,042	65,785	46,322	112,107	188,065	140,084	328,149
Total	826,421	794,185	1,620,606	226,407	163,659	390,066	1,052,828	957,844	2,010,672
Source: HEC									

Table 10.7:Region-wise PhD and Non-PhD Faculty	
in Pakistani HEIs; 2023-24 (Provisional)	

Non-PhD	PhD											
725	414											
1,993	662											
6,860	5,043											
36	94											
4,360	3,394											
11,866	9,151											
10,640	3,576											
36,480	22,334											
(62.03%)	(37.97%)											
	Non-PhD 725 1,993 6,860 36 4,360 11,866 10,640 36,480 (62.03%)											

Source: HEC

Concluding Remarks

Pakistan's literacy rates, enrolment, and various educational benchmarks show gradual but steady improvement. This positive trend is government's primarily driven by the unwavering commitment to enhancing both the quality and reach of education through a series of reforms, policy interventions, and strategic resource allocation. Recognizing education as a fundamental catalyst for fostering social cohesion, resilience, and the transition to a knowledge-based economy, the government is placing paramount importance on delivering inclusive, effective, and equitable education across the country. By ensuring access to quality education for all, Pakistan is not only working to combat illiteracy but also laying the groundwork

for sustained socio-economic progress and longterm development. However, a significant challenge remains: addressing the issue of outof-school children, which continues to be one of the foremost obstacles facing the education sector. The government is fully committed to dedicating substantial resources and concerted efforts to align Pakistan's educational standards with those of its regional counterparts. This will require substantial resource allocation coupled with a renewed focus and sustained engagement from all stakeholders, including governmental bodies, educational institutions, and civil society.

In addition to improving basic education, there is a pressing need for reforms in college and higher education provisions to better equip the younger generation with the skills necessary for the demands of a rapidly evolving global economy. Both the public and private sectors need to collaborate in creating a robust, forwardlooking educational infrastructure that can support Pakistan's development aspirations. The ongoing emphasis on expanding access to education, improving quality, and fostering greater equity will ultimately shape the future of Pakistan, ensuring that every child has the opportunity to succeed and contribute to the nation's prosperity.

TABLE 10.1

NUMBER OF EDUCATIONAL INSTITUTIONS BY KIND, LEVEL & SEX

													Numbers
	Prim	ary*	Mid	ldle	Hi	gh	Techni	cal &	Highe	r Sec/	Deg	ree	Univer-
Veen	School	s (000)	School	s (000)	School	s (000)	Vocati	ional	Inter C	olleges	Colle	eges	sities
Year							Institutions						
	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total
2010-11	155.5	58.2	41.6	20.4	25.2	9.5	3,224	2,206	3,435	1,690	1,558	814	135
2011-12	154.7	57.0	41.9	21.0	28.7	11.6	3,257	2,229	4,515	2,184	1,384	643	139
2012-13	159.7	60.1	42.2	21.4	29.9	12.3	3,290	2,253	5,030	2,410	1,534	683	147
2013-14	157.9	60.3	42.9	21.1	30.6	12.6	3,323	2,276	5,179	2,462	1,086	518	161
2014-15	165.9	66.0	44.8	22.4	31.3	13.1	3,579	1,819	5,393	2,567	1,410	308	163
2015-16	164.6	65.3	45.7	27.0	31.7	15.6	3,746	1,514	5,470	1,437	1,418	260	163
2016-17	168.9	66.1	49.1	27.9	31.6	14.7	3,798	1,536	5,130	2,689	1,431	344	185
2017-18	172.5	73.5	46.7	23.5	31.4	13.5	3,740	1,330	5,754	2,654	1,659	834	186
2018-19	180.1	80.7	47.3	23.7	31.7	13.7	3,740	1,330	5,876	2,634	2,893	1,425	202
2019-20	180.1	85.4	47.0	26.9	31.7	14.5	3,740	1,330	5,898	2,738	2,983	1,500	209
2020-21	180.2	85.1	47.2	26.5	34.2	15.1	3,740	1,330	7,102	3,271	3,021	1,515	220
2021-22	162.1	70.8	47.8	24.2	34.6	15.1	4,182	1,629	8,113	3,711	2,487	1,235	220
2022-23	168.2	77.9	51.0	25.6	39.4	17.2	4,406	1,724	9,004	4,241	2,573	1,278	247
2023-24 (E)	166.0	77.3	51.8	26.1	41.3	18.1	4,563	1,826	9,963	4,758	2,516	1,252	269
E: Estimated		*: Including Pre-Primary, Mosque Schools and Non-Formal Basic Education											

Notes:

1: All figures include Public & Private Sector data

2: Female institution includes percentage of mixed institutions

TABLE 10.2

ENROLMENT IN EDUCATIONAL INSTITUTIONS BY KIND, LEVEL & SEX

														Numbers
	Primary Stage I-V (000)		Primary Stage Middle Stage I-V VI-VIII (000) (000)		High	High Stage IX-X		Technical & Vocational (000)		Higher Sec/ Inter Colleges (000)		ree		
¥7					IX							Colleges		sities
i cai					(000)		(0							
	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female
2010-11	18,063	7,971	5,644	2,421	2,630	1,103	281	106	1,188	408	431,180	218,374	1,107,682	521,284
2011-12	18,677	7,905	6,020	2,573	2,753	1,155	290	109	1,294	367	497,152	222,098	1,319,799	642,198
2012-13	18,790	8,278	6,188	2,653	2,898	1,215	302	113	1,400	395	641,539	234,006	1,594,648	805,062
2013-14	19,441	8,567	6,461	2,798	3,109	1,303	309	117	1,234	497	465,435	240,585	1,594,648	805,062
2014-15	19,847	8,778	6,582	2,843	3,501	1,493	320	112	1,665	662	510,588	82,479	1,299,160	602,550
2015-16	21,551	9,534	6,922	3,026	3,653	1,580	315	112	1,698	675	518,144	86,134	1,355,649	602,509
2016-17	21,686	9,660	6,996	3,088	3,583	1,541	345	120	1,595	618	537,407	89,512	1,463,279	667,912
2017-18	22,931	10,093	7,362	3,273	3,861	1,692	433	148	1,688	765	604,614	294,388	1,575,793	695,028
2018-19	23,588	10,625	7,634	3,426	3,969	1,755	433	148	2,140	984	725,631	402,603	1,858,704	832,299
2019-20	23,758	10,698	7,870	3,544	4,015	1,784	433	148	2,227	1,019	771,636	416,679	2,001,695	913,559
2020-21	24,352	10,925	8,415	3,784	4,360	1,915	433	148	2,320	1,062	757,886	404,385	2,226,251	1,008,087
2021-22	23,849	10,732	8,767	3,996	4,490	2,001	438	153	2,146	990	623,392	333,327	2,226,251	1,008,087
2022-23	24,613	11,162	9,433	4,350	4,715	2,134	453	151	2,335	1,091	660,705	374,776	1,936,329	886,595
2023-24 (E)	24,827	11,275	9,877	4,585	4,892	2,226	458	152	2,378	1,115	648,882	369,595	1,952,502	898,163

E : Estimated

Notes:

1. All figures include Public & Private Sector data

2. Enrolment of Deeni Madaris and Non-Formal Basic Education are included.

TABLE 10.3

NUMBER OF TEACHERS IN EDUCATIONAL INSTITUTIONS IN PAKISTAN, BY KIND, LEVEL & SEX

													Numbers
	Primary Schools*		Primary Schools* Middle Schools		High S	High Schools		Technical & Voca-		Higher Sec/		Degree	
Year	(00	10)	(00	0)	(00	10)	tional Ins	titutions	Inter Co	olleges	Coll	eges	sities
	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total
2010-11	440.5	210.1	335.0	220.3	452.8	235.3	15,591	4,993	81,183	39,378	36,349	16,181	63,557
2011-12	427.4	198.6	351.4	233.9	458.7	271.3	15,847	5,079	97,633	52,746	40,191	16,815	70,053
2012-13	428.8	209.1	362.6	241.5	489.6	287.2	16,109	5,168	132,011	71,121	48,809	19,319	77,557
2013-14	420.1	209.5	364.8	243.6	500.5	296.3	16,377	5,259	124,336	58,867	25,964	7,599	77,557
2014-15	430.9	218.9	380.8	256.1	514.2	306.2	19,393	5,353	118,079	63,569	36,587	7,239	88,288
2015-16	444.6	226.3	394.2	270.3	529.5	318.0	18,157	4,384	123,061	66,528	37,082	7,379	83,375
2016-17	475.2	258.9	455.4	325.7	560.6	342.6	18,207	4,304	120,336	63,386	37,857	7,541	58,733
2017-18	522.4	284.0	448.1	319.8	563.3	342.9	18,207	4,304	123,154	64,320	41,233	17,803	56,885
2018-19	494.9	276.5	448.7	322.0	567.3	348.5	18,207	4,304	136,008	70,818	61,602	27,260	60,279
2019-20	485.2	267.3	442.7	316.6	566.7	346.9	18,207	4,304	137,660	70,441	60,064	26,836	64,817
2020-21	476.5	266.2	434.0	311.5	592.3	363.8	18,207	4,304	158,386	81,481	59,455	25,095	69,604
2021-22	463.1	260.0	434.3	313.4	587.1	364.4	18,347	4,738	170,240	88,766	57,709	25,372	69,604
2022-23	506.0	285.7	511.2	372.8	733.4	473.0	40,889	5,085	196,694	105,625	60,130	25,666	98,030
2023-24 (E)	508.3	287.6	525.5	384.5	776.3	506.8	51,077	5,270	214,247	116,008	59,843	25,366	-

E : Estimated * : Including Pre-primary, Mosque Schools and Non-Formal Basic Education

Note: All figures include Public & Private Sector data

Sources:

1: Figures of Primary, Middle, High and Higher Sec. from 2010-11 to 2022-23 is based on Annual Pakistan Education Statistics Reports, NEMIS, PIE, Islamabad.

2: Figures of Universities is provided by Higher Education Commission (HEC), Islamabad.