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Realizing Quality School Education in Pakistan through Prioritizing on Quality Teachers

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KEY WORDS

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ABSTRACT

Pakistan has consistently emphasized the importance of education from the time of its creation. Targets have been set and reset to achieve universal primary education at the national level and at the international level as a member country of the United Nations and many regional forums. The Constitution of Islamic Republic of Pakistan provides for free and compulsory education for children of ages 5-16. In-spite of these strong ideological, constitutional and policy provisions, Pakistan has failed to achieve the targets. It has missed all the education related targets of Millennium Development Goals (MDGs). Now, it is signatory and has adopted the Sustainable Development Goals (SDGs), including the education related goal '*ensure equitable and inclusive quality education and lifelong learning for all by 2030*'. This paper is a situation analysis of the state of school education in Pakistan in comparison with the E9, the most populous countries of the world, to which it is now a member. The paper has also proposed strategies to turn the renewed policy of the government to extend quality education to all into a doable action plan focusing on providing quality teachers in required number.

Introduction

In the rapidly growing complex world, a well-endowed, collective and readily accessible knowledge base is one positive component contributing to the survival and advancement of nations. Such a knowledge base can be accessed and developed through a well-structured

system of quality education. However, quality in education has no common crystallized definition due to the complexities of each teaching-learning context, and processes, with an array of stakeholders and consumers jostling to have their say. Some elements of quality education are efficiency, effectiveness, equity, equality and relevance. Quality of education is also defined in terms of student learning outcomes. The Ministerial Roundtable on Quality Education, (2003) defined it as the education that may equip people without distinction of sex, race and region to become active and fully participative members of the communities of the world. The Dakar Framework of Action (UNESCO, 2000), in its Article 42, states that quality education is one that satisfies learning needs and enriches the lives of the learners and overall experience of living. It is an efficient means for sustainable development of a nation as it helps in fighting poverty, building democracies and fostering peaceful societies. It empowers individuals, gives them voice, unlocks their potentials and opens avenues to self-actualization.

But, to achieve the desired quality output, the antecedents and processes should also have quality. Amongst these, the quality of teachers has been accepted as the nucleus. Research over the past four decades, has suggested quality teaching as the strongest determinant of student achievement, particularly at school level. Therefore, any reform agenda of educational system should prioritize the improvement of teacher quality. For example, in USA, the No Child Left Behind Act (NCLB) 2001 intended that all children would meet state academic achievement standards to reach their full potential through improved programs (Department of Education, 2001). Among its five major input areas, it focused on providing resources for improving the quality of teachers and principals. The International Task Force on Teachers for Education for All (EFA), referred to the Dakar Framework of Education's goals (UNESCO, 2000) related to attaining EFA by 2015, and reiterated that teachers in sufficient numbers, with adequate professional skills and motivation, are central to achieving all those goals. The Task Force, with 27 participant countries, reaffirmed that teachers are essential for making the right to education, a reality. To carry out these responsibilities fully they have to be carefully recruited, well prepared, motivated by appropriate working conditions and status, and supported by adequate resources.

The international agenda on education in the form of MDGs shows that at least six of its goals were directly related to providing universal access to quality education by 2015 (UNESCO, 2011a). At the

completion of MDGs period, the United Nations General Assembly launched Sustainable Development Goals (SDGs). Goal 4 of SDGs aims to '*ensure equitable and inclusive quality education and lifelong learning for all by 2030'*. Pakistan, being a signatory to these goals, has launched the same in October, 2015.

This paper reviews the status of school education in Pakistan within the framework of access, equality, equity and quality of learning outcomes. On various parameters, comparisons have been made with E9 countries. In the last section, an action plan is proposed to materialize the recent constitutional provision and policy statements of the government.

Rationale for Comparing Pakistan with Other E9 Countries

Other than being signatory of various UN declarations, conventions and caveats on education such as Jomtien Declaration for EFA, Dakar Framework for Action (UNESCO, 2000) and MDGs, Pakistan has been a member of various international plans and forums for universalizing primary education. Shortly after independence, the first such forum was held under the umbrella of the Colombo Plan in 1950 (2011), for cooperative and social development in Asia and Pacific. Pakistan was among the first five member countries with Australia, India, Sri Lanka and New Zealand. In 1960, twenty one Asian member states of UNESCO formulated the Karachi Plan articulating the intention for compulsory and free primary education by 1980 (UNESCO, 1980). The Plan gave a tremendous boost to education in Asian countries and became a model for other regions. Unfortunately, Pakistan failed in meeting the targets every time and lagged far behind other member countries.

At present, it is a member of the consortium of nine most populous countries of the world known as E9 countries. Following the EFA Declaration 1990, the E9 initiative was launched at the EFA Summit, in 1993 in New Delhi, India as the Delhi Declaration aiming to devise strategies, and share experiences in ensuring basic education for every child, supporting education programs for youth and adults, eliminating disparities of access and equity, and improving the quality and relevance of education (UNESCO, 1993). Although the ministers of the participating countries held meetings to review the progress, but more regularity was observed after the Recife Declaration, 2000; following the Dakar Framework of Action 2000. The E-9 countries have, within their

borders, more than half of the world population and over half of the world out of school children. The countries comprising the E9 are China, Egypt, Brazil, Mexico, Nigeria, Pakistan, India, Bangladesh and Indonesia. The initiative of 1993 is continuing in-spite of changes in the economic status of some of the member countries such as Brazil, China, and Mexico which are no longer developing countries in many respects. India is also developing at a very fast rate (UNESCO, 2011d) (see Table 1).

Table1

Population and Income Status of E9 Countries, 2008

Country	Pop. in millions	Pop. Growth Rate	Growth rate 0-4 years	Per capita GNP US$	% Below $1.25 per day	% Below $2.0 per day
China	133.7	0.6	0.1	2940	16	36
India	118.1	1.4	-0.3	1070	42	76
Indonesia	22.7	1.2	-0.6	2010	18.1**	46.1**
Brazil	19.2	1.0	-2.5	7335	5	13
Pakistan	16.7 18.0*	2.2 1.84*	1.4	980	23	60
Bangladesh	16.0	1.4	-1.4	520	50	81
Nigeria	15.1	2.3	1.7	1120	64	84
Mexico	10.9	1.0	-1.1	9980	0.0	5.0
Egypt	8.51	1.8	1.2	1800	1.7**	18

Source: EFA Global Monitoring Report 2011 (UNESCO, 2011b).
*Bano (2007), Pakistan Country Report.
**UNDP: http://en.wikipedia.org/wiki/List_of_countries_by_percentage_of_population_living_in_poverty

Last meeting of the Consortium was held in Pakistan in November 2014, where the E9 member countries reviewed their progress and committed to enhance the collaboration to implement and monitor the Framework for Action of the post 2015 education agenda adopted at the World Education Forum (UNESCO, 2014).

At the time of Delhi Declaration in 1993, the E9 countries constituted nearly half of the population of the world. But by 2008, 65% of the population of the world and 67 % of the world's illiterates were residing in these nine countries. Five of the E9 countries are located in Asia having 45.8% of the world population (see Figure 1). Added to the challenges of illiteracy and low educational levels are the high

population growth rates and generally poor economies, excluding China, reflected in low per capita income and a great majority of people living below the poverty level. Six of these nine countries have 36% to 84% of the people below the redefined poverty level of daily per capita income of US$ 2.0. Using the earlier index of $ 1.25 per day, the percentage of people below poverty varies from 16% in China to 64% in Nigeria (see Figure 2). Economically, the top three E9 countries are China, Mexico and Brazil and at the lowest end are Nigeria, Bangladesh and Pakistan.

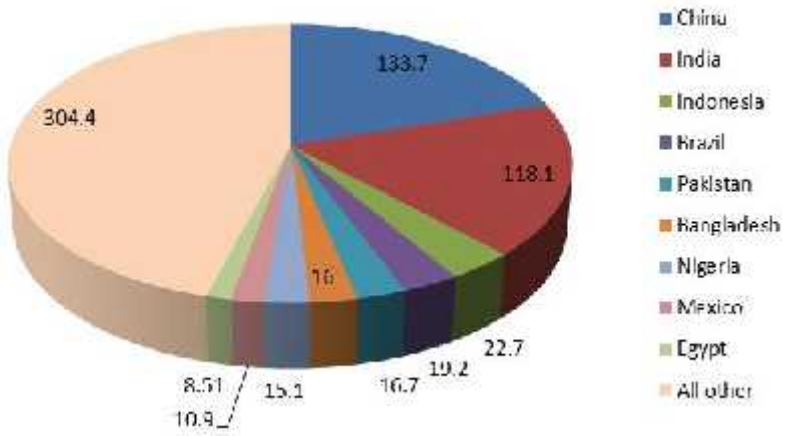

Figure 1: Share of E9 Countries in World Population, 2008

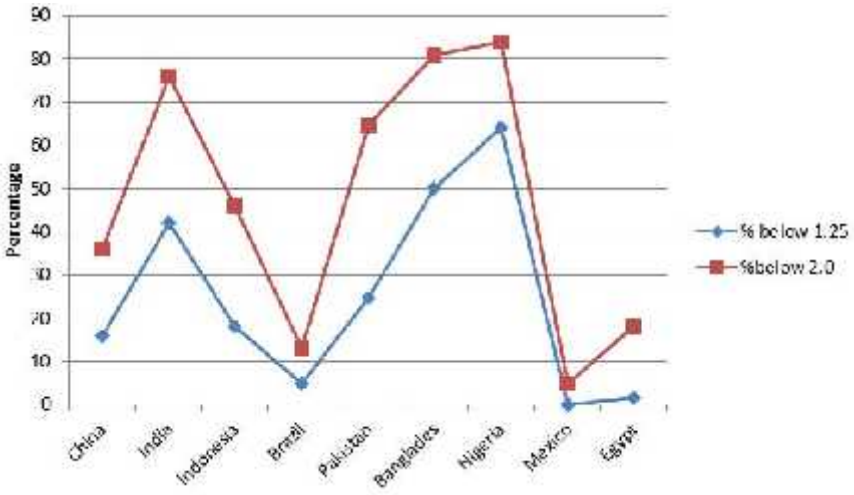

Figure 2: Population below poverty levels of US$ 1.25 and US $2.0

Status of School Education in E9 Countries

Early childhood/ pre-school education and adult literacy

Concerns about Early Childhood Education (ECE) and its demonstrated benefits at the individual and societal level have been highlighted somewhat recently. Mexico and Brazil provide ECE to nearly three fourths and half of the relevant age group, respectively. Enrolments in other countries were quite small ranging from 10 to 36% of the relevant age group. In Pakistan, nearly 17% of the children go to ECE, with nearly 50% of them each in the public and private sectors. In the public sector, ECE is part of the primary school. Complete gender parity was observed at this level in almost all nine countries. Four of these countries i.e. Brazil, Indonesia, Mexico and China have above 90% adult literacy ranging from 90% in Brazil to 94% in China with Pakistan having the lowest (54%) (see Table 2).

Table 2

Status of ECE, Primary Education and Adult Literacy in E-9 Countries

Country	Net Enrolment Rate (NER) Primary				Primary Survival Rate			NER ECE			Adult Literacy 15 years above		
	MF	M	F	GPI	MF	M	F	MF	M	F	MF	M	F
China	96*	94	98	1.04	100	100	100	36	36	36	94	97	91
India	90	91	88	0.96	N.Av	-	-	18	18	19	63	75	51
Indonesia	96	97	94	0.97	86	83	89	16	16	16	92	95	89
Brazil	94	95	93	0.98	N.Av	-	-	58	58	58	90	90	90
Pakistan	66	72	60	0.83	56**	-	58**	17***	17	17	54	67	40
Bangladesh	85	85	86	1.02	90	85	95	18	17	18	55	60	50
Nigeria	61	64	58	0.90	N.Av	-	-	NAv	-	-	60	72	49
Mexico	98	98	98	1.0	94	93	95	74	73	75	93	95	91
Egypt	94	95	92	0.96	99	99	99	10	10	10	66	75	58

Source: EFA Global monitoring report 2011 (UNESCO, 2011b)

*Access

** Pakistan Education Statistics 2011-12, (Government of Pakistan, 2013b)

*** Estimates

Primary School Education

Three of the nine countries i.e. Mexico, China and Indonesia have attained the target of universal primary education (UPE) while, Egypt and Brazil were very close to attaining the MDGs target with 94% Net Enrollment Rate (NER) at primary level. India and Bangladesh have nearly achieved targets, but Pakistan and Nigeria have missed it with a big gap. The quality of educational inputs in Pakistan is also very low, 61% of the public primary schools have no electricity, 41% have no drinking water, and 23% have no textbooks.

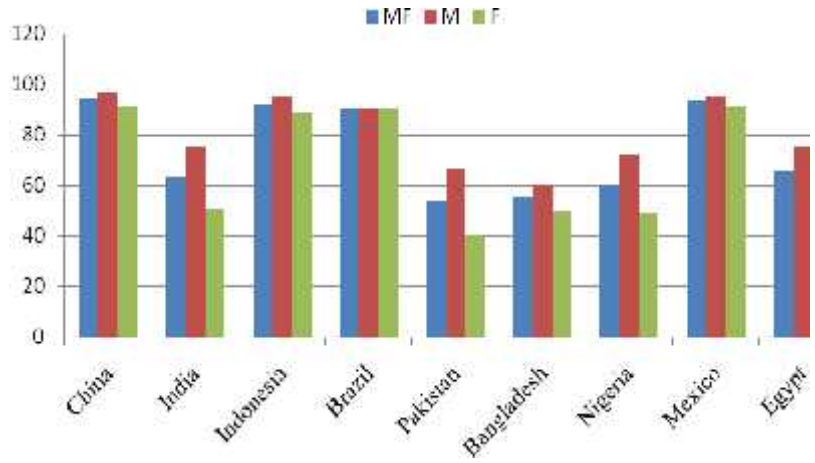

Figure 3: NER at Primary Level, 2008

Secondary School Education

According to the EFA global monitoring report (UNESCO, 2011b), access to secondary education was the highest in Brazil followed by Egypt, Indonesia and China with the lowest (24%) Gross Enrolment Rate (GER) in Pakistan. Countries with a longer history of compulsory primary education have higher enrolment and literacy ratios. In Pakistan, in-spite of the constitutional provisions and membership of international declarations, there is a lack of political will and financial support. Education has always been given the least priority. Even primary education was not declared compulsory till recent. Under the 18th Amendment in the Constitution of Pakistan, the Article 25A on right to education reads "the state shall provide free and compulsory education to all children of 5-16 years, in such a manner, as may be determined by

law". Moreover, the responsibility of education, particularly that of school education has been devolved to the provinces. However, legislation, modalities and financial allocation for the implementation of the recent constitutional right are yet awaited.

Table 3

Compulsory Years of Schooling and GER at Secondary Level in E9 Countries

Country	Years of Compulsory Education	Year of Legislation	GER Secondary Education	GPI Secondary Education
China	6-14	1986	76	1.05
India	6-14	2010	57**	0.88
Indonesia	7-15	1994	74	0.99
Brazil	7-14	1988	101	1.10
Pakistan	5-16	2010*	33	0.76
Bangladesh	6-10	1990	44**	1.05
Nigeria	6-11	-	30	0.77
Mexico	6-15	1992	90	1.08
Egypt	6-13	1993	74***	0.91

Source: EFA Global monitoring Report 2011 (UNESCO, 2011b)
*Provided in the Constitution in 2010, legislation and modalities still awaited
**Data for year ending 2007
***Data for year ending 1999

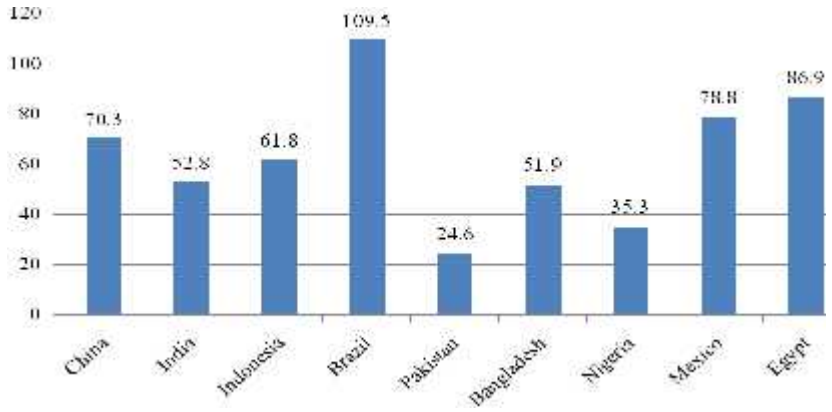

Figure 4: GER at Secondary Level in E9 Countries, 2008

Gender Parity in Access to Education

Although gender disparities have been reduced significantly in almost all the countries, however it still exists in terms of access and enrolment at many levels except for ECE. Mexico and Bangladesh have attained Gender Parity (GP) in NER at primary level with some disparity in primary school survival rates. With varying GER at primary level, there was a complete or near complete GP at secondary level in countries other than India, Nigeria with Pakistan having the lowest Gender Parity Index (GPI). It was also observed that wider the access and enrolment ratio, higher was the gender parity. Pakistan having very low primary and secondary education has the lowest GPI. It can be inferred from the data that where educational attendance is not imposed for all to attend, the preference is still for sending the male child to school.

Regional and Other Inequalities in School NER in Pakistan

Regional, racial and other inequalities in accessing education also exist in almost all countries excluding those with universal access. Even in those countries, quality is not the same across the board. In countries with low access rate, all inequalities become more marked. For example in Pakistan, a country nearly at the tail end of E9 countries in primary, middle and secondary school enrolment, great variations exist based on regional and geographical locations. Within each stratum, there exists gender, wealth and racial inequalities. For example, primary level NER ranged from 47% in Baluchistan to 61% in Punjab and from 42% in rural Baluchistan to 69% in urban Punjab. The GPI was 1.0 in urban Punjab and only 0.54 in rural Baluchistan (Bari & Sultana, 2012). Transition from primary to middle school was low and NER in middle school ranged from 31% for urban Punjab girls to only 3% for rural Baluchistan girls. Very low NER (12%) at secondary level had full GP at the national level but more girls than boys were enrolled in secondary schools of Punjab with GPI= 1.47. Even the rural Punjab has full GP. But, the remote and more conservative rural Baluchistan had GPI= 0.14% only. Besides regional and gender disparities, wealth or income of parents are highly marked factors contributing to inequalities in quality education. Top class private schools provide high quality education to the children of wealthy people (see Table 4, Figures 5 & 6).

Table 4

Regional, Locational and Gender Disparities in School NER in Pakistan for 2010-2011

Level of School	Province	Total				Urban				Rural				Rural Urban Parity
		MF	M	F	GPI	MF	M	F	GPI	MF	M	F	GPI	
	Pakistan	56	60	53	0.9	66	67	65	0.97	53	57	48	0.84	0.80
Primary	Punjab	61	62	59	0.95	69	69	69	1.0	58	60	55	0.92	0.84
1-5	Sindh	53	57	48	0.84	63	63	62	0.98	47	54	39	0.72	0.75
	KPK	51	57	45	0.79	61	63	58	0.92	50	56	43	0.77	0.82
	Baluchistan	47	65	35	0.54	64	69	58	0.84	42	53	29	0.55	0.66
	Pakistan	20	22	20	0.91	29	27	31	1.1	17	19	14	0.74	0.59
Middle	Punjab	23	23	23	1.0	31	29	34	1.4	19	21	17	0.81	0.61
6-8	Sindh	20	21	19	0.90	28	26	30	1.2	13	18	8	0.44	0.46
	KPK	18	20	17	0.85	24	27	21	0.78	16	19	12	0.63	0.66
	Baluchistan	15	17	13	0.76	20	21	19	0.90	11	16	3	0.19	0.52
	Pakistan	12	12	12	1.0	18	16	20	1.2	9	10	8	0.80	0.50
High	Punjab	14	13	16	1.2	21	17	25	1.5	11	11	11	1.0	0.52
9-10	Sindh	11	12	10	0.83	16	17	16	0.94	6	8	3	0.34	0.38
	KPK	7	8	6	0.75	10	9	12	1.3	6	7	5	0.71	0.60
	Baluchistan	6	8	3	0.37	13	8	4	0.50	4	7	1	0.14	0.31

Source of data: Annual Status of Education Report 2011 (ASER, 2012a)

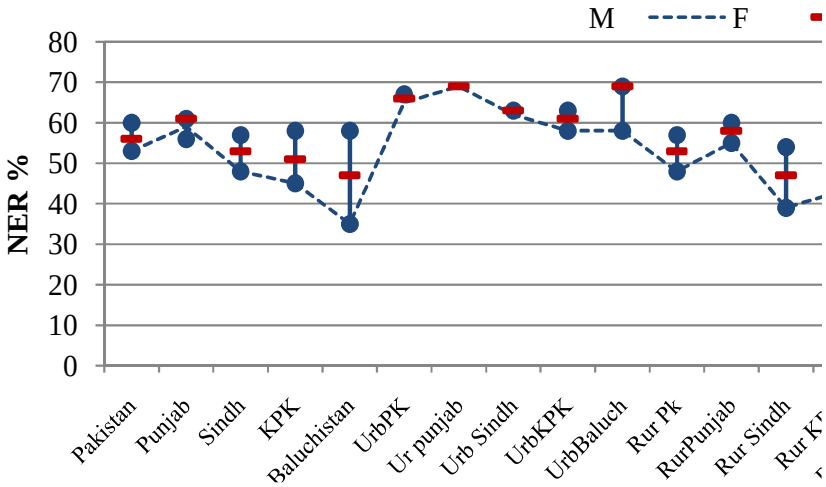

Figure 5: By Gender and by Region Disparities in NER at Primary level in Pakistan

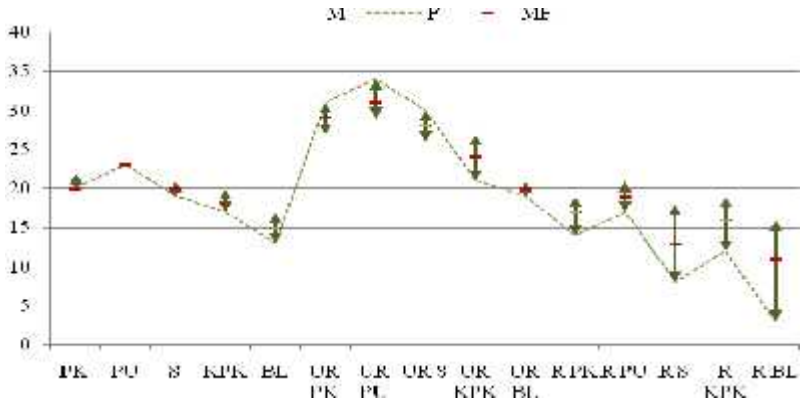

Figure 6: By Gender and By Region Disparities in NER at Middle School Level in Pakistan

Teacher-Pupil Ratio

The average worldwide teacher-pupil ratios at primary and secondary levels are 1:25 and 1:18. The primary school teachers of E9 countries that have attained universal primary education (UPE) are close to the target, have less than 30 (from 17- 28) students per teacher while four countries, that have missed targets, have more than 40 students per teacher. In many cases, it is not just the simple teacher student ratio that is problematic, but also the ratio is made more unacceptable by the fact

that the number is comprised of multi-aged students in various grades. Such challenging contexts lead to student dropout, wastage of human and material resources. The foremost reason for the dropout from school is poverty which is most pronounced in poor quality schools. It is an accepted fact that schools matter, but they matter more for the poor and disadvantaged (Lockheed & Verspoor, 1991). Similar trends are obvious at secondary school level. Countries having a gross enrollment rate (GER) above 60% had a teacher student ratio ranging from 1:12-1:18, while those at the lower side had, on the average, 25-35 pupils per teacher (see Table 6).

Table 6

Pupil Teacher Ratio at Pre-Primary and Secondary Levels in E9 Countries, 2008

Level	China	India	Indonesia	Brazil	Pakistan	Bangladesh	Nigeria	Mexico	Egypt
Pre-Primary	22	44*	13	19	NA	27	8	27	25
Primary	18	46*	17	23	41	24	46	28	27
Secondary	16	35*	12	18	28*	25	28	18	34

Source: http://www.nationmaster.com/graph/edu_pup_tea_rat_sec_lev-pupils-teacher-ratio-secondary-level

Student Learning Outcomes

Student learning outcomes are the direct indicators of quality of any educational system. Unfortunately, no common yardstick is available to compare the student learning outcomes across E9 countries. Sixty three countries of the world participated in Trends in International Mathematics and Science Study (TIMSS), 2011. Out of E9 countries, only Indonesia has been participating in grade 4th and grade 8th assessments, but in 2011, it participated only in grade 8th assessment where it was below the mean. Egypt participated in 4th grade assessment up to 2007.

Some countries have one or the other kind of national level assessment data. The schools of Brazil appear doing the best of all countries as the students are attaining scores higher than the satisfactory level (Neri & Buchmann, 2007). According to National Education

Assessment Report (Government of Pakistan, 2005), Pakistani 4th graders are behind the satisfactory level indicating a big learning deficit. Students of 8th grade scored only 30% in each of the Mathematics and Language tests (Mirza et al., 1998) (see Table 7).

Table 7

Student Achievement Scores on Relevant National Assessments

Country	Grade	Math/ Numeracy	Reading/ Language	Science/ life skills	Comments
India	5th	38.5%	58.6%	50.3%	Maximum possible score is 100
	8th	46.5%	52.4%	45.0%	
Nigeria	4th	37.7%	35.0%	43.8%	Results stated as poor.
	6th	35.7%	41.5%	25.4%	
Pakistan	4th	421, below mean*	369 below mean*		Achieved mean scores out of national scaled mean score=500
	8th	30%**	30%**		
Brazil	4th	182/225	232/200		Denominator is mean labeled as satisfactory.
	8th	239/300	232/250		

Sources: Country reports except in case of Pakistan
Source: *National Education Assessment Report 2005 (Government of Pakistan, 2005)
**(Mirza et al., 1998)

Financing of Education

Financing of education from the public sector is one of the most important indicators of commitment and political will on the part of government. Three of the E9 countries (Brazil, Mexico, and India), were spending a higher percentage of their GNP on education as compared to other countries to meet minimum standard recommended by UNESCO, i.e. 4%.

The first two countries with similar spending over the last many years have nearly achieved many of the MDGs. India has recently started allocating a bigger chunk of its GNP on education and, although has not attained the MDGs, it has started showing better results. Spending on education in terms of percent of GNP is only 1.9 in China, but that may

be due to the giant size of the economy that this allocation has helped the country in meeting the targets.

Table 8

Percent of GNP Spent on Education

Funding as	China	India	Indonesia	Brazil	Pakistan	Bangladesh	Nigeria	Mexico	Egypt
% of GDP	1.9*	4.5	3.7	5.3	1.8**	2.3	NA	4.9	3.7

Pakistan is spending only 1.8% on education, a decline from the recent past spending of 2.2%. Actual expenditure on education has always remained even less than the budgetary provision (UNESCO, 2011b, 2011c), Bangladesh is spending 2.3%. Pakistan, Bangladesh and Nigeria have missed almost all the MDGs targets (see Table 8, Figure 8).

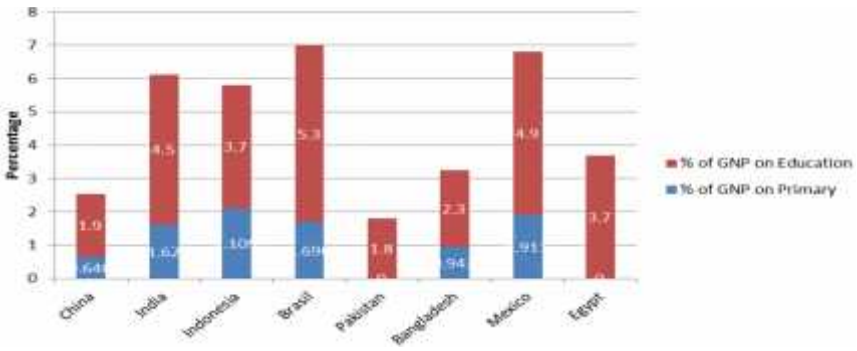

Figure 8: Percentage of GNP spent on Education in E9 Countries

Renewed National Policy on Access to Quality Education

National Policy on Access to School Education

The Constitution of Pakistan and various education policies including the most recent one have following provisions and commitments for universal access to school education:

1. Constitutional provision. The state shall provide free and compulsory education to all children of the age 5-16 in such a manner as may be determined by law. (Article 25A of Constitution of Pakistan, 18th Amendment 2010).

2. Policy Provision. At least one year ECE shall be provided by the state and universal access to ECE shall be ensured within the next ten years (National Education Policy, 2009).

3. All children, boys and girls, of age 6-10 shall be brought inside school by 2015. (National Education Policy, 2009).

4. Progress towards achieving education MDGs will be accelerated during 2013-2016. (Government of Pakistan, 2013a).

The above mentioned goals no. 2, 3, and 4 have already been missed.

National Policy on Quality of Teachers

The National Education Policy (2009) acknowledged the importance of the teacher by stating that one-third of student learning in developing countries depends on teacher quality and leadership. It outlined the following two strategies for improving the quality of school teachers:

1. A bachelor degree, with a B.Ed., shall be the requirement for teaching at the elementary level. A Masters level for the secondary and higher secondary, with a B.Ed. shall be assured by 2018. The present set of teachers will be encouraged to improve their qualifications, while future hiring shall be based on the advanced criteria. Exceptions shall be made in case of less developed areas where teachers with relevant qualifications are not available.

2. Teacher training arrangements, accreditation and certification procedures shall be standardized and institutionalized.

The E-9 countries, in its 10th meeting, pledged to focus on the improvement of the professional capability and performance of teachers and education personnel, in particular school principals. They further emphasized the policies that enable them to deliver effective and quality learning. They also committed to strengthening mandatory pre-service teacher training, large-scale learning assessment and expanding the use

of ICTs for improving the teaching and learning processes as well as learning outcomes (UNESCO, 2014).

Turning Policy into Action Plan

The target of achieving UPE stated in the First Pakistan Educational Conference (Government of Pakistan, 1947) could not be achieved. Moreover, Pakistan could not keep pace with the Colombo Plan 1950; could not match the countries teamed with it in the Karachi Plan, 1960 to attain universal primary education by 1980, and the subsequent national targets also remained distant. Now, it is aligned with the E-9 countries, the most populous, and destined towards achieving SDGs. This time failing to progress rapidly, Pakistan may become isolated in the global community. It must be realized that education is the single best investment a nation can make for reducing poverty, improving health and building a sustainable equitable society. It is the key for overcoming the low development syndrome. Following strategies and measures should be adopted to realize the policy targets.

Prioritizing on Education with Proper Budget Allocation

Pakistan has committed to increase spending on education up to 15% of GDP by the year 2015, as envisaged in National Education Policy (2009) but the actual spending has declined to 1.8%. For survival in the global community and to provide universal school education of quality in line with the national and international commitments, Pakistan must increase spending on education to at least 4% of gross domestic product (GDP). The E-9 Consortium has strongly recommended reaching the internationally recognized benchmark of 4-6 percent of GDP and/or 20 percent of total public expenditure for education (UNESCO, 2014).

Projections for Required Teaching Personnel for Universal Quality School Education

We need to make projections about the required number of teachers at primary, elementary and secondary school levels in line with the 18th Amendment and national plans that aim to expand school access to meet the compulsory education targets. As a rough estimate, to implement the National Education Policy of adding one year pre-primary within ten years, another about 100,000 teachers will be required by 2019 (see Table 9 for details).

Table 9

Enrolment, Number of Teachers and Crude Estimates of Required Number of Teachers for Universal Education for Age 5-16 Years

Level	Enrolment in million*	Teachers*	Teacher Pupil Ratio	Estimated Pop. of relevant age	Total teachers required	Additional teachers required
Primary	17.38	436928	38	25.6	673684	236756
Middle	5.59	351367	25	14.8	595000	143633
High(9-10)	2.68	95700	28	12.0	428570	333570
Higher Secondary	1.25	95974	29	To double	200,000	200,000

*Pakistan Education Statistics 2011-12 (Government of Pakistan, 2013b)

Note: There are another 363,406 teachers reported under high schools. It is assumed that they might be teaching classes other than 9-10 in high schools such as from classes 1-8 or classes 6-8 as the case may be in a high school of grades1-10 or that of grade 6-10.

Financing of Teacher Education

The extent to which resources are made available is presumed to be the critical determinant of the quality of teacher preparation programs and continuing professional development interventions. Teacher education, in-spite of being acknowledged as the key for quantity and quality of education at all levels, has received a very small percentage of the educational budget. Expenditure on education reached its peak in the 2nd five year plan when 3.9% of the educational expenditure was on teacher education which declined to 0.94% in the 6th plan period followed by a slight increase in the 8th and 9th plan with 1.67%. Another indicator of valuing a profession on the national canvass of professions is the per student annual expenditure. In Pakistan the per year average per pupil expenditure at a public university in 2010 was Rs.46,000, whilst only an average of Rs.16,000 was spent on the preparation of a teacher at the post graduate (B.Ed) level. The same pattern of funding continues, as the Higher Education Commission (HEC) provides funds to the public sector universities using a formula based on factor '1' for arts, humanities and social sciences that includes teacher education; 2 for agriculture and sciences and 3 for Engineering/ Medical and Veterinary (Higher Education Commission, 2013). On the other hand, in the USA, educationists expressed concern when teacher education per weighted credit hours was funded at 5% less than engineering and 14% less than the business administration (Monk & Brian, 1996). In Europe, the funding formula for public sector universities does include, among other considerations, the factor of discipline or field of study. In general the

humanities and social sciences receive the lowest weightage with engineering and medicine receiving the highest (Eurydice, 2008) but there is a variation in the positioning of pedagogic disciplines in relation to other fields of study. For example in Finland the unit funding is calculated using factor 1.25 for humanities/social science/law but factor 1.5 is used for pedagogic disciplines. Similarly, in Sweden humanities and social sciences are funded calculating with factor 1 but the unit funding of teacher education is weighted as 1.8 (Ecker, Leitner & Steindl, 2011). Another factor that influences funding in higher education is the priorities under national policies for various fields of studies. Using a complex formula evolved over the years, the unit cost has become one of the elements. But, following the practices in other countries, having a higher factor unit cost for pedagogical sciences; and under the umbrella of adequacy and equity for producing quality teachers per student, funding on teacher education should be at the rate equivalent to any other discipline of higher education or at least it may be included in the category of sciences having a factor '2' for calculation of funding. Moreover, considering the low market value of this discipline, but its universally acknowledged high value in improving the quality of the education system, funding to teacher education programs should be provided on an equity basis so that talent can be attracted to this profession rather than it being treated as the lowest option. The HEC should also allocate special quotas for teacher education in indigenous and foreign scholarships.

Alternative Pre-service Teacher Education Models

The National Education Policy (2009) has mentioned the post academic B.Ed. degree as the minimum professional requirement for a teaching position in schools. However, the HEC has decided to discontinue one year B.Ed. program from year 2016 and to offer only four years B.Ed. Elementary and Secondary programs (Higher Education Commission, 2013).

Nearly 520 institutions offer teacher education programs in the country. But the number of universities and degree awarding institutions offering teacher education programs is not more than 65 including 34 in the public sector. The remaining are affiliated colleges of education. Most of these colleges have the capacity to offer only post academic B.Ed degree. With some additional financial and human resource inputs, they may offer a 2 years Associate Degree in Education (ADE) or, at the most the four years B.Ed Elementary degree which requires subject

content courses equivalent to or slightly above the Intermediate level. There are hardly any Teacher Education Institutions (TEIs), even within universities, with the capacity to offer concurrent Secondary School teacher education program which consists of the content courses of the upper Division, that is 3rd and 4th years of the BS or the conventional two year master degree courses in school subjects such as physics, chemistry, mathematics, Urdu, English etc. Such undergraduate programs in natural sciences (physics, chemistry, botany, zoology etc.) and social sciences (geography, political science, history, Urdu etc.) are generally offered by public sector comprehensive universities. The only option for TEIs is to offer concurrent secondary school teacher education programs in collaboration with other departments of comprehensive universities and postgraduate colleges. But, Pakistani institutions of higher education follow a compartmentalized system of subject offerings with the least familiarity with the interdisciplinary open system of course offerings.

The general universities even if become responsive to open the content courses for prospective teachers of four/five year B.Ed. program will be able to enroll a limited number of students constituting a small proportion of the required number of teachers for universal school education. Secondly, it will delay the provision of required number of school teachers in case the government prioritizes on education in compliance with the constitutional provision and commitment to SDGs. Thus, it is suggested that for preparing secondary school teachers:

- The TEIs within general universities and post graduate colleges may explore the possibility of offering B.Ed. Secondary with a 2nd Major in a content area at other relevant departments of their institutions. Such models are practiced in almost all countries offering concurrent degree programs in teacher education. The HEC may encourage universities and postgraduate colleges to adopt this model of teacher education in accordance with the Pakistan Vision 2025, that is, infusion of the structure of academic departments of the universities enabling students to take courses at other relevant departments (Government of Pakistan, 2015).

- The post-academic B.Ed. after 4years BS/conventional master degree in a content area should continue. However, for improving the quality and rigor of this program its duration maybe extended up to three semesters.

Strengthening Professional Development of Teachers and Teacher Educators

Presently, a large number of less qualified and untrained teachers are working in primary and secondary schools. Evening, summer and bridging courses should be offered at TEIs to provide them with the opportunities to improve their academic and professional qualifications. Distance and virtual modes of teacher education may be prioritized on up-grading the qualifications of such teachers. Continuous professional development of teachers also needs appropriate emphasis not only for updating knowledge but for practicing most effective teaching-learning models and participatory techniques for developing a unified commitment to nation building. Similarly, the capacity of teacher education institutions and teacher educators should also be enhanced to ensure the quality of the subject matter courses for teachers.

Ensuring Quality of Teacher Education Programs and Teachers

Similar to other professions, quality of teachers must be ensured as outlined in the National Education Policy of 2009. In the developed and developing countries, the quality assurance process in professions including teaching comprises of three steps- accreditation of programs, registration of graduates, and certification of professionals for various quality levels. In Pakistan the National Accreditation Council for Teacher Education (NACTE) was established in 2007 (NACTE, 2009) for the accreditation of teacher education programs. Processes for the other two elements are still to be decided and designed. In line with the practices in other professions in Pakistan, initial registration of the graduates of various teacher education programs as professionals can be done with the NACTE; licensing may be carried out by the provincial departments of education and further professional certification can again be done with the NACTE. First registration and subsequent certification of teachers require professional standards and competency profiles. National Professional Standards for Teachers (general) have already been developed (Government of Pakistan, 2009). We need to develop professional standards and competency profiles for subject teachers and all other types of school personnel.

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