

NATIONAL CURRICULUM FRAMEWORK PAKISTAN



**Ministry of Federal Education &
Professional Training**

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Message from the Federal Minister

Education plays a vital role in human resource development. It is an instrument for self reliance, social reconstruction and sustainable economic development. Education helps in reducing poverty and improving the quality of life leading to better health and survival rates. Education should therefore, equip the youth of the nation with the required knowledge, skills and competencies which would enable them to contribute to the overall development of the country. Education is required to prepare children for a world of rapid change in technology, increasing interconnectedness, and new forms of employment. In today's fast changing world, the young generation not only requires academic competencies such as literacy, numeracy, and science, but it also needs other competencies such as teamwork, critical thinking, communication, persistence and creativity.

Curriculum is the most important mean to achieve the national vision and goals. After the devolution of education to provinces under 18th Constitutional Amendment, uniformity in curricula and standards has become a matter of great concern. In order to address this concern, all Federating Units decided to constitute a national coordinating body called National Curriculum Council (NCC) consisting three members from each Province/Area. One of the main functions of NCC is to develop a National Curriculum Framework in close consultation with all the stakeholders. Accordingly, NCC in collaboration and consultation with all Federating Units and other stakeholders developed NCF. NCF is a national policy document on curriculum to steer the curriculum development in the country.

The National Curriculum Framework provides broader guidelines on development of subject curriculum, instructional delivery system, assessment and testing system and professional development of teachers. It will provide guidelines to all stakeholders to advocate an inclusive, integrated, holistic and comprehensive approach in development of curriculum in Pakistan. This framework will respond effectively to local, national and international priorities to meet the individual learning needs of all students and to provide a strong foundation for lifelong learning in a constantly changing competitive world.

I would like to convey my sincere appreciations to all educationists, experts, professionals including members of the Technical Committee, Ministry of Federal Education and Professional Training's team and NCC Secretariat's team for preparing National Curriculum Framework. It will provide an effective guideline to curriculum and textbook developers across the country in producing learning materials for providing quality education to our children.

Engr. Muhammad Baligh Ur Rehman
Federal Minister
Ministry of Federal Education and Professional Training
Government of Pakistan
Islamabad

Message from the Federal Secretary

The curriculum, textbooks and learning materials, teacher education and training, examinations and assessment are not an end in the education spectrum but means to an end. The ultimate goal of these inputs is equipping the children with knowledge, skills and dispositions required to successfully lead the nation for economic and social development in this competitive world. Education also refers to bringing changes in attitudes and values leading to respect for law, human rights, religious and social norms and traditions in line with the nation's philosophy of life. The NCF therefore, emphasizes on ways and means to produce conducive learning environment in schools including its various facets like textbooks and learning resources, teacher education and delivery, classroom assessment and evaluation mechanisms and system. NCF focuses on providing equal learning opportunities to all children in the country in the context of post devolution scenario. It provides comprehensive guidelines to develop implement and evaluate the curriculum and related process in order to achieve on educational vision of Pakistan.

The framework will enable all the Federating Units to follow uniform practices in preparation of curriculum by respective bodies leading to uniform standards of school education across the country irrespective of class, creed, area or gender leading to national unity and cohesion. It will also enable them to prepare common standards to assess learning achievements of students and the overall impact of interventions on the knowledge, dispositions, skills, societal norms, brotherhood, integrity, honesty, national cohesion, good citizenry, peaceful co-existence, interfaith harmony, and respect for human rights especially the rights of the child to education.

I am glad to say that the NCC has made every possible effort to develop the document by adopting thorough consultative meetings with all stakeholders across the country. As a result of collective and collaborative efforts, a useful document is being presented for developing and implementing curriculum in the country in line with the national aspirations as well as international standards and best practices.

I appreciate the team of Ministry of Federal Education and Professional Training headed by Prof. Muhammad Rafique Tahir, JEA (Education), National Curriculum Council, Secretariat's team headed by Dr. Dawood Shah, JEA (Curriculum), the Technical Committee, representatives of Federating Units and other stakeholders for preparation of the first ever document i.e. the National Curriculum Framework, in Pakistan. I also congratulate all the Federating Units for developing this policy document to provide guideline for curriculum development. I pray that Allah may continue with his blessings.

Aamir Ashraf Khawaja
Federal Secretary
Ministry of Federal Education and Professional Training
Government of Pakistan
Islamabad

Foreword

Curriculum provides a framework for the educational institutions determining the subjects, learning objectives, and learning outcomes. The key value of a curriculum is to ensure cohesion and uniformity in the education system of diverse cultures and societies to achieve the cherished goal of national unity. Curriculum is simply a vehicle to interpret and transmit the national goals and societal aspirations to the younger generations. Curriculum is the guide that delineates the learning path of a student and determines the process of learning. It does not only describe ‘what to teach’, but it also highlights ‘how to teach’, as well as ‘how to assess student learning outcomes’. It is influenced by the nation’s ideology, national policies and socio-economic development, technological advancement, research, knowledge expansion, global changes, market demands and economic order. Curriculum is a major instrument of education, which, in fact, shapes the whole system.

National curriculum framework stipulates the parameters which provide guiding principles for setting curriculum goals and contents, learning methods and materials, and assessment of learning outcomes. It indicates essential learning areas describing in broad terms the knowledge, skills, attitudes and behaviours which all students need to acquire at a specific level of education. It also illustrates the elements which are essential to teaching and learning especially relating to classroom delivery its assessment and feedback. Curriculum development is a complex, on-going and cyclical process; therefore without curriculum policy statements in the form of NCF, the process may be susceptible to arbitrary, unwarranted and sometimes superficial changes.

(Muhammad Rafique Tahir)
Joint Educational Advisor
Ministry of Federal Education and Professional Training
Government of Pakistan
Islamabad

EXECUTIVE SUMMARY

National Curriculum Framework (NCF) is a policy document which provides guidelines for achieving national Vision, Mission, Goals and Objectives of education through school curricula. NCF therefore, evolves effective and productive principles, processes, policies and strategies for curriculum development, its implementation, delivery and subsequent appraisal to see as to what extent objectives of the curriculum have been achieved. The guiding principles that have been followed during the development of NCF include: -

- (a) Constitutional provisions including right to education
- (b) Recommendations of Educational Conferences in 1947 and 1951
- (c) Provisions of Educational Policies from 1972-80 to 1998-2010 and 2009

Education had been included in the Concurrent Legislative List of the Constitution of Pakistan 1973 which meant that education was a joint function of Federal and Provincial Governments. The Concurrent Legislative List was abolished through 18th Constitutional Amendment, resultantly, education, including curriculum, textbooks and all other related matters concerning learning in the schools, are now the sole responsibility of the provinces and areas . However, considering the curriculum as the most important means to achieve the national vision and goals, all the Federating Units realized the need to address these concerns through a national coordinating body which was constituted in the name of National Curriculum Council (NCC) consisting of three members from each Province and Area; one each from Curriculum Bureaus, Textbook Boards, and Education Department.

NCC functions under the Ministry of Federal Education and Professional Training which is mandated to serve as a professional, advisory and consultative national body to steer and guide the development of curriculum in close collaboration with all the Federating Units in order to ensure minimum quality standards from Early Childhood Education to Grade XII. Development of NCF is a step towards achieving uniform standards in education ensuring national cohesion and interests.

National Curriculum Council approved an outline of the NCF which covers ideological, academic and socio-cultural concerns of Pakistani society through development of school curriculum and to oversee its implementation. The objectives of NCF are to provide an appropriate structure to ensure compatibility in diversity in curriculum to achieve national goals of education; to provide broader guidelines regarding what all students should know, understand and value on completion of a specific level of schooling. The NCF suggests flexibility and increased autonomy to provincial, regional and local education authorities and to classroom teachers to take care of local and regional needs within broader perspective of national policies and needs. It webs national education policy and provincial /regional institutions to be engaged in curriculum development, textual/learning materials development, delivery system including schools, education managers, teacher training institutions; and to provide an instrument for

accountability in education, to all stakeholders including public representatives, through curriculum evaluation and feedback.

NCF spells out and provides guidelines for achieving national Vision, Mission, Goals and Objectives of education. NCF has been developed in consultation with all Federating Units. It includes chapters on (i) Curriculum Development and revision, (ii) textbooks and learning materials, (iii) teacher education and training, (iv) learning resources and school environment, (v) evaluation and feedback and (vi) mechanism for coordination among Federating Units, public and private sectors and various streams of education on curriculum aspects.

National Curriculum Council has deliberated upon the NCF and has approved it unanimously. All the Federating Units will now develop their subject curriculum as per their needs by following the guidelines given in the NCF which will ultimately lead to uniformity in diversity and adhering to common educational standards. Federating Units need to exchange their experiences and curriculum with each other using NCC forum. It is hoped that in future children in all parts of country will benefit from quality education by following spirit of the NCF.

National Curriculum Framework

Islamic Teachings (Quran and AHADIS)

National Education Policy Provision

Research and Development

Research and Development

Teachers and Teacher Training

Examination Assessment/Evaluation

Scheme of Studies

National Goals and Objectives

Vision/Mission

Student Learning Outcomes

Benchmark

Standards

Competencies

Domains

Subject Specific Objective

National Curriculum

Research and Development

Textbooks

Supplementary Reading Material

Research and Development

Vision of Quaid-e-Azam

Constitution of Pakistan 1973

(Objectives Resolutions, Human Rights and Principles of Policy)

Chapter – 1

Introduction

1.1 Importance and Goals of Education

Education is a critical investment for human capital formation and an essential tool for ensuring sustainable socio-economic development. It plays an important role in preservation, cultivation and transmission of cultural heritage from one generation to the next. Education is the knowledge of putting one's potentials to the maximum use enabling a person to think and take informed choices and decisions.

Importance of education

The first revelations of the Holy Qur'an command the Holy Prophet (peace be upon him) to "Proclaim! (or read) in the name of thy Lord and Cherisher who created. Created man from a (mere) clot of a congealed blood. Proclaim! And thy Lord is most Bountiful. He Who taught (the use of) the pen. Taught man that he knew not"(Qur'an, 96:1-5).

1.1.1

Goals of education

Education is the process of bringing desirable changes in the attitudes and behaviours of human beings. It facilitates learning or acquisition of knowledge, values, beliefs, habits, skills and dispositions. These processes of bringing desirable changes and acquisition of knowledge are the critical goals of education and are generally achieved through curriculum including all other areas of its implementation in the classroom.

The Constitution of Pakistan affirms an egalitarian view of education based on values and speaks of instilling moral values and of providing education to all citizens irrespective of gender, caste, creed, or race. It also speaks of removing illiteracy and providing free and compulsory education for children of 5-16 years, of ensuring full participation of women in all the spheres of national life. Pakistan had made a commitment to achieve six Dakar EFA Goals within the specified target dates. Pakistan is also a signatory to Sustainable Development Goals 2015-2030 whereby each member state has to 'ensure inclusive and quality education for all and promote lifelong learning'.¹

¹United Nations.(2016). *Sustainable Development Goals 2015-2030: 17 Goals to Transform our World*. Retrieved from <http://www.un.org/sustainabledevelopment/education/>

However, there is a strong need to address the issues like the divide between the prevalent school structures and differences in levels of infrastructure and facilities, medium of instruction, emoluments and qualifications of teachers, curriculum being offered in public and private sector schools and in Deeni Madaris, examination systems and what values to be taught through the educational system and how to accommodate non-Muslim minorities.

1.2 Curriculum Definitions

The definition of curriculum and its interpretation varies from a narrow concept of “a set of subjects or programs of studies” to a broader concept of “a series of experiences undergone by learners in the school under supervision of a teacher/school”.² The curriculum has been defined as “the planned and guided learning experiences and intended outcomes, formulated through systematic reconstruction of knowledge and experience under auspices of school, for the learners’ continuous and wilful growth in personal-social competence”.³

It implies that curriculum provides a framework for the educational institutions determining the subjects, learning objectives, and learning outcomes. The key value of a curriculum is to ensure cohesion and uniformity in the education system of diverse cultures and societies to achieve the cherished goal of national unity. In other words curriculum is simply a vehicle to interpret and transmit the national goals and societal aspirations to the younger generations. Curriculum is the guide that delineates the learning path of a student and determines the process of learning.⁴

Curriculum is “the planned and guided learning experiences and intended outcomes, formulated through systematic reconstruction of knowledge and experience under auspices of school, for the learners’ continuous and wilful growth in personal-social competence”.

1.3 Quality in Education

The term ‘quality’ in education has been used in all policy documents. However, its definition remains elusive because of the intricate nature of teaching-learning process and involvement of a large number of stakeholders. Quality of education has been defined “as a set of elements containing input, process and output of education system”.⁵ The term “education quality” has also been defined in two ways in terms of either inputs, or outputs.⁶ The quality of education is linked to school inputs, such as teachers’ qualifications, class size, pedagogy, teaching and learning materials, curriculum, facilities and resources (learning, physical, fiscal and others) necessary for the maintenance of school. Educational quality is, therefore, relative to

²Bano, Y. (2005). Curriculum development: Issues and challenges in Pakistan. *ANTRIEP*, 10(1), 1-16. (New Delhi: National Institute of Educational Planning and Administration, p.3).

³Wiles, J., & Bondi, J. C. (1984). *Curriculum development: A guide practice (2nd ed.)*, (Columbus, Ohio: Charles E. Merrill, p.7)

⁴Government of Pakistan, Ministry of Education.(2009). *National Education Policy 2009*. (Islamabad: Ministry of Education)

⁵Cheng, Y. & Cheung, W. (1997). Multi-model of education quality and multi levels of self management in schools. *Educational Management and Administration* 25 (4), 26-37

⁶Adams, D. (1993). *Defining educational quality*.(Pittsburgh: University of Pittsburgh)

the inputs. If inputs are of good quality, the output is also of high quality.⁷ Educational outcomes and the curriculum as an input are interconnected. The nature and design of the curriculum guides the educational process to achieve the desired outcomes or standards.

Quality is at the heart of education, and it encompasses the desirable characteristics of learners, processes, facilities, learning materials, content, governance and management, and learning outcomes. A quality education is one that satisfies basic learning needs and enriches the lives of learners and their overall experience of living.⁸ The National Educational Policy 2009 identified six pillars of quality which include curriculum, textbooks, assessment, teachers, learning environment and relevance of education to practical life.⁹ In these pillars, curriculum is the major pillar around which the whole activities relating to learning take place. As such, it is imperative that the design of the curriculum is such that it takes care of all requirements leading to an effective learning.

1.4 Standards in Education

Standards in education are used to measure the quality of education and student achievements. Standards are the specifications or yardsticks for the inputs, processes and outcomes of an education system¹⁰. The standards define what students should know and be able to do at a specific level of education. Standards also define the knowledge and skills that student should possess at critical points in their educational career. Standards are used as a reference point for assessing quality of input, process and output of an education system. Standards also serve as a basis of educational reform across the country and a way to measure student success in terms of outcomes. Standards are also needed by those working for evaluation, assessment, feedback and research. Standards are, therefore, required as a national initiative to define the knowledge, skills and dispositions that student should have throughout their education at primary, secondary and higher secondary levels to provide a clear and consistent framework to prepare young children for their future educational and professional careers in the world of work.

1.5 History of Curriculum Development in Pakistan

Pakistan came into being in 1947. Educational base at that time was too weak to build a sound and varied structure of education system in the country. There was a need not only to expand the education system but also to re-orient the whole education system according to the country's social, cultural and economic needs. The first Pakistan Educational Conference was convened in 1947 which gave direction to the education system. The Conference recommended revision of curriculum in line with the requirements and ideals of the country as well as to encourage the integration of various components of education.¹¹

⁷Ibid

⁸UNESCO, (2015), *Quality Education*. (Bangkok: UNESCO)

⁹Government of Pakistan, Ministry of Education.(2009). *National Education Policy 2009*. (Islamabad: Ministry of Education)

¹⁰Government of Pakistan, Ministry of Federal Education and Professional Training.(2016). Minimum standards for quality education in Pakistan. (Islamabad: Ministry of Federal Education and Professional Training)

¹¹ Government of Pakistan, Ministry of Interior (Education Division). (1947). *Proceedings of the Pakistan Educational Conference*.(Karachi: Ministry of Interior, p12 & p. 41).

The Commission on National Education, 1959 analysed the situation regarding curriculum development and recommended revision of curricula in the light of social and economic needs of the country as well as individual interests.¹² The Commission suggested the designing of curricula at primary level to focus on developing basic skills in reading, writing, and arithmetic, creating high sense of patriotism as well as a liking for working with one's own hand and core compulsory subjects and additional subjects for specific vocations and careers at secondary level. The Commission also proposed the establishment of Textbook Boards in the country to regulate textbook development. In pursuance of the recommendations of the Commission, a Curriculum Committee for primary and secondary education was appointed. The committee proposed the objectives of primary education, declaring middle stage as part of secondary education and diversification of curricula at secondary level.¹³

Subsequent to that various Educational Policies and programmes were launched in the country to improve the education system as a whole. A glimpse of these efforts is given hereunder:-

- The Education Policy (1972-80) recommended designing of curricula relevant to nation's changing social and economic needs compatible with ideology of the country. In order to achieve national cohesion and harmony, the policy recommended implementation of national curriculum in all federating units.¹⁴
- The National Education Policy and Implementation Programme 1979 recommended revision, modernization, and Islamization of curricula to bring it in conformity with Islamic ideals.¹⁵
- National Education Policy 1992-2002 focused on restructuring the existing educational system on modern lines in accordance with principles of Islam to create enlightened Muslim society and to improve the quality of education by revising curricula.¹⁶
- National Education Policy 1998-2010 stressed on diversifying education system, making curriculum development a continuous process, popularizing Information Technology and making the Quran teaching and Islamic principles as an integral part of curricula.¹⁷
- National Education Policy 2009 proposed revitalizing the existing education system to cater to social, political, and spiritual needs of individuals and society. The policy laid emphasis on the preservation of the ideals, which led to the creation of Pakistan

¹²Government of Pakistan, Ministry of Education. (1959). *Report of the Commission on National Education 1959*. (Karachi: Government of Pakistan Press).

¹³ *ibid*

¹⁴Government of Pakistan, Ministry of Education. (1972). *The Education Policy 1972-1980*. (Islamabad: Ministry of Education)

¹⁵Government of Pakistan, Ministry of Education. (1979). *National Education Policy and Implementation Programme 1970*. (Islamabad: Ministry of Education)

¹⁶Government of Pakistan, Ministry of Education. (1992). *National Education Policy 1992-2002*. (Islamabad: Ministry of Education)

¹⁷ Government of Pakistan, Ministry of Education. (1998). *National Education Policy 1998-2010*. (Islamabad: Ministry of Education)

and strengthen the concept of basic ideology within Islamic ethos. The Policy also recommended development of a common curricular framework to be applied to educational institutions, both in public and private sectors. The Policy further recommended to the Government to take steps to bring the public and private sectors in harmony through common standards, quality and regulatory regimes.¹⁸

Before 1967 there was no permanent institution responsible for curriculum development in Pakistan and curriculum development was not visualized as distinct, separate and specialized function. The entire curricular activity was carried out through committees which were created for a specific purpose at a specific time and were dissolved as soon as the task was over. The curriculum development was a part of many other functions of various organizations of a provincial education department and there was no specific organization for development of curriculum till establishment of curriculum bureaus. National Bureau of Curriculum and Textbook was set up in pursuance of decision taken in the Governors' Conference held in February 1967.¹⁹ The main functions of the Bureau included the need for integration, coordination of the work of the provinces and setting standards of education.²⁰ Earlier in 1962, a regular system of production and distribution of text books was introduced in the country with the establishment of West Pakistan Textbooks Board in Lahore and East Pakistan Textbooks Board in Dhaka. Prior to this, there was no regular system of printing, publishing, and distribution of textbooks. Subsequently Textbook Boards in each province were established for preparing, publishing, stocking, distributing, and marketing school textbooks.²¹

The Constitution of Pakistan 1973 had included education in Concurrent Legislative List which indicates that it is a joint function of federal and provincial governments. The concurrent legislative list contains subjects like policy, planning, curriculum, syllabus, standards of education and Islamic education.²² Ministry of Education at the federal level was empowered through Federal Supervision of Curricula, Textbooks and Maintenance of Standards of Education Act, 1976 to supervise curricula, textbooks and other learning materials as well as to maintain standards of education. The National Bureau of Curriculum and Textbooks established in 1967 got the legal mandate under Federal Supervision Act of 1976 and functioned under the Curriculum Wing of the Ministry of Education to supervise curriculum and textbooks development and approval and to maintain curriculum standards from primary to the higher secondary levels. The National Bureau of Curriculum and Textbooks was supported by the Provincial Bureaus of Curriculum, Textbook Boards and other related institutions in the development and revision of curriculum, development and appraisal of textbooks, teachers' delivery, development of standards, assessment of learning achievements and all activities falling within the purview of the Federation under the Concurrent Legislative List.

¹⁸Government of Pakistan, Ministry of Education. (2009). *National Education Policy 2009*. (Islamabad: Ministry of Education)

¹⁹UNESCO. (1977). *The national bureau of curriculum and textbooks of Pakistan*. (Bangkok: UNESCO);

Haider, G. (2016). Process of curriculum development in Pakistan. *International Journal of New Trends in Arts, Sports & Science Education*,5(2), 15-20. Retrieved from <http://www.ijtase.net/ojs/index.php/IJTASE/article/view/488/574>

²⁰ Ibid

²¹ Majeed, A. (2009), *Key reforms for quality improvement in education: New interventions in curricula and textbooks*. (Islamabad: Ministry of Education, Government of Pakistan)

²² *Constitution of Islamic Republic of Pakistan*, 1973, Entry 38 & 39

The Concurrent Legislative List was abolished through 18th Amendment in the Constitution. Education is now the sole responsibility of the provinces including curriculum, textbooks and all other related matters concerning learning in the schools from primary up to higher secondary level.²³ However, in a Conference with the Prime Minister the provinces agreed to implement the National Education Policy 2009 notwithstanding the abolition of the Concurrent Legislative List.²⁴

²³Government of Pakistan, National Assembly Secretariat, Islamabad. (2010). *18th Constitutional Amendment*,

²⁴UNESCO.(2011). *Situation analysis of the education sector*. Retrieved from http://unesco.org.pk/education/documents/situationanalysis/National_Final_Report_Education_Policy_Analysis.pdf

Rationale and Format for National Curriculum Framework (NCF)

2.1 Need for National Curriculum Framework

Pakistan does not have any National Curriculum Framework (NCF) while most of the countries do have such frameworks and they develop their curricula in the light of these frameworks. A large number of countries having federal structure have core curriculum or national curriculum framework for school education or common standards for syllabi. Such countries include India, Nepal, China, Russia, Malaysia, Iraq, Nigeria, Australia, Germany, etc. United States of America through Federal Ministry of Education has introduced common standards for various compulsory subjects. United Kingdom and France also follow uniform curricula across the country²⁵. Majority of the Muslim countries have uniform curriculum for all the schools. These include Turkey, Egypt, Jordan, Indonesia, UAE and Saudi Arabia, etc. Uniform core curriculum is implemented in over 95 countries of the world.

In Pakistan four distinct systems of education and examinations are being followed i.e. public school system, private school system, Deeni Madaris system and non-formal education system. Each one follows different curricula and assessment systems resulting in wide range of inequalities and disparities, uniformity in curricula and standards has, therefore, become a matter of great concern. The abolition of Concurrent Legislative List under 18th Constitutional Amendment which fully devolved education to the provinces has added yet another dimension of uniformity in standards amongst various provinces/areas. This will raise national and global concerns for uniformity in curricula and standards.

The curriculum, textbooks and learning materials, teacher education and training, examinations and assessment are not an end in the education spectrum as a whole rather these are means to an end. The ultimate end is the learning and acquisition of knowledge, skills and dispositions and respect for law, human rights, social norms and traditions in line with the divine guidance and Constitution of Pakistan as well as national and international obligations. The curricula, textual materials, teachers, learning resources, assessment and educational management, therefore, should be designed in a way that the goals of education, as also mentioned in Chapter 1 are faithfully and completely achieved and the dream of developing Pakistan as a prosperous nation is fulfilled. A curriculum framework that is developed nationally in consultation with all the federating units is the answer to all these narratives which should be based on the ideals of the founder of the nation *i.e.* Unity, Faith and Discipline.

²⁵National Institute for Educational Research.(1999). *An International Comparative Study of School Curriculum*. (Tokyo: National Institute for Educational Research); International Curricula. (n.d). Retrieved from <http://www.mempowered.com/children/international-curricula>

2.2 Issues and Challenges after 18th Constitutional Amendment

After 18th Constitutional Amendment, the devolution of curriculum and standards has created number of issues and challenges which need to be addressed urgently. Some of the main challenges are as follows:

- (i) Safeguarding and promoting the ideology of Pakistan.
- (ii) Ensuring integrity, solidarity and national cohesion.
- (iii) Developing and maintaining uniform standards in learning and assessment.
- (iv) Ensuring uniformity in diversity.
- (v) Honouring the national and international commitments.
- (vi) Implementing Article 25A Right to Education.
- (vii) Coordination, linkages and harmonization.
- (viii) Equal access and opportunities to Learners.

The 18th Amendment also created various opportunities for the provinces to incorporate the regional/local requirements in the curricula. In order to address the above issues and challenges it was imperative to constitute a national coordinating body in the name of National Curriculum Council (NCC) whose main task is to develop a National Curriculum Framework in consultation with all the stakeholders followed by development of 1) standards for learning; and 2) assessment of learning achievements.

2.3 Development of National Curriculum Framework

Curriculum framework is a policy document on curriculum drawn from the national policy documents such as the Constitution of Pakistan, National Education Policy and Vision 2025. Such a framework includes mechanisms, timeframe, ingredients and needs for developing or revising curricula and all other related matters concerning learning in schools. It sets out philosophical basis for the curriculum, knowledge, understanding, skills, values, and attitudes that students are expected to acquire in terms of learning outcomes in the key learning areas at a specific level. It also offers a broad curricular policy guideline for the development of subject curriculum, instructional delivery system, assessment and testing of students' achievement and professional development of teachers including recommendations for systemic changes required for effective implementation of curriculum.²⁶

2.3.1 Establishment of National Curriculum Council

As a first step, a National Curriculum Council (NCC) has been constituted under the Ministry of Federal Education and Professional Training which consists of three members from each Province/Area – one from Curriculum Bureaus, one of Textbook Book Boards, and one from Education Department. The main objectives and functions of NCC are as under:-

- (a) To serve as a professional, advisory and consultative national body to steer and guide the development of curriculum in close collaboration and consultation with all

²⁶Shah, T.H.(n.d.).*Concept paper on Developing National Curriculum Framework*. (Islamabad: Ministry of Education)

the federating units to ensure minimum quality standards from Early Childhood Education to grade XII;

- (b) To develop jointly the curriculum framework leading to minimum curriculum standards; and
- (c) To carry out and oversee the implementation of the curriculum framework by the provinces/areas in their respective provinces/areas.

NCC Secretariat has been established. One of the functions of NCC is to facilitate the process of development of National Curriculum Framework in consultation with all federating units. NCC constituted a sub-committee comprising one member from each Province/Area. The sub-committee prepared the outline and objectives of National Curriculum Framework (NCF) which were approved by the NCC and are reproduced below: -

2.3.2 Process for development of NCF

As a follow-up to the functions (b) assigned to the National Curriculum Council, an outline for NCF was developed by a sub-committee of NCC consisting of representative from provinces/areas. As per the outline approved by NCC, National Curriculum Framework has to address the following concerns: -

i) Ideological concerns

- National ideology, integrity and cohesion
- National goals, aims and objectives of education
- Foundations of Curriculum (philosophical, psychological and sociological)
- National and provincial contexts in the curriculum
- Integrity of Muslim Ummah

ii) Academic concerns

- School stages and Scheme of Studies
- Curriculum and Learning Materials in the spirit of 18th Amendment
- International context and knowledge construction in 21st century Pakistan.
- Medium of instruction for various levels of schooling.
- School age and Early Childhood Education and Development.

iii) Socio-cultural concerns

- Set of core values such as compassion and care, hard work, Fairness, Honesty, integrity, Respect, Humbleness, Responsibility of Pakistani society considering provincial/regional context.
- Application of knowledge in socio-cultural, geopolitical and religious context of Pakistan.
- Application of knowledge for broader understanding, peace and development.

iv) Implementation, feedback and evaluation

- School environment and classroom delivery
- Teacher preparation
- Examination and assessment
- Research, feedback and evaluation

v) Emerging trends

- Inclusiveness
- Development of Human Resource in agriculture
- Democracy and constitutional supremacy
- Citizenship
- Human rights
- Environment and climate change
- HIV-AIDS and other fatal diseases
- Entrepreneurship
- Other national /global concerns
- Integrating of ICT in Teaching and learning

2.3.3 Objectives of NCF

The sub-committee constituted by NCC proposed the following objectives of NCF which have been duly approved by NCC:

- i. To provide an appropriate structure to ensure compatibility in diversity to achieve national goals of education.
- ii. To provide broader guidelines regarding what all students should know, understand and value on completion of a specific level of schooling (*i.e.* pre- primary to higher secondary).
- iii. To suggest flexibility and increased autonomy to provincial, regional and local education authorities and to classroom teachers to take care of local and regional needs within broader perspective of national policies and needs.
- iv. To web national education policy and provincial /regional institutions engaged in curriculum development, textual/learning materials development, delivery system including schools, education managers, teacher training institutions
- v. To provide an instrument for accountability in education, to all stakeholders including public representatives, through curriculum evaluation and feedback.

2.3.4 Scope of NCF

In view of the outline and objectives of NCF approved by NCC, the scope of NCF, *inter alia*, includes the following:-

- (i) National goals and objectives of education.
- (ii) Vision and mission covering all components of education especially quality of education.
- (iii) Guidelines for:-
 - (a) Process for development of curriculum including scheme of studies;
 - (b) textbooks and learning materials development;
 - (c) teacher education and continuous professional development;
 - (d) learning environment and resources;
 - (e) medium of instruction and language policy;
 - (f) assessments and examinations;
 - (g) feedback and research; and
 - (h) Information sharing and harmonization.

In short, the NCF provides guidelines for achieving national vision, mission, goals and objectives of education. NCF aims to evolve effective and productive principles, processes, policies and strategies for curriculum development, implementation and evaluation.

Process of Curriculum Development

Curriculum can be viewed and defined from various angles. It is designed keeping in view multiple considerations and needs. In different countries, goals, objectives, structure, content, and implementation strategies of curricula may vary corresponding to their diverse socio-economic contexts. Since curriculum relates to and influences children, schools, teachers, economy and polity of a society, and consequently future of a country, hence multiple stakes are involved in its preparation and delivery. Therefore, participation of all stakeholders in the process of curriculum development and reflection of their view points, aspirations, and values in the curriculum should be ensured. Universal Declaration of Human Rights adopted by the United Nations in 1948 recognizes that the parents have a prior right to choose the kind of education that shall be given to their children.²⁷ This means, parents are the most important stakeholders of curriculum development. Elected public representatives also convey wishes and views of the community which consists of parents as well.

3.1 Foundations of Curriculum

Commonly referred foundations for curriculum development are listed below:-

- i. Philosophical considerations
- ii. Psychological aspects
- iii. Social/cultural factors
- iv. Historical factors
- v. Economic considerations

3.2 Curriculum Foundations for Pakistan

The following constitutional and policy provisions form basis for the foundations and objectives of curriculum in Pakistan.

²⁷United Nations. (1948). *Universal Declaration of Human Rights, Article 26 (3)*, adopted by UN General Assembly in 1948 (p.54).

3.2.1 Constitutional foundations

The following constitutional provisions provide guidelines for the formulation of aims and objectives of the curriculum, and its content:

a. **Preamble to the constitution**²⁸:

Preamble to the Constitution lays down that Sovereignty belongs to Allah and that in the State of Pakistan:-

- i. the principles of democracy, freedom, equality, tolerance and social justice, as enunciated by Islam, shall be fully observed;
- ii. the Muslims shall order their lives in accordance with the teachings and requirements of Islam as set out in the Holy Quran and Sunnah;
- iii. the minorities shall be allowed to practice their religion and develop their cultures and their rights fully safeguarded;
- iv. fundamental rights shall be guaranteed.

Preamble also refers to the declaration made by the Founder of Pakistan, Quaid-i-Azam Muhammad Ali Jinnah, that "Pakistan would be a democratic state based on Islamic principles of social justice".²⁹

These Constitutional provisions are the basic guidelines to develop a broader framework for the curricula.

b. **Islam as the state religion**³⁰:

Article 1(1) declares the name of the country as 'Islamic Republic of Pakistan' and Article 2 declares Islam as the 'State religion' of the country.

c. **Fundamental rights**³¹:

Chapter 1 of the Constitution begins with the statement that any laws inconsistent with Fundamental Rights (of the Constitution) to be void. This Chapter has 24 Articles that guarantee various fundamental rights; including freedom of movement, freedom of assembly, freedom of speech, freedom to profess religion and manage religious institutions, right to information, right to education, and safeguard against discrimination in services on the grounds only of race, religion, caste, sex, residence, or place of birth.

[Articles specifically relating to education are presented in more detail in subsequent sections]

²⁸The Constitution of Islamic Republic of Pakistan 1973, Preamble

²⁹ibid

³⁰ The Constitution of Islamic Republic of Pakistan 1973, Article 1 (1) & 2.

³¹ The Constitution of Islamic Republic of Pakistan 1973, Articles 8 to28

d. **Safeguard in respect of religious education³²**:

Article 22 has three sub-clauses. First sub-clause provides protection to all persons against receiving any religious instruction which is other than of their own. Second sub-clause guarantees that there will be no discrimination for any religious community in granting exemption or concession in tax to its religious institution. Third sub-clause states that no citizen will be denied admission to any public funded educational institution on the ground only of race, religion, caste, or place of birth.

e. **Right to education³³**:

Article 25A – Right to Education inserted through 18th Constitutional Amendment makes the State responsible to provide free and compulsory education to all the children of the age from 5 to 16 years (irrespective of their race, religion, gender or place of residence).

f. **Right to preserve distinct language, script and culture³⁴**:

Article 28 states that any section of citizens having a distinct language, script or culture, have the right to preserve the same and establish institutions for this purpose.

g. **Provision of basic necessities of life to all³⁵**:

Article 38(d) states that the State, as a principle of policy, is responsible for provision of basic necessities of life including ‘food, clothing, housing, education, and medical relief for all such citizens’ without any discrimination.

h. **National and provincial languages³⁶**:

Article 251 declares Urdu as the National language, and requires that arrangements are made for its use for official and other purposes. All curriculum documents, therefore, should be in national language as well. Clause (3) allows provincial assemblies to take measures to teach, promote and use a provincial language in addition to the Urdu language.

3.2.2 Vision and objectives of national education policies

Education Policies reflect the aspirations of the nation and are generally prepared through wider participation of all the stakeholders to achieve national goals as set out in their ideology and philosophy of life. In Pakistan, the Educational Policies framed from time to time derived their vision and objectives based on the strengths and motivation provided through the guidelines

³² The Constitution of Islamic Republic of Pakistan 1973, Article 22

³³ The Constitution of Islamic Republic of Pakistan 1973, Article 25A,

³⁴ The Constitution of Islamic Republic of Pakistan 1973, Article 28,

³⁵ The Constitution of Islamic Republic of Pakistan 1973, Article 38(d),

³⁶ The Constitution of Islamic Republic of Pakistan 1973, Article 251,

given by teachings of the Holy Qur'an and the Sunnah of the Holy Prophet (peace be upon him), Founder of the nation, constitutional provisions, national and international commitments, societal norms, diverse cultures, traditions and practices.

3.2.3 Curriculum and national education policies

Educational Conference held during December 1947 was the first national level consultation to deliberate upon and outline future steps and policy actions for promotion of education in the country. In his message on this occasion, Quaid-i-Azam Muhammad Ali Jinnah emphasized that education policy and programmes should suit to history and culture³⁷ and address modern needs including scientific and technical education.³⁸ The Conference also resolved that *education system in Pakistan should be inspired by Islamic Ideology, especially focusing on universal brotherhood, tolerance and justice.*³⁹

Commission on National Education (1959) recommended emphasis on character building and focus on science and technical education, national language as medium of instruction and religious education.⁴⁰ The Commission in its report stated that "*Our education system must play a fundamental part in the preservation of the ideals which led to the creation of Pakistan and strengthen the concept of it as a unified nation*".⁴¹ National Education Policy approved in September 2009, put forth various priorities which all the federating units agreed to pursue notwithstanding the devolution of education under 18th Constitutional Amendment⁴². It presented the following Education Vision for the country:

3.2.4 Education vision

*"Our education system must provide quality education to our children and youth to enable them to realize their individual potential and contribute to development of society and nation, creating a sense of Pakistani nationhood, the concepts of tolerance, social justice, democracy, their regional and local culture and history based on the basic ideology enunciated in the Constitution of the Islamic Republic of Pakistan"*⁴³.

The Educational Vision of NEP 2009 emphasizes importance of creating learning opportunities that can help all children and youth in Pakistan to realize their full potential. This Vision highlights that the aim of education is to contribute for national development and creating Pakistani nationhood. It underlines that education should foster tolerance, social justice, and democracy in new generations, and preserve regional and local cultures and history, and ideology enshrined in the Constitution.

³⁷ Government of Pakistan, Ministry of Interior (Education Division).(1947). *Proceedings of the Pakistan Educational Conference*. (Karachi: Ministry of Interior)

³⁸ *ibid*

³⁹ *ibid*

⁴⁰Government of Pakistan, Ministry of Education.(1959). *Report of the Commission on National Education 1959*. (Karachi: Government of Pakistan Press, p.40)

⁴¹*ibid* (p.10)

⁴²Government of Pakistan, Ministry of Education. (2009). National Education Policy 2009 , (Islamabad: Ministry of Education); UNESCO.(2011). Situation analysis of the education sector. Retrieved from http://unesco.org.pk/education/documents/situationanalysis/National_Final_Report_Education_Policy_Analysis.pdf

⁴³Government of Pakistan, Ministry of Education. (2009). National Education Policy 2009 , (Islamabad: Ministry of Education p.10)

3.3 Aims and Objectives of Education

Some of the Aims and Objectives related to curriculum development given in the National Education Policy 2009 are given below:

- i. To revitalize the existing education system with a view to cater to social, political and spiritual needs of individuals and society.
- ii. To play a fundamental role in the preservation of the ideals, that led to the creation of Pakistan, and strengthen the concept of the basic ideology within the Islamic ethos enshrined in the 1973 Constitution of Islamic Republic of Pakistan.
- iii. To create a sense of unity and nationhood and promote the desire to create a welfare State for the people of Pakistan.
- iv. To promote national cohesion by respecting all faiths and religions and recognize cultural and ethnic diversity.
- v. To promote social and cultural harmony through the conscious use of the educational process.
- vi. To provide and ensure equal educational opportunities to all citizens of Pakistan and to provide minorities with adequate facilities for their cultural and religious development, enabling them to participate effectively in the overall national effort.
- vii. To develop a self-reliant individual, capable of analytical and original thinking, a responsible member of society and a global citizen.
- viii. To aim at nurturing the total personality of the individual: dynamic, creative and capable of facing the truth as it emerges from the objective study of reality.
- ix. To raise individuals committed to democratic and moral values, aware of fundamental human rights, open to new ideas, having a sense of personal responsibility and participation in the productive activities in society for the common good.
- x. To revive confidence in public sector education system by raising the quality of education provided in government owned institutions through setting standards for educational inputs, processes and outputs and institutionalizing the process of monitoring and evaluation from the lowest to the highest levels.
- xi. To enable an individual to earn his/her livelihood honestly through skills that contribute to the national economy and enables him/her to make informed choices in life.

All the above eleven objectives of the National Education Policy 2009 can be grouped into Curriculum Foundations discussed under 3.2 Curriculum and its Foundations in the following matrix required to be kept in view as a reference point when the details of the curriculum framework and its implementation are worked out or while framing the detailed curriculum (appraisal or revision or development) for each subject and while assessing its implementation and performance of all the stakeholders.

Matrix of objectives of NEP 2009 and curriculum foundation

Curriculum Foundations	Objectives of National Education Policy 2009			
Philosophical & Historical Foundations	Social, political, and spiritual needs of individuals and society	History of Pakistan or Pakistan Movement	Basic Ideology of Pakistan as given in Constitution	Unity and Nationhood
Social and Cultural Foundations	Respect of all faiths, religions, cultural diversity for national cohesion	Equal educational opportunities for all citizens	Facilities to minorities for their religion, cultural and economic development	Social and cultural harmony
Psychological Foundations	Personality development for a self-reliant individual,	Analytical and original thinking	Responsible member of the society (Civic Education).	Global citizenship (Emerging trends and themes of 21 st Century)
-do-	Creativity and openness	Scientific approach; discovery of truth through research	Democratic and moral values, fundamental human rights, open to new ideas	Productivity for common good.
-do-	Improving quality of education	Standards for educational inputs, and outputs	Standards for educational processes	Monitoring and evaluation
Economic Foundations	Participation in productive activities in society for the common good.	To enable an individual to earn his/her livelihood through skills	Contribute to the national economy	To make informed choices in life.

Apparently, economic foundations may not be so explicit in the above objectives, although Objective No 9 and 17 (given in NEP 2009) refer to participation in productive activities, acquisition of skills for livelihood and contribution for national economy.

3.4 International Commitments, Global Challenges and Learning Needs of 21st Century

Pakistan, being a part of the larger world community, has signed a number of conventions, frameworks, and development goals which require it to align its education system to the learning needs commonly agreed by the comity of nations. Pakistan has supported **Universal Declaration of Human Rights (1948)** and thus committed to take steps for the fundamental rights agreed by the world nations. Article 26 of this Declaration proclaims that access to free elementary education is the right of all human beings. Similarly, since Pakistan has ratified **Convention on the Rights of the Child (CRC)** in 1990, therefore, it is bound to offer educational opportunities that facilitate full development of the child's personality, and teach children the respect for human rights, promotion and protection of cultural identity, language and national values of the country, peace, tolerance, equality of sexes, and friendship.

During 2011, Pakistan ratified **UN Convention on the Rights of Persons with Disabilities – (UNCRPD)** of 2006 which obligates the member states to ensure provision of educational opportunities to all disabled children and also emphasizes inclusive environment for their full potential and personality development. Pakistan has signed the **Sustainable Development Goals**, resolved by the United Nations in 2015. SDG 4 requires member states, to inculcate concepts of sustainable development, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity in the school curricula.

3.5 Guiding Principles for Curricula in Pakistan

In pursuance of the Constitutional obligations, provisions of National Education Policy 2009, targets set in the Vision 2025 and international commitments, the following guiding principles for curricula emerge as common and essential for the whole of Pakistan:

- (i) Faith based on teaching of Holy Quran and Sunnah as well as ideology of Pakistan.
- (ii) National integration through knowledge about history of Pakistan, patriotism, equality of opportunities and social justice.
- (iii) Respect for the rights and freedoms of minorities as envisaged in the Constitution.
- (iv) Promotion and protection of:
 - a. national identity,
 - b. national and provincial languages, and
 - c. cultural diversity in the country.
- (v) Democracy, tolerance, peace, non-violent resolution of conflicts, and global citizenship.

- (vi) Holistic development of child through optimum cultivation of abilities and discovery of potentials for promotion of life skills.
- (vii) Scientific knowledge, research, technical, vocational and Agro-tech training, and other relevant skills for economic development.

3.6 Interweaving Goals of Curriculum for Pakistan

Keeping in view the essence of Curriculum Foundations discussed earlier in this Chapter, following core objectives of curriculum should, therefore, be kept in view while framing the curriculum in all the federating units of Pakistan:-

- i. To strengthen national integration and foster patriotism through transfer of information and knowledge about Pakistan movement, and character building in accordance with Islamic faith and human values.
- ii. To promote social cohesion and harmony among the provinces, regions, and areas in Pakistan through equality of opportunities for all sections of the society, especially for the disadvantaged and vulnerable groups, including religious, ethnic, and linguistic minorities, women, and persons with disabilities, in accordance with the rights and freedoms enshrined in the Constitution of Pakistan.
- iii. To preserve and support national, regional, and local languages as well as cultural heritage to appreciate cultural diversities in Pakistan.
- iv. To inculcate in all citizens the tolerance for difference of opinions and beliefs, culture of peace, resolution of conflicts through non-violent means, and equality of human beings.
- v. To nurture passion for democracy, democratic norms, social justice, respect for law and prepare citizens having realization for civil rights and responsibilities.
- vi. To equip children, youth, and adults with abilities of critical thinking, problem solving skills, and foster amongst them an aptitude for scientific inquiry, leading to creation of new learning and knowledge.
- vii. To develop human resources needed for sustainable development and knowledge economy and achieving national prosperity through technological advancement.

Curricula developed keeping in view the above guiding principles and goals will help all federating units of the country and sections of the society to individually and collectively contribute for national integration and socio-economic development, uniformity in diverse cultures, unity in diversity, as well as development of common core standards for teaching profession, students' learning achievements, textual material development, learning resources required in schools, and evaluation of the whole system.

3.7 Steps of Curriculum Development

Curriculum experts have proposed sets of sequenced actions or steps for planning and development of curriculum. For example, following seven major steps for curriculum development have been identified⁴⁴: -

- Diagnosis of Learners needs and expectations of society
- Formulation of learning objectives
- Selection of learning content
- Selection of learning experiences
- Selection of learning activities
- Determination of what to evaluate and the means of assessment

In short, process of curriculum reforms consists of following main steps: -

- i. Assessment of needs
- ii. Setting goals and objectives
- iii. Selection of content
- iv. Organization of content and learning experiences
- v. Strategies for delivery and assessment
- vi. Field research and evaluation

Each of the above six steps, contains within it a number of complex courses of actions *or* exercises involving research, reflection, contemplation or making choices amongst various alternatives. However, utmost care is required to be taken in decision making at each stage. This necessitates that the whole process of curriculum review and development is planned and conducted purely in a professional manner with active contribution of a sizeable team of independent un-biased experts and should not be overshadowed by a few *or* by external political influence. The process of curriculum development, therefore, should be characterized by the following features⁴⁵:-

- Planned and systematic
- Inclusive and consultative
- Led by curriculum professionals
- Cyclic in nature
- Sustainable

3.8 Guidelines for Revision and Development of Curriculum

In many cases, specialists associated with curriculum bureaus have long experience of education sector and have developed expertise in their specific disciplines. Most of them have acquired such expertise through ‘learning by doing’ as no regular mechanism exists for professional development of staff working in curriculum bureaus and textbook boards.

⁴⁴Taba, H. (1962). Curriculum Development: Theory and Practice. (New York: Harcourt, Brace & World)

⁴⁵Stabback, P. (2016). *What Makes a Quality Curriculum*. (Geneva: UNESCO). Retrieved from <http://unesdoc.unesco.org/images/0024/002439/243975e.pdf>

Curriculum reforms in Pakistan have remained a top down process and lacks prior need assessment, broader consultation with stakeholders and piloting before framing a final draft.

3.8.1 Need assessment

The process of curriculum change or development of an entirely new curriculum should be initiated in the light of evidence based research. Need assessment should not be limited to inviting views of curriculum developers, textbook writers and teachers only. Other stakeholders and beneficiaries of education system should also be consulted. Need assessment may consist of following processes and steps:-

- (a) **Review of existing scheme of studies:** Scheme of Studies is the first step in the educational programme which identifies the subjects to be taught at different levels of education indicating weight-age and time given to each subject. Major policy decisions are taken in the Scheme of Studies about the following:-
 - i. Levels of education with time line i.e. ECE/pre-primary, primary, middle, secondary and higher secondary.
 - ii. How many and which subjects are the compulsory core subjects for each level of education?
 - iii. How many and which subjects are the elective subjects for each level of education?
 - iv. What subjects are the optional subjects for each level of education at the discretion of the schools or students or the department?
 - v. How many subjects are examinable and non-examinable at each level of education?
 - vi. Time allocation for all compulsory, elective and optional subjects as well as co-curricular and extra-curricular activities.
 - vii. Decision about the start and duration of the academic year.

All the federating units may continue to adopt and implement this scheme. However, the provinces/areas may review the existing scheme to adjust it to their local requirements and needs of their students but keeping in view the national standards and uniformity as well as the global trends.

- (b) **Review of existing curriculum:** The existing curriculum may be reviewed to identify key learning areas which need to be updated as a result of creation of new knowledge in the world, or changes in theories, principles, social and economic needs, demographic changes, individual and societal needs, emerging trends, etc.
- (c) **Content analysis of textbooks:** Teaching-learning materials used in the schools may also be reviewed to find out gaps, if any, between curricula and its manifestation in the textbooks.

- (d) **Feedback from schools and teachers:** Teachers should identify gaps in the scheme of studies, curricular contents, textbooks, learning resources and address these gaps effectively. They should also provide feedback to education and curriculum authorities to help guide future reforms or changes in the curriculum. Curriculum bureaus may design and conduct special studies to discover and collect information about issues of curriculum implementation at school level.

In addition to the above, other stakeholders like parents, scholars, researchers, public and private sector academic organizations may also be consulted for their feedback.

- (e) **Analysis of examination data:** Data generated by the examining bodies should be analysed with respect to achievements and shortfalls of students in various subjects, and their repeated inability to demonstrate mastery in certain content areas of different subjects.
- (f) **Findings of assessment surveys:** National Education Assessment System (NEAS) and Provincial Education Assessment Centres (PEAC) periodically conduct large scale studies to measure learning achievements of students with respect to curricula. These surveys reveal valuable findings about competencies of teachers, difficult areas where students and teachers have demonstrated low scores, and other background factors that influence quality of learning. These findings can serve as valuable source of guidance for curriculum reforms.
- (g) **Needs of national economy and international market:** Research should be carried out to ascertain views of employers in the industry and other fields of economy as well as the related government departments about deficiencies in capabilities of graduates. They should also be consulted about future needs of human resource development for the national economy. Findings of such a research on the market needs and trends at international level may form basis for changes in the curriculum.
- (h) **Study of curricula of other countries:** Curriculum bureaus should keep abreast with curriculum changes taking place in other developing and developed countries. This is vital to enable the country and its graduates to compete with other nations.

3.8.2 Formulating objectives of curriculum

Educational objectives help the society to translate its values and needs into an educational programme. These serve as a means for attaining goals and a guide for assessing achievement of these goals. A National Curriculum Framework explains broader aims and goals for the education including curricula. Curriculum objectives of different subjects or subject specific learning outcomes are identified based upon specific needs relating to that particular subject. As such, the objectives of a subject curriculum indicate as to what students should have accomplished after successful completion of curriculum of a subject. Objectives/learning outcomes should preferably be stated in behavioural terms *i.e.* what changes should take place in the knowledge, skills, and attitudes of students.

3.8.3 Considerations for formulation of curriculum objectives

The following aspects or points should be kept in view while formulating curriculum objectives:-

- Level of development of the society
- Developmental needs of the learners
- Competencies of teachers in the schools
- Physical facilities and learning resources available in the schools
- Needs of the national economy and values
- International/emerging trends

3.8.4 Key features of subject curriculum objectives

Curriculum objectives of a subject are characterised by following key features:

- Specify the expected performance (by the students after delivery of curriculum) and nature of evidence needed as an indicator for satisfactory performance or accomplishment.
- Cover various learning domains as per various taxonomies of educational objectives e.g. Cognitive, psycho-motor and affective etc.
- Simple, realistic and specific.
- Clear and precise enough to plan learning experiences for the students and assess extent of achievement of objectives by them.
- Reflect needs of students, teachers, as well as the society.
- Indicate benefits both to the learners and the society.
- Use action verbs *e.g.* count, multiply, write, draw, explain, describe, and distinguish.

3.8.5 Elaboration of curriculum objectives into competencies and SLOs

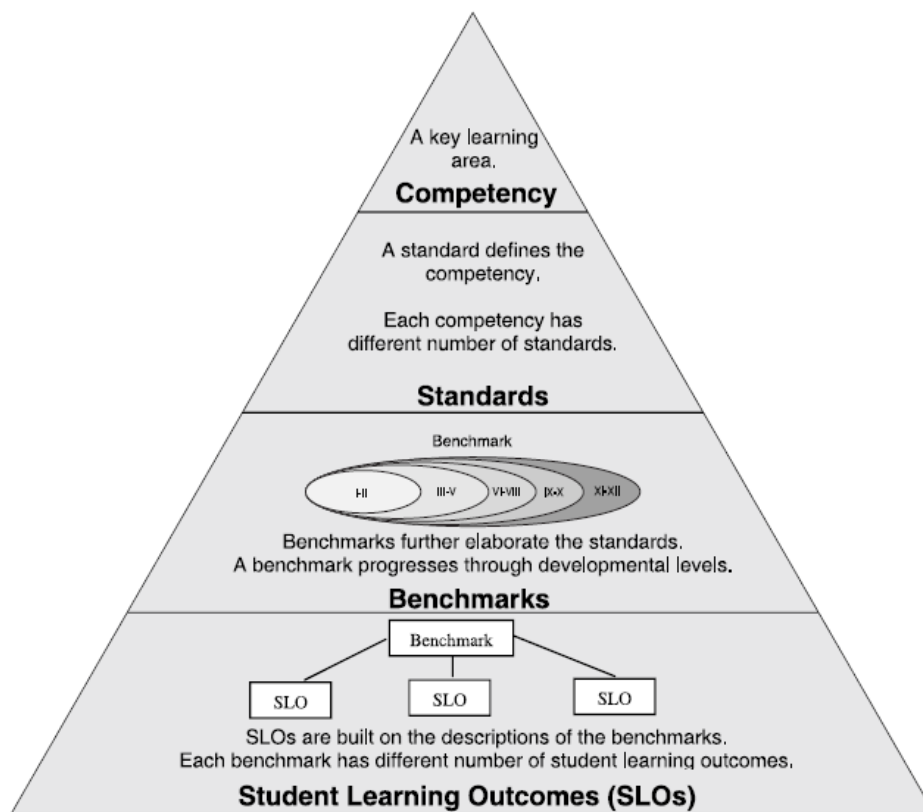
For the guidance of textbook writers, teachers, and evaluators or examiners, curriculum objectives are further elaborated or interpreted in various sub sets or more specific and simpler milestones. Different countries adopt variety of formats for writing of curriculum documents. In Pakistan, before 2005, the main curricula document included a matrix consisting of objectives, concepts, contents and evaluation strategies. The curriculum documents of various subjects prepared in 2006 onwards follow a set pattern of four components namely; Competencies, Standards, Benchmarks and Student Learning Outcomes. Curriculum 2006 defined⁴⁶ these as under:

- (a) **Competency:** A key learning area which may consist of more than one Standard.
- (b) **Standard:** A Standard (in the context of curriculum) defines, elaborates or breakdowns a competency into simpler milestones or sub sets of competencies

⁴⁶Government of Pakistan, Ministry of Education. (2006). *National curriculum for English language: Grades I-XII, 2006*, (Islamabad: Ministry of Education)

expected to be acquired by the students. ‘Standards are what students should know and be able to do.’

- (c) **Benchmark:** If defined generally, standards, benchmarks and competencies can be used interchangeably. However, in the context of Pakistan’s 2006 Curriculum, benchmark further elaborates ‘Standards’. Benchmarks progress through developmental levels of students, in terms of age and grade.
- (d) **Student Learning Outcomes (SLOs):** In education, student learning outcomes, or expected learning outcomes are used interchangeably. National Curriculum 2006 defines that ‘SLOs are built on the description of benchmarks’ and ‘each benchmark has different number of student learning outcomes’. SLOs are ‘what students should know and be able to do for each topic in any subject area...’



The above diagram elaborates the linkages and hierarchy of Competencies, Standards, Benchmarks and SLOs.

3.9 Selection of Content

Content includes concepts, themes, ideas, facts, principles, theories, information and skills that are to be imparted to the students for achievement of curriculum objectives. In the context of subject curriculum, this is the main body of knowledge which students are expected to learn, understand, relate, analyse, and apply. Content listed in the curriculum help the textbook boards and authors in developing textual materials and organizing information in a sequential manner.

3.9.1. Criteria for selection of content: Utmost care and professional insight should be used in the selection of learning content. The following principles should be followed as identified by experts:-

- (a) **Relationship with curriculum objectives:** Only those contents should be elected which have educational value and are directly related to the curriculum objectives.
- (b) **Priority and significance:** The contents should be prioritized and short listed based on their academic significance for the learner and the society. Content which contribute towards introducing and understanding basic concepts and ideas and help students in achievement of curriculum objectives, should be accorded priority.
- (c) **Validity:** The contents relating to natural or applied sciences should be selected those validity has been established. The contents of social sciences and humanities should be harmonized with national values, regional and local culture, and official sources of information.
- (d) **Relevance to life:** Preference should be given to those contents which relate to the real life situations and surroundings of the learner and emerging trends.
- (e) **Inclusiveness and diversity:** Contents should meet learning needs of various categories of learners, including pupils from different strata of the society *i.e.* students socio-economic background, gender, location, and ethnicity.
- (f) **Feasibility:** While selecting the contents, Curriculum planners should take into account the feasibility of successfully delivering the content to the students, in terms of time and resources.

3.10 Organization of Contents

Development of scheme of studies usually takes precedence to the contents selection. Systematic and sequential organization of the selected contents in accordance with the difficulty and interest level of students increases their learn-ability. For more effective delivery of contents and to foster amongst the students the desired changes, certain co-curricular activities, exercises, experimentations, and out of school interactions are also included.

Principles for better organization of contents as well as learning activities are being suggested below:-

3.10.1 Horizontal and vertical organization

Horizontal and vertical organization is important dimension for arranging curriculum content. Horizontal organization of content is based on correlation of contents that need to be delivered during the same academic year, grade or course. In horizontal organization, contents are to be arranged with respect to their *scope and integration* whereas in vertical organization, contents are organized keeping in view their *sequence and continuity*. These are elaborated below:-

- (a) **Scope:** It relates to the extent of coverage or spread (breadth and depth) of the curriculum. For example, it may include all varieties and types of educational experiences (cognitive, affective, and psycho-motor) that are to be offered to the students. Curriculum designers will have to decide as which topics, concepts, themes, principles and competencies are to be covered or included at each step of a unit and level.
- (b) **Integration:** Contents are to be organized keeping in view their inter-linkages or horizontal relations. For example, in case of Physics, students may be introduced to work out relationship among various variables (like force, energy, volume, acceleration, etc.) through various formulas. While reaching this stage, under the subject of Maths, students should also be imparted knowledge about different mathematical operations and skills corresponding to the formulas applied in the questions and exercise of Physics.
- (c) **Sequence:** Contents are to be arranged keeping in view their logical relationship and chronological order. Organization of contents should be built upon understanding of contents offered previously, in a systematic flow. Sequencing is inter-linked placement of content within a subject. For example, in language, in the beginning we introduce simpler two letter words and then gradually move up to complex or more than two letter words.
- (d) **Continuity:** Depending upon the nature of contents, there is a need to repeat those at various stages or grades, with a view to reinforce their comprehension by the learners. In this repetition, depth and breadth of concepts are also enhanced gradually. This is also called spiral recurrence and enrichment of the curriculum contents. For example, numerical fractions are normally introduced in elementary mathematics or in initial grades and algebraic fractions in higher grades alongside mathematics taught in earlier grades.

3.10.2 Articulation and balance

In addition to horizontal and vertical dimensions of organization of curriculum content, two other aspects namely, articulation and balance are also to be kept in view by the curriculum designer or curriculum writers.

- (a) **Articulation:** The dimension of articulation in curriculum contents is similar to sequencing. Sequencing is within the same grade, course or level, whereas

articulation is across various grades or subjects. Sequencing across levels but within same subject is called vertical articulation whereas sequencing across different subjects taught at the same level or grade is called horizontal articulation.

- (b) **Balance:** This aspect aims to ensure that a balance is maintained in the distribution and allocation of contents, time required for their mastery, and availability of learning experiences and various other factors which can affect quality of learning. Another important principle of balance may be that no content should be extensively explained and given extra time at the expense of some other contents.

3.11 Delivery of Curriculum

The curricula are delivered through textual materials developed by Text Book Boards and/or publishers. This is a very delicate task and requires a lot of hard work and experience for elaborating the curriculum contents into textual and learning materials. It involves the processes for selection of authors, collection of relevant resource materials, explaining key concepts considering the scope, sequence, integration, continuity, articulation and balance, selection of relevant illustrations and activities, editing, reviewing and approval, designing, etc. Chapter-4 discusses in detail the development and the approval process of textual and learning materials.

Once the textual materials are ready and made available to the students, the teacher's responsibility is to deliver the contents with the intention these were framed and at the same time help the students to understand the concepts and contents successfully. The content knowledge and the pedagogical skills of teachers are most important in this regard. Hence the qualifications and experience of the teacher play an important role in the delivery of curriculum content. Further details are given in Chapter-5.

3.12 Assessment and Evaluation of Curriculum

In education, assessment and evaluation is a continuous process and have two dimensions *i.e.* evaluation of curriculum and assessment of learners. Curriculum needs to be evaluated periodically, with respect to its objectives, content and methodology. During evaluation of curriculum, functioning of various components and support systems of education sector and relevance of their capacities to curriculum objectives are assessed. The assessment of learners is done by teachers, examining bodies and assessment systems in the country. The classroom assessments are done by teachers and mentors. Examinations are conducted by schools and by examining bodies whereas assessments of learning achievements of students at the national and provincial level on large scale are carried out by the National Education Assessment System with its counterparts in provinces.

3.13 Challenges of Curriculum Development in Pakistan

All provinces and some of the areas have organizations responsible for curriculum and textbook development. Hence, it is assumed that Provincial Bureaus of Curriculum, Directorates, or Authorities, follow scientific methods for the preparation of curriculum. Theoretically, this

may be true, but still there are inadequacies, gaps, or weaknesses at various levels, which should be diagnosed, recognized, and abridged. A few are enlisted below:

- (a) **Understaffing:** Curriculum organizations (Bureaus or Directorates etc.) are not staffed proportionate to the volume of the task assigned to these organizations. In other words, these organizations are under staffed.
- (b) **Relevance of expertise:** In certain cases, capabilities of staff posted in these technical organizations do not match with professional requirements of curriculum development for various subjects. Convenience of employee and discretion of administrators dominate the posting and transfer decisions, instead of relevance of competency of the candidate to the mandate of the organization. Few provinces have introduced special cadres for teacher educators and curriculum specialists. Whereas in some cases, any teacher from a school or college can be posted in these curriculum bodies, irrespective of relevance of his or her qualification, experience, and aptitude for the new high order professional task.
- (c) **Absence of mechanism for continuous professional development:** There exists no in-built mechanism for in-service training of specialists posted in various curriculum related bodies to upgrade their knowledge and widen their exposure.
- (d) **Inadequate participation of stakeholders:** Committees for curriculum of various subjects are though formed, but these lack adequate representation of all stakeholders. Limited participation of stakeholders is partly determined by the financial constraints, and partly due to the reluctance of committee focal persons to look for new talent beyond their circle of acquaintance.
- (e) **Lack of field research:** Ideally, a curriculum change should take effect or initiated as a result of research in the schools, findings of assessment studies, trends of examination results, or job market analysis. Normally, curriculum change in Pakistan is a top down phenomenon. No research is conducted by curriculum related bodies on the effectiveness of curricula, suitability of textbooks, or capabilities of teachers to deliver the curricula. There is a complete disconnect between those who design curricula and those who implement it.
- (f) **Harmonization amongst federating units on curriculum and standards:** Standards are necessary for ensuring quality of education. Standards at national level are all the more necessary to ensure that the children of all areas of the country have an inalienable right to receive educational inputs of the same standard and thereafter the educational authorities assess their learning achievements on similar standards. After 18th Constitutional Amendment when the whole education has been devolved to the provinces/areas, there is an urgent need to evolve national standards for school education so that every area of the country is at par with other regions. Since standards are the part of the curriculum, therefore, it becomes mandatory for all the federating units to have the curriculum contents which are standardized and applicable to all.

Chapter – 4

Textbooks and Supplementary Learning Materials

4.1 Importance of Textbooks

Improvement in the quality of education is a key thrust of all education reforms for all times. Textbooks are a major intervention area to achieve this objective provided these are of excellent quality written in psycho-social context of the students and are in accordance with the approved Curriculum. Since the textbook is the major resource used most extensively in Pakistani public and private classrooms, it is, therefore, important to improve both the quality of content and its presentation to ensure successful implementation of the curriculum.

A textbook is a comprehensive teaching and learning source that is in print or electronic form and is designed to help the students in the learning process. In many of the developed nations of the world, textbooks are considered as just one of the array of teaching and learning sources and serve mostly as reference material to verify the facts. On the other hand, in many countries of the developing world, the textbook still remains the main and in many cases the only source for instruction. This fact focuses the spotlight on textbooks as the most significant pillar for imparting quality education.

It is universally acknowledged that textbooks and learning materials are fundamental and essential to education because these are the primary tools that schools use to provide students with access to the knowledge and skills they are expected to learn.⁴⁷ Textbooks are at the heart of educational enterprise, as these offer students “a rich array of new and potentially interesting facts, and open the door to a world of fantastic experience”.⁴⁸ A simple definition of the textbook is “a book about a particular subject that is used in the study of that subject especially in a school”.⁴⁹ Another definition states “textbooks are collections of study and reading material related to a specific discipline or course”.⁵⁰ A more elaborate definition is that “a textbook is a collection of authentic information supported by variety of illustrations and pedagogical strategies as per prescribed curriculum. Textbooks are supposed to maximize students’ in-built capabilities and bring desired improvements among students’ cognitive, psychomotor and affective domains. It is considered as the “sole” source of knowledge for many pupils, therefore,

⁴⁷ Oakes, J. (n.d.) Access to textbooks, instructional materials, equipment, and technology: Inadequacy and inequality in California’s public schools. Retrieved from http://www.schoolfunding.info/resource_center/legal_docs/California/Williams_Experts_Reports/Williams_Oakes_report_2_InstructMaterials.pdf

⁴⁸ Chambliss, J.M. & Calfee, C.R. (1998). Textbooks for learning: Nurturing children’s minds (Oxford: Blackwell. P.7)

⁴⁹ Merriam-Webster Learners’ Dictionary, Retrieved from <http://learnersdictionary.com/definition/textbook>

⁵⁰ Reynolds, R. (2015). *A textbook: What Is It good for?* Retrieved from <https://nextthought.com/thoughts/2015/04/a-textbook-what-is-it-good-for>

textbook plays a pivotal role in the learning process of many developing countries because teachers rely totally on them to impart basic curricular content”.⁵¹

A textbook is especially written book which contains selective and systematic knowledge. In a textbook every care is taken to maintain coherence and sequence in the presentation of information and learning activities. It is made simple to the degree that suits the intended learner. It differs from an ordinary book mainly on the basis that it is basically student-friendly and also reflects the anticipated learning goals that is why the textbook is called “**the teacher in print**”.⁵² Textbooks and learning materials other than the textbook facilitate transmitting knowledge and building of skills enabling learners to interact with the real world. They are not only considered as an authentic source of information but also primary tools for shaping attitude and behaviour of students. At every level of education, textbooks and learning materials can be important vehicle for promotion of knowledge and skills.⁵³ Therefore, the textbooks and learning materials are the main sources that convey the knowledge and information to the learners in an easy and organized way. Textbooks constitute an inseparable part of any system of education. In developing countries like ours where even the minimum essential requirements of classroom are hardly available, the necessity of quality textbooks is quite evident.

A textbook is arguably the mainstay of classroom teaching. It must contain up-to-date, well laid out, concise, easy to understand and relevant narrations on the topics and subjects⁵⁴. The language, graphics, style, methodology, quality of printing, cost and size of the textbook all matter. Textbooks are going to remain a key part of learning. They just need to go digital, become more interactive and they need more analytics for realization of learning outcomes.⁵⁵

Textbooks are a key input towards provision of quality education. Their importance gets more highlighted where teacher quality is poor. Textbooks remain one of the most extensively used resources in our classroom as learning materials are hardly available other than textbooks in some teaching learning contexts.⁵⁶ It is, therefore, important to improve the quality of content and presentation to support the successful implementation of the curriculum.

4.1.1 Source for students

Students rely heavily on textbooks as their source for essential information and as the basis for examination and appraisal. In the absence of other learning materials, the importance of textbooks increases manifold. They provide the students with facts, figures, information and knowledge. Additionally, the textbooks provide examples of several exercises and assignments for students to practice what they have learnt.

⁵¹Durrani, A. (2012) *Principles of Textbook Development*, Lahore: Nazeer sons Educational Publishers

⁵²Jyothi, U. (2010). *Features of Good Textbook*. (London: Sage Publishers)

⁵³ UNESCO.(n.d.).A comprehensive strategy for textbooks and learning materials. Retrieved from <http://unesdoc.unesco.org/images/0014/001437/143736eb.pdf>

⁵⁴Government of Pakistan. (2012). *Curriculum Implementation and Monitoring Framework*, (Islamabad: Curriculum Development & Textbook Production Wing, CA& Development Division)

⁵⁵Osman, R. (2016). *Producing Interactive Learning Materials*. (London: Paramount Publishers)

⁵⁶Government of Pakistan, Ministry of Education.(2009). *National Education Policy 2009*. (Islamabad: Ministry of Education).

4.1.2 Resource material for teachers

Textbooks serve as the main resource for teachers by steering their teaching process and helping them in planning the lessons and expected learning outcomes. Textbooks are the prime source of assistance for teachers as they set out the general guidelines of the syllabus in concrete form and provide foundation to the content. Teachers find the textbooks useful as they provide order and pacing of instruction and serve as a frame- work for teaching during the academic year.

4.1.3 Features of textbooks

As this is an acknowledged fact that much of recent education has been built around the theory of multiple intelligences, therefore, textbooks should be developed keeping in view different learning styles and needs of learners. Federal/Provincial/Area Governments may initiate necessary steps in line with the above stages and get the textbooks developed which are:

- (a) Aligned with the ideology and life philosophy of the nation.
- (b) Developed having clear learning / instructional objectives.
- (c) Complying with the requirements of the relevant curriculum.
- (d) Content-wise authentic, updated and well organized.
- (e) Fluent in narration, well illustrated and self-explanatory.
- (f) Providing scaffolding to students of diversified abilities especially the weaker performers.
- (g) Pedagogical support for teachers particularly those who are novice to ensure effective delivery.
- (h) Attractive for learners having interesting and important images.
- (i) Engaging and has activities to interact with content and illustrations.
- (j) Also a source of checking learning outcomes (pre-reading, while-reading and post-reading strategies).
- (k) A stimulus for additional reading and broadening learning thirst of students.
- (l) Equally acceptable by students of either gender.
- (m) Fluent narration having variety of texts with logical progression.
- (n) Free from indoctrination and biases nationally and even internationally.
- (o) Various venues for thought and lateral thinking for problem solving skills.
- (p) Linguistically age-appropriate and promotes language efficiency.
- (q) Full of examples from real life to elaborate concepts and themes.
- (r) Pose challenging tasks for students to deal with problem solving situations in real life.
- (s) Inclusive with regard to life skills, social fabric, human rights and rights of minorities.
- (t) Subject index, glossary, references and authors' profile at the end

4.2 Importance of Support Materials to Enhance Learning

Teachers use the textbooks as their main resource material around which teaching is planned. In order to support the teaching process in the classroom, textbooks need to be accompanied by support material that ensures that learning is taking the desired direction. These support materials include teachers guide and workbooks.

It is believed that only prescribed textbooks cannot achieve all curriculum objectives particularly when critical thinking, problem solving and other higher order thinking skills are required to be inculcating in the hearts and minds of learners. This also becomes imperative when national aims and objectives are to be attained in an orderly fashion. Along with the prescribed materials, teachers are to be encouraged to use the following:

- i. Encyclopaedia, sourcebooks, newspapers, journals, magazines etc.
- ii. Auditory materials such as radio broadcasts and tape recordings
- iii. Visual materials such as cut-outs, maps, posters, television and computers etc.
- iv. Environment, community and the outdoor etc.

In this regard, we must keep in mind that a deep and abiding loyalty to Islam, strengthening unity of Pakistan and securing solidarity in the outlook of the people living in all provinces and areas of the country are the main concerns that need to be fostered in the hearts and minds of our students through formal education system. Presently, we are disseminating knowledge, skills and attitudes among our students through three main systems namely;

- i. Traditional Religious / Madrassah Education
- ii. Public Schools/ Colleges/ Universities
- iii. Elite Private Schools

Unfortunately, the three are producing different types of products who think, behave and act differently. Likewise, there are trust deficit among their cognitive schemas with respect to life goals and targets to be achieved. This needs to be minimized not only through formal readers but also through additional materials. Furthermore, in-depth understanding of curricular concepts and themes supplementary reading materials are required to be developed for all grades and for all levels. Such materials are needed to be aligned with:

- i. National aims and objectives of NEP
- ii. Emerging trends and issues
- iii. Local / regional places and people
- iv. Cultural and local contexts
- v. Developmental levels of learners
- vi. Global needs and requirements
- vii. Human personality's aspects; physical, mental, emotional, ethical, social and aesthetics.

Supplementary reading materials should be developed keeping in view that they enhance self and independent learning that lead to further inquiry and thus students become real seekers of the truth and knowledge. They start to think out of box and from all angles and ultimately become intuitive and problem solvers in practical life.

4.3 Teachers' Guides

Trained teachers in well-organized schools are expected to plan out their lessons to help them structure the learning for themselves and for the students. Research indicates that all students benefit from, and appreciate well-structured lessons. School curriculum and in particular the textbooks become the basis for defining the lesson planning. However, in most cases, teachers need support in designing activities that can effectively engage students in conceptual understanding and clarity. This is where the teacher's guides come in which are designed for the specific purpose of making learning meaningful to the students.

Textbooks should preferably come with a teacher's guide aimed at facilitating the teachers of how the textbook is written and how best to use it to facilitate student learning. Teacher guides provide detailed description of key concepts and provide several examples that facilitate learning. Teacher's guide serves to educate teachers and thus serve as a means of helping teachers develop professionally.

Such guides may outline innovative ways of teaching a particular lesson, suggest class activities to reinforce the content, provide examples of exercises and assignments. They are particularly important when a new curriculum or new teaching strategies are being introduced, and in instances where teachers are not adequately trained.

4.3.1 Basic features of a teacher's guide

- Teachers' guides are based on accompanying textbooks or curriculum, knowledge and strategies grouped according to chapter and sequenced to correspond with text.
- Provides step by step guidance to help teacher teach the text and facilitate in performing extended activities
- Provides various examples of activities that teachers can use to facilitate the students in clarifying and understanding concepts
- Sets specific examples for employing various teaching strategies for suggested teaching
- Gives several examples for applying various assessment strategies to measure student learning outcomes
- Provides details of the teaching-learning resources that can be used by the teacher

4.4 Workbooks

Workbooks are students' books designed to include a variety of exercises that are related to each chapter in the textbook. Workbook exercises help to reinforce students' conceptual understanding of the concepts dealt within the text, to develop their skills and abilities to apply knowledge to new situations.

4.4.1 Basic features of a workbook

- Contain exercises and activities for each chapter, topic, sub-topic (when deemed necessary)
- Exercises and activities effectively help develop, practice and assess students' content knowledge, attitudes, skills and higher order thinking
- Non-repetitive in style and structure in order to keep the students' interest and engagement high
- To develop self-learning among students and the ability to understand and follow clear instructions
- Helpful and easy to understand illustrations/examples/explanations

4.5 Supplementary Learning Materials

Supplementary materials expand upon the information in the textbook. They range from chalk and blackboards to books and use of educational technology and interactive computerized lessons. Printed supplementary materials reinforce the concepts of the curriculum and go beyond the boundaries laid down by official goals and objectives to expand the scope of students thinking and vision. They develop the students' ability to read and build up their vocabulary and encourage independent reading. Supplementary Reading Materials (SRMs) play a vital part in developing the habit of and love for reading.

The entire scope of supplementary materials includes work books, reading programs or schemes, children's fiction (easy readers, stories, written plays, and anthologies), children's non-fiction, audio tapes, video tapes, multimedia learning packages, science kits, reference books, such as, dictionaries and atlases, magazines, comics, posters, wall charts, and maps.

4.6 Issues and Challenges in Implementation

The policy faced many challenges during its implementation and could not yield desired results. Main challenges were:-

- i. Choice on the part of the learners and competition on the part of the producer were the essence that was supposed to lead to a wider variety of quality products *i.e.* textbooks and other learning materials in line with the Students Learning Outcomes (SLOs) identified in the curriculum. However, in practice this is not happening. The students are not exercising the right of choice given in the Policy as a single textbook is being given to the students, free of cost, by the Governments. This textbook is the only learning resource being used by the teachers for delivery of curriculum content. The real competition in textbook development could also not emerge as the private publishers have limited capacity and lack professional attitude.
- ii. A good textbook is not merely a well-designed collection of facts but also allows its users to assess those facts with the help of exercises and other assessment strategies. But the textbooks being developed may have following inadequacies:-
 - a. Dull narration and illustration.

- b. Weaker cohesion and coherence.
 - c. Language not compatible with the level of students.
 - d. Concepts are poorly explained having no examples from real life
 - e. Lack of alignment horizontally and vertically (grades & subjects)
- iii. Timely availability of textbooks is a major issue as delays occur at every stage for various reasons. The publishers do not prepare the manuscripts well in time, the review process is too slow, the selection of textbook under free textbooks scheme is a difficult task, energy issues cause delay in printing, and delivery mechanisms are not properly placed.
- iv. Eighteenth Constitutional Amendment created an opportunity for all federating units to develop mechanisms for achieving goals of education through various means including provision of quality textbooks best suited to the cognitive levels of their students. At the same time this opportunity posed a challenge of maintaining uniformity of standards in the textual materials in the absence of any standardized yardstick to evaluate the textual materials. There is, therefore, a strong need to maintain alignment and similarity among all provinces/areas as far as textbooks as learning tools are concerned including its development, review, approval and delivery.

4.7 Regulatory Regime for Textbooks and Learning Materials

Keeping in view the significance of textbooks, a National Textbook and Learning Materials Policy and Plan of Action 2007 was approved by the Inter-Provincial Education Ministers' Conference with the main objective to improve the quality of education at all levels through better quality textbooks at affordable prices, and other learning materials, for promoting Pakistan as a knowledge-based society.⁵⁷ To achieve this objective, following actions were proposed:

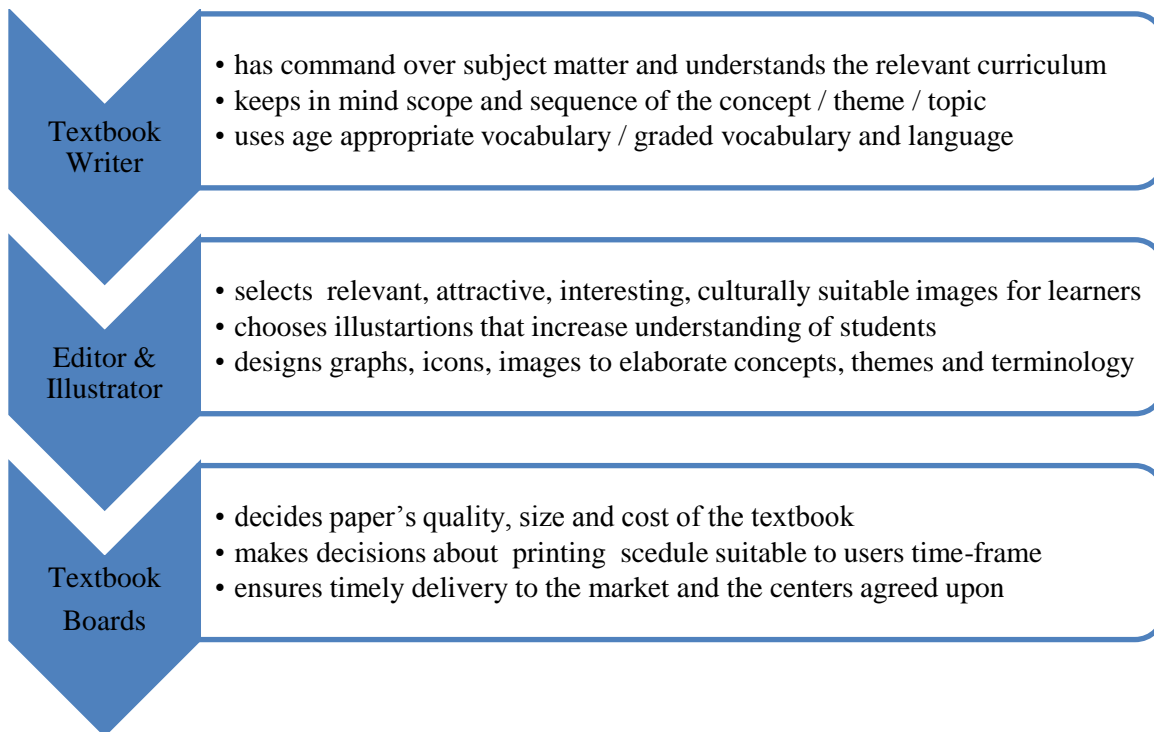
- i. A well-regulated system of competitive publishing of textbooks and learning materials shall be introduced as part of an enhanced public-private partnership in the development of education in Pakistan.
- ii. Textbook Boards shall be transformed into competent facilitating, regulating and monitoring authorities, and shall review and help support the process of approval of textbooks for use in schools in their respective areas of jurisdiction.

National Textbook and Learning Materials Policy and Plan of Action 2007 give all the details of the regulatory regime in practice at present. However, its implementation has raised a number of issues and challenges.

⁵⁷Government of Pakistan, Ministry of Education. (2007). National textbook and learning materials policy and plan of action (Islamabad: Ministry of Education).

4.8 Roles and Responsibilities of Stakeholders in Textbook Development

Since quality textbooks are produced jointly by the inputs of different professionals like writers, reviewers, composers, publishers, editors, illustrators, designers, psychological and assessment experts, therefore, their thinking and working must be aligned with each other to produce quality output. Especially, authors, editors and publishers play a vital role in the process, therefore, the gist of their roles and responsibilities is listed below:



4.9 Stages of Textbook Writing Process

Textbook development by private sector publishers is relatively a new concept in Pakistan. Textbook writing is a process requiring extensive care. National Curriculum for English (2006) for Grades I-XII suggests five stages of textbook development.⁵⁸ Another author has suggested five similar stages.⁵⁹ Since these stages are quite relevant and meaningful for developing a textbook in an orderly manner, each stage is elaborated further for the stakeholders to know and understand the strengths of each stage.

1. **Planning:** At this stage, the writer (s):

- Makes resolution to write for certain subject and grade.
- Studies the relevant curriculum and its requirements.
- Does research on what and how has been written previously.

⁵⁸Government of Pakistan, Ministry of Education.(2006). National Curriculum for English for Grades I-XII. (Islamabad: Curriculum Wing, Ministry of Education).

⁵⁹Durrani, A. (2012). *Principles of textbook development*. (Lahore: Nazeerons Educational Publishers).

- Identifies audience, their socio-economic and cultural contexts.
- Interviews the stakeholders to know about their expectations etc.
- Considers the number of periods allocated in the Scheme of Studies.
- Chalks out time framework for continuous and consistent writing.
- Identifies resources needed and their maximum utilization.
- Finds ways and strategies to overcome issues and challenges in the process.
- Makes mind-maps, flow-charts for logical and successful write-up.

2. Drafting: At this stage, the writer:

- Addresses teachers to give general philosophy of the curriculum
- Gives brief overview of structure of the textbook, units and teaching points.
- States SLOs in the beginning of each chapter / unit to be achieved by the students after completion.
- Presents various advance organizers to gain attention of the audience.
- Starts writing on given topics, themes, concepts and SLOs as per curriculum demand and requirements.
- Identifies examples from real life for elaboration of the concept and theme.
- Devise assessment strategies for checking learning achievement.
- Recommends AV aids, multi-media and other sources required for effective delivery of the unit / chapter.
- Suggests additional readers and supplementary materials for in-depth understanding.
- Advises composers and editors for suitable images / illustrations / graphs etc.

3. Revising: At this stage, the writer:

- Rethinks, reconsiders, replaces and rearranges his/her write-ups.
- Fine-tunes contents, tone, style and vocabulary, phrases and sentences.
- Removes irrelevant texts, images, illustrations and other elements.
- Checks critically cohesion, coherence, progression and unity of thought.
- Rewrites wordy phrases with concise ones and avoid un-necessary examples etc.

4. Editing: At this stage, the editor:

- Checks page, picture, illustration alignment with the content.
- Ensures teaching guide is error-free and explicit.
- Checks word choice, sentence structure, punctuation and spellings etc.
- Ensures consistency in format and basic structure of each unit/chapter.
- Looks at Pre, during and Post Readers/Organizers for their appropriate places.

5. Field Testing: At this stage, the writer:

- Gives the material to selected teachers for teaching in the classroom.
- Ensures that selected teachers represent the general audience / users.
- Obtains feedback from them systematically and objectively.

- Uses feedback for incorporation in the manuscript.
- Gets professional satisfaction for sending the manuscript in the official or formal review process

4.10 Textbooks Standards

All around the world there is increased awareness concerning the importance of high quality textbooks and other learning materials that support teaching and learning process in the classrooms. The school systems in most developed countries consider textbooks as a key part of a variety of tools used for teaching and learning. Most developing countries, on the other hand, consider a textbook to be the sole and primary resource for students as well as for teachers.

The first learning resource that students get in their hands when they enter a school in Pakistan is a textbook. Most of the students' future academic life is focused on textbooks with a high probability of them experiencing a single textbook for each subject as they pass through the grades. This perceived role of a textbook increases its significance and necessitates the introduction and institutionalization of quality-focused processes for the development of textbooks.

Students rely heavily on textbooks as the source of essential of learning and as the basis for appraisal and examination. In the absence of other learning materials the importance of textbooks significantly increases. Textbooks provide students with facts and knowledge, and additionally provide examples of several exercises and assignments for students to practice what they have learnt. Therefore, textbooks must be designed to be student-centred.

Textbooks serve as the primary teaching resource for teachers as well, guiding their teaching process and helping them plan lessons and in setting lesson objectives. Teachers find textbooks particularly useful because they provide order and pacing of instruction and serve as a structured framework for teaching throughout the academic year.

However, textbooks by themselves cannot provide everything required to achieve curriculum objectives. This is particularly true where outcomes-based curricula specify student-centred learning, problem-solving and the development of thinking skills.

4.11 Standards for Textbooks & Supplementary Learning Materials

- Aligned with the curriculum by promoting child-centred pedagogy
- Promote harmony and unity for national cohesion and integrity
- Support inquiry-based learning, critical thinking and problem solving
- Free from gender, ethnic, religious, sectarian, geographical, cultural, occupational biases and respect diversity
- Attractive, interesting and engaging for the learner to pursue further study
- Have authentic texts presented systematically in gradual steps
- Provide a variety of assessment opportunities to evaluate the cognitive, psychomotor and affective abilities
- Facilitates teachers to use a variety of instructional strategies to deliver the content

The standards for textbooks can be organized around six broad categories and commonly agreed-upon indicators for all subjects, as indicated below:

Category 1: Compliance with National Curriculum, Goals and Objectives

- 1 All the Student Learning Outcomes (SLOs), themes and sub-themes are properly addressed through:
 - i) appropriate text and/or illustrations for the age/level
 - ii) end of chapter exercises consistent with assessment practices outlined in the curriculum

Note: Some SLOs may not be part of the text and may be addressed through classroom activities, questions etc. mentioned in the textbook

Category 2: Quality of Content, Language and Logical Organization

- 2 Text is student-centred and meets the needs of the society and interests of the students
- 3 Content is accurate and up-to-date (in both text and illustrations)
- 4 Content is free of grammatical and punctuation errors (text and illustrations)
- 5 Language and content of the text is according to the age and grade level of learners
- 6 Content is supported with examples and applications from real life that are interesting and relevant to students' lives
- 7 Chapter/section previews and summaries to allow learners absorb main ideas/concepts presented
- 8 Relevant learning from previous grade and/or from previous chapters from the same grade is referred to for better understanding

Category 3: Quality and Support for Instruction

- 9 Interactive questions/discussion points are given in the chapter text and end-of chapter exercises to facilitate teachers in engaging students
- 10 A variety of tasks and activities (based on observation and hands-on learning) are given which support inquiry-based learning, critical thinking and problem solving through strategies such as discussion, role play and critical thinking, problem solving and inquiry skills
- 11 Extension activities are included to provide further practice and reinforcement of concepts and skills

Category 4: Physical Presentation

- 12 Present appropriate number of child-friendly and appealing visual elements (title cover, inside pages)
- 13 Include a variety of visual elements such as pictures, tables, figures, maps, information boxes, mind maps and so on (according to the different learning needs of learners, age and grade level)
- 14 Visual and graphical elements have pedagogical relevance and significance
- 15 Glossaries are included at the end of chapters /textbook

Category 5: Assessment: Opportunities for Checking Learning (formal and informal)

- 16 A variety of assessment strategies are included at the end of each chapter/unit

- 17 Assessment strategies assess knowledge, skills and attitudes according to curriculum SLOs to promote better understanding, application of knowledge for problem solving, and higher order thinking skills such as analysis, evaluation, synthesis and creativity

Category 6: Compliance with Culture and Values

- 18 The content (text and illustrations) is inclusive and is free from religious, sectarian, ethnic, regional, cultural, sexual, occupational, and socio-economic biases
- 19 The content (text and illustrations) is free from gender bias and promotes positive images of girls and women
- 20 Texts promote harmony and peaceful co-existence through respect for diversity and tolerance
- 21 Content reflects democratic values, ethics and values of all segments of society and other societies.

Teacher Education and Continuous Professional Development

5.1 Current Trends in Teaching Techniques

There is extensive and well-documented evidence that teaching approaches have an impact on students' learning. This evidence tells us that students learn best when teachers create a supportive learning environment where students feel appreciated and accepted as well as enjoy positive relationships with their peers and teachers. Effective teachers promote positive learning environments that are considerate, inclusive, unbiased, and unified.

Effective teachers encourage students to understand what they are learning in real life, why they are learning it, and how they will be able to apply their new learning. They stimulate the curiosity of their students and encourage them to use what they discover in new contexts. Students learn best when they participate in joint activities with other students. Teachers can facilitate this process by promoting and fostering cooperative learning in the classroom and by encouraging students to work together, supporting each other during the learning process.

Effective teaching practice requires teachers to integrate and build new knowledge on past experiences and information. Teachers need to apply a variety of approaches during the acquisition of new knowledge as students learn best when engaged in a range of tasks and activities to explore new concepts from multiple aspects of teaching methodology.

5.2 Teaching Methodologies

Teachers need to ensure that whatever students learn prepares them to do well in examinations, and successfully face the challenges of a global society and become the agents of social change in society. In order to achieve this objective, teachers need to adopt innovative instructional strategies instead of traditional classroom teaching, which promotes rote learning. These strategies should intellectually engage the students through a variety of learning styles: interactive lecture, discussions, cooperative learning, and inquiry method.

5.2.1 Interactive Lecture

Lectures must be well-planned, problem-oriented and accompanied by the use of appropriate audio-video aids i.e. diagrams, photos, graphics, charts, and simulations etc. these can also be displayed using modern gadgets, for instance, overhead projector, multimedia and smart board if possible and wherever available.

Lectures should be interactive. In order to make a lecture interactive and keep students engaged, the teacher should ask questions from time to time. The students should also be

encouraged to ask questions which may be answered by the teacher or directed to other students inviting them to answer. This strategy is highly effective as students participate equally, practice social skills, and individually demonstrate what they have learned in classroom.

5.2.2 Discussion

Discussion is another important form of group interaction which yields a number of benefits to the students. It increases their knowledge of a topic and provides them with an opportunity to explore a variety of views, which in turn help them to examine their assumptions in the light of different perspectives. It also strengthens their communicative skills and familiarizes them with the art of academic discourse. In planning a discussion, the teacher should review the material and choose a topic, which builds upon the contents that students have recently covered and allows them enough opportunity to come up with innovative ideas. It should not be merely a repetition of the facts they have learned from their books or the teachers' lectures.

All students should be given equal opportunity to participate and contribute in the discussion and by probing questions, such as "Why do you think so?" and "Can you elaborate further?" They should be encouraged to come up with appropriate answers. All discussions should be summarized briefly and precisely, identifying the questions for further inquiry and discussion.

5.2.3 Cooperative learning

Cooperative learning is one of the most important strategies in which students work together in small groups or pairs to maximize their own and each other's learning. Group work should be encouraged in classrooms as these methodologies enhance self-esteem, increase on-task time, develop higher order thinking and reasoning skills and contribute to better understanding of the content. The ability to work in collaboration with others improves communication skills, teamwork and builds students' confidence, which contributes towards a more positive attitude towards learning. It creates opportunities for students to use and master social skills for quality life.

5.2.4 Inquiry method

Inquiry method is a process of framing questions, gathering and analysing information and drawing conclusions from it. There are a number of steps in conducting an inquiry:

1. The teachers choose a topic and encourage the students to inquire question(s) based on the topic, for instance, *what were the factors leading to the Muslim demand for Pakistan?*
2. The students formulate a hypothesis, i.e. provide possible explanation or educated guesses in answer to the question, for instance, *Economic, social, political and cultural suppression of Muslims led to the demand for Pakistan.*
3. Students plan the inquiry. For example:

What is the best place to find information on the topic? What is the best way to gather data?

How to allocate time?

Whom to consult?

4. Students locate information/gather data. For example:
Read books on Pakistani history, society and culture; visit a museum; search the internet. (Depending on the availability of facilities)
5. Students record information as they find it. For example:
Students using books should note the idea and support evidence (Note down in the reference for future use) or students can record the interview of a community member.
6. Teachers help students evaluate their findings and draw conclusions. Students may relate the information gathered, analyse the information and try to find an answer to the query. Teachers support them in formulating their opinions with evidence from their data.
7. Teachers encourage students to communicate their findings in creative ways, written, oral and visual. For example, *as a poster, article, talk show, role play, power point presentation or presentations on charts or even the black board.*
8. Teachers encourage students to suggest possible action based on findings, if required by the theme. Select actions that are doable. Look at possible consequences of each action. Choose the best action. For example, *write a letter to the government to build a monument in the area to commemorate the contribution of the local population for the creation of Pakistan.*
9. Students make an action plan and carry out the action. For example: *write the letter.*
10. Reflect on the successes/challenges of the action.

These strategies, besides promoting academic achievements, would enable students to explore a range of views on a topic, gather information, answer questions, improve their problem-solving and communicative skills learn how to work as a team. It will also foster higher order thinking and improve attitudes towards self-learning and the environment.

5.3 Major Issues and Challenges

There are major issues and challenges in teacher education. These issues and challenges have been highlighted in various education policies and research reports on teacher education reforms in Pakistan. Some of the issues and challenges are:

- (i) The reforms of the teacher education are of the highest priority. There is a consensus among all stakeholders that the quality of teacher education is unsatisfactory. Poorly and semi trained teachers are placed in the system.

- (ii) All teachers should have opportunity for professional development through a program organized on 3 year cycle basis.
- (iii) In service teacher training in Mathematics be provided with conceptual understanding and problem solving techniques.
- (iv) In service teacher education in Science be skill based and process oriented.

5.3.1 Teachers qualification

The Teacher Education in Pakistan is being reformed for quite some time and the models like 10+1 (Primary Teacher Certificate), 12+1 (Certificate in Teaching), and Diploma in Education (10+3 and 12+1.5) have been replaced with Associate Degree in Education (ADE) leading to B.Ed. (Honours), BS.Ed. (12+4) is another programme for pre-service teacher education. In recent past BS Education (12+4) have been introduced and graduates are likely to be available for placement in schools. All the new programmes are step towards enhancing the quality of teachers. All concerned with teachers' pre-service education and their continuous professional development including HEC need to ensure that their graduates have knowledge, skills and dispositions as per National Professional Standard for Teachers , 2009. This is a very serious concern of all those who are looking for providing quality education to the youth of this country enabling them to efficiently take over the responsibility of development of the country in the competitive global environment. Following are therefore suggested minimum qualification for various tiers of education:

S.No	Level	Qualification
1	Primary/Elementary Schools	BA/B.Sc/B.Ed./ADE
2	Secondary Schools	MA/M.Sc/BS/B.Ed.
3	Higher Secondary Schools	MA/M.Sc/B.Ed.

A separate computer teacher with degree ITC/BSCS and B.Ed. be placed in schools (Grade VI-XII).

5.4 Continuous Professional Development

Continuous professional development in its broader sense may include the development of competencies and skills of the teachers as to meet the new trends and innovations in teacher education. There is always a need of professional development of teacher as the curricula are changed whenever new concepts (content) are added and innovations are brought in teacher education. Teacher needs to be re-orientated in content knowledge and pedagogy periodically.

5.5 Standards for Teachers

Measuring teacher quality is a difficult task because a teacher requires a wide range of competencies, attitudes and skills, not all of which can be tangibly observed.

The following section lists the national professional standards for teachers.

Standard 1: Subject Matter Knowledge

Teachers understand the central concepts, tools of inquiry, structures of the discipline, especially as they relate to the National Curriculum. The teacher can design and implement appropriate lesson plans to create learning experiences making the subject matter accessible and meaningful to all students according to various development stages.

Knowledge and Understanding	<p>Teachers know and understand:</p> <ul style="list-style-type: none"> • The national curriculum framework • In-depth knowledge of the domain, basic concepts, theories, history, structure and process of acquiring knowledge of the subject they are going to teach • The need to keep abreast of new ideas, new emerging concepts, theories, results of research and latest trends at national and international levels • The relationship of the subject to other disciplines and its usability in practical life
Dispositions	<p>Teachers value and are committed to:</p> <ul style="list-style-type: none"> • Applying multiple ways to impart knowledge to learners • Making knowledge applicable to real world situations • Developing the diverse talents of all students and helping them develop self-confidence and subject matter competence • Encouraging students to develop a positive attitude towards, and an interest in, the subject area • The belief that all students can learn and achieve success
Performance and Skills	<p>Teachers demonstrate their knowledge and understanding through:</p> <ul style="list-style-type: none"> • Effectively explaining the content in multiple perspectives and relating all required structural components of the discipline • Use of appropriate tools of inquiry according to the nature of the subject and content, considering students' prior knowledge and learning preferences • Giving examples of application of the content from practical life

Standard 2: Human Growth and Development

Teachers understand how students (both children and adults) develop and learn in a variety of school, family and community contexts and provide opportunities that support their intellectual, social, emotional and physical development.

Knowledge and Understanding	<p>Teachers know and understand:</p> <ul style="list-style-type: none"> • How students construct knowledge, acquire skills and develop habits of mind as mediated by their developmental stage • How student learning is influenced by individual experiences, talent and prior learning, as well as language, culture, family, community, and national values
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	<ul style="list-style-type: none"> • The needs of all students based on their learning styles, disabilities and special needs, cultural and socio-emotional differences, special medical, physical or emotional challenges, and are able to use distinctive teaching approaches to engage and support them. • The nature and significance of emotional intelligence for making students productive individuals • Individual differences among students • Motivational strategies to support students achieve and excel • The processes and skills that help students to develop knowledge, skills and dispositions of reflective thinking and enable students to solve problems in and out of the classroom
Dispositions	<p>Teachers value and are committed to:</p> <ul style="list-style-type: none"> • The belief that all students (both children and adolescents) bring talents and strengths to learning • Appreciating the diverse talents/ multiple learning styles of all students and helping them to develop self-confidence and subject matter learning • Treating all students equitably • The belief that all children and adolescents can learn and achieve success
Performance and Skills	<p>Teachers engage in activities to:</p> <ul style="list-style-type: none"> • Promote critical thinking, problem-solving and decision-making skills by engaging students in formulating and testing hypotheses according to the methods of inquiry and standards of evidence within the discipline • Apply learning theories to accommodate differences in student intelligence, perception, learning styles and achievement levels • Foster cooperation and collaboration for collective problem solving • Foster emotional intelligence skills among students including self-efficacy, empathy, cooperation, resilience, self-awareness

Standard 3: Knowledge of Islamic Ethical Values and Life Skills

Teachers understand the Islamic ethical values and practices in the light of Quran and Sunnah and other religious contexts, and the implications of these values for bringing national and global peace, unity and social adjustment.

Knowledge and Understanding	<p>Teachers know and understand:</p> <ul style="list-style-type: none"> • The Islamic code of conduct (beliefs, prayers and ethics) in light of Quran and Sunnah (i.e. <i>Maarroof</i>-Good and <i>Munkir</i>- Evil, equality, justice, brotherhood, balance, tolerance and peace) • The universal ethical values that are globally accepted and are consistent with the Islamic code of conduct • The present need of national/ global peace, and the factors affecting
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	<p>peace and resulting in decline of the values and ethics</p> <ul style="list-style-type: none"> • The negative effect of prejudice and discrimination on the basis of social class, gender, race and language on the moral development of students and society • How Islamic and universal ethical values are incorporated in learners' beliefs and practices to bring peace • Essential principles of Islamic values in the textbooks
Dispositions	<p>Teachers are committed to:</p> <ul style="list-style-type: none"> • Bringing awareness among learners that the Quran and Sunnah are the core sources for knowledge of Islamic values • Inculcating respect and appreciation for individual and cultural/religious/personal differences amongst learners • Encourage tolerance and celebration of diversity amongst students • Emphasize dialogue as a primary means to conflict resolution
Performance and Skills	<p>Teachers engage in activities to:</p> <ul style="list-style-type: none"> • Create a vibrant learning community in which individuals and their opinions are respected • Practice Islamic code of conduct through their own behaviours and guiding learners to value and practice the ethical values • Provide guidelines about ethical values to clarify their use in internal and external discourses • Practice Islamic teachings in schools to prevent misunderstandings that can lead to inaccurate characterization of Islam and other faiths • Facilitate a better understanding of issues regarding human rights, social class, gender, race, ethnicity, language, age and special needs using the knowledge of Islam • Create a safe and secure learning environment promoting free inquiry.

Standard 4: Instructional Planning and Strategies

Teachers understand instructional planning, design and implement well-structured long-term and short-term plans based upon knowledge of subject matter, students, community, curriculum goals, and employ a variety of developmentally appropriate strategies in order to promote critical thinking, problem solving and performance skills of all learners.

Knowledge and Understanding	<p>Teachers know and understand:</p> <ul style="list-style-type: none"> • The aims, goals and objectives of education as well as of curriculum for specific subject and their importance in instructional planning • Principles of acquisition of relevant subject knowledge and skills at different stages of development. • Availability of appropriate resources and materials for instructional planning including the use of indigenous, low cost learning material and instructional technology to promote students' attention and thinking • Techniques to plan, develop, implement and modify instructional
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	<p>strategies based on students' individual needs, development progress, learning styles, social contexts, and prior knowledge to help all students learn</p> <ul style="list-style-type: none"> • A variety of instructional approaches and the use of various technologies, to promote thinking and understanding • The effect of out of school activities including homework and involvement of parents • General methods of teaching and classroom management • Special methods of teaching different disciplines
Dispositions	<p>Teachers value and are committed to:</p> <ul style="list-style-type: none"> • Attaining goals, objectives/student learning outcomes of the curriculum • The development of students' critical thinking, independent problem-solving and performance capabilities • Practising pedagogy which encourages collaboration, team work and cooperation • Promoting a love of learning and students' intellectual curiosity
Performance and Skills	<p>Teachers engage in activities to:</p> <ul style="list-style-type: none"> • Plan, design and implement instruction appropriate to students' stage of development, variety of learning styles, strengths/needs and the school and community culture • Plan and assign homework and out of the class activities to extend and consolidate students learning • Plan, design and implement strategies to create learning experiences that make subject matter meaningful for students, encourage students to pursue their interests and inquiries • Plan and develop well-structured effective lessons by organising instructional activities and materials, incorporating a wide range of community and technology resources, to promote achievement of lesson objectives • Use formal and informal methods of assessment, information about students, pedagogical knowledge and research as sources for active reflection, evaluation and review of practices. • Create interdisciplinary learning experiences that allow students to integrate knowledge, skills and methods of inquiry from across several subject areas • Reflect systematically on the effectiveness of lessons and approaches to teaching

Standard 5: Assessment

Teachers have knowledge, understanding, and skills to assess students learning using multiple assessment strategies and interpret results to promote and foster the continuous progress of students (diagnostic and formative) and to evaluate students achievement (summative).

<p>Knowledge and Understanding</p>	<p>Teachers know and understand:</p> <ul style="list-style-type: none"> • Different types of assessment strategies for formative and summative assessment (for example, traditional standardised and performance-based tests, observation systems and assessment of student work) for evaluating how students learn, what they know and are able to do, and what kinds of experiences will support their further growth and development • The use of assessment results to evaluate and improve teaching and learning • Assessment-related issues, such as validity, reliability, bias and scoring concerns
<p>Dispositions</p>	<p>Teachers value and are committed to:</p> <ul style="list-style-type: none"> • The belief that students learning outcomes are the basis for growth and the deficiencies are opportunities for learning • Fair and objective assessment and reporting to students and families • Facilitating to ensure that students see assessment as a challenge and not as a frightening experience
<p>Performance and Skills</p>	<p>Teachers engage in activities to:</p> <ul style="list-style-type: none"> • Develop and use teacher made tests for continuous internal evaluation of student performance and skills at different stages of the academic programme • Analyse student performance using multiple sources of data, and to modify future plans and instructional techniques that promote desired student learning outcomes • Provide students constructive feedback on their learning and encourage them to respond to the feedback, use data and self-assessment strategies to monitor their progress towards achieving personal goals • Accurately document and report assessment data and on-going student achievement to parents and professional staff • Enhance their knowledge of learners and evaluate students' progress and performance using a variety of formal and informal assessment techniques to modify teaching and learning strategies • Develop and use objective assessment tools to measure student progress • Promote opportunities for students to engage in self-assessment activities

Standard 6: Learning Environment

Teachers create a supportive, safe and respectful learning environment that encourages positive social interaction, active engagement in learning and self-motivation in learners.

Knowledge and Understanding	Teachers know and understand: <ul style="list-style-type: none">• How learning takes place in classrooms• The principles and strategies of effective classroom management that promote positive relationships, cooperation and purposeful learning activities in the classroom• How the classroom environment influences learning and promotes positive behaviour for all students• How participation supports student commitment to learning• That corporal punishment is detrimental to the development of a child and that it is a crime
Dispositions	Teachers value and are committed to: <ul style="list-style-type: none">• The role of students in promoting each other's learning (peer learning) and recognising the importance of peer relationships• Taking responsibility for establishing a positive and engaging environment in the classroom and in the school• Use democratic values in the classroom such as allowing students to express different opinions and raise questions, providing equal opportunity for participation to all students• Implementing discipline strategies that do not negatively affect the personality of the students
Performance and Skills	Teachers engage in activities to: <ul style="list-style-type: none">• Develop and share classroom discipline plan/norms with the students• Maintain a learning community in which students assume responsibility for themselves and each other, participate in decision-making and work both collaboratively and independently• Create a cooperative classroom environment for all students, by practising effective listening and group facilitation skills• Create a positive classroom culture which is socially, emotionally and physically safe• Establish and maintain appropriate standards of competitive behaviour to create a supportive environment for students at different levels of learning• Use instructional time effectively• Facilitate and monitor independent and group work that allows for full and varied participation of all individual students.• Implementing discipline strategies that do not negatively affect the personality of the students

Standard 7: Effective Communication and Proficient Use of Information and Communication Technologies (ICT) for Teaching and Learning Process

Teachers use knowledge of effective verbal, nonverbal and written communication techniques and tools of information processing to foster the use of inquiry, collaboration and supportive interactions with students and parents. Teachers are able to use instructional and information and communication technologies for curriculum enrichment, instruction, assessment and evaluation of learning outcomes.

<p>Knowledge and Understanding</p>	<p>Teachers know and understand:</p> <ul style="list-style-type: none"> • The importance of verbal, nonverbal and written communication in the teaching and learning process • Functional English related to their subject content • Operating and integrating technologies in classroom and laboratory activities • Use of suitable software for word processing, filing, research, data storage and presentation of information • Use of computers and mobile devices as instructional, research, planning and evaluation tools • How to use available diverse technical tools (art work, videos, cameras, phones, computers, etc.) in their classrooms
<p>Dispositions</p>	<p>Teachers value and are committed to:</p> <ul style="list-style-type: none"> • Appreciating the cultural dimension of communication, responding appropriately and seeking to foster culturally sensitive communication by and among all students in the class • Being an active and responsive listener • Fostering diversity of opinions among students and celebrating it in the classroom • Using all educational and informational technologies to enhance different aspect of teaching and learning
<p>Performance and Skills</p>	<p>Teachers engage in activities to:</p> <ul style="list-style-type: none"> • Communicate clearly in the local language/ Urdu/English using appropriate oral and written expressions • Develop reflective reading skills of learners in the local language/ Urdu/ English • Model effective communication strategies and questioning techniques in conveying ideas and stimulating critical thinking • Communicate in a variety of ways that demonstrate a sensitivity to cultural, linguistic, gender and social differences • Foster accurate reporting and sharing of facts, opinions and beliefs • Incorporate up-to-date information from diverse sources (print and electronic media) in lesson plans to supplement textbooks • Use ICT including computers and mobile devices where available for planning, instruction, and assessment practices • Develop students’ portfolios, test items, assignments and assessment through computers

Standard-8: Collaboration and Partnerships

Teachers build relationships with parents, guardians, families and professional organisations in the community to support student learning.

<p>Knowledge and Understanding</p>	<p>Teachers know and understand:</p> <ul style="list-style-type: none"> • The importance of effective school-home relations that contribute to high-quality teaching and learning • The role of the school within the community and importance of community partnerships for student learning and development • Different approaches to collaborate effectively with parents, professionals and community
<p>Dispositions</p>	<p>Teachers value and are committed to:</p> <ul style="list-style-type: none"> • Recognising the role of parents, guardians and other family members, notables and elders of the community as ‘teachers’ • Being concerned about all aspects of the student’s well-being and working with parents/ families to provide opportunities for students’ success • Being willing to work with parents/ families and other professionals to improve the overall learning environment for students • Facilitating the intellectual, physical and moral/social development of students through cooperative learning and interaction with community institutions
<p>Performance and Skills</p>	<p>Teachers engage in activities to:</p> <ul style="list-style-type: none"> • Identify and utilise family and community resources to foster student learning and provide opportunities for parents to share skills and talents that enrich learning experiences • Establish respectful and productive relationships and develop cooperative partnerships with diverse families, educators and others in the community in support of student learning and wellbeing • Institutionalise parent/ family involvement practices through Parent Teacher Councils, School Management Committees, School Councils, Parent Teacher School Management Committees that support meaningful communication to strengthen the teaching and learning environment of the school • Cultivate knowledge of the surrounding community to enrich lessons and projects of study • Link schools with business, industry and community agencies and civil society representatives working in areas of health, environment, education etc.

Standard-9: Continuous Professional Development and Code of Conduct

Teachers participate as active, responsible members of the professional community, engage in reflective practices, pursuing opportunities to grow professionally and establish collegial relationships to enhance the teaching and learning process. Teachers subscribe to a professional code of conduct.

Knowledge Understanding	Teachers know and understand: <ul style="list-style-type: none">• The demands of a professional code of conduct• How educational research and other methods of inquiry can be used as a means for continuous learning, self-assessment and development• How to be inventive and innovative about teaching practice• How to develop and maintain their own professional portfolio
Dispositions	Teachers value and are committed to: <ul style="list-style-type: none">• Improving their subject content knowledge and pedagogical skills through continuous professional development• Refining practices that address the needs of all students and the school/ community• Professional reflection, assessment and learning as an on-going process• Collaborating with colleagues on professional aspects• Sharing successful professional experiences with colleagues• Demonstrating professional ethics
Performance and Skills	Teachers engage in activities to: <ul style="list-style-type: none">• Use reflective practice and professional development standards to set goals for their professional development plans• Apply learning from Continuous Professional Development activities to improve their teaching practice• Learn through professional education organisations and through print and electronic media• Make the entire school a productive learning climate through participation in collegial activities• Seek advice of others and draw on action research to improve teaching practice• Uphold ethical behaviours in teaching, learning and assessment.

Standard-10: Teaching of English as Second/Foreign Language (ESL/EFL)

Teachers understand the pedagogy of English as Second/Foreign language and effectively communicate in English.

Knowledge & Understanding	Teachers know and understand: <ul style="list-style-type: none">• Status of English Language as a medium of instruction in Pakistan• Aims of teaching English as a subject at the national level• Aims and methods of using English as medium of instruction in Pakistan• Strategies to enhance “learning in English,” and “ learning of English as a language”• Apply appropriate learning theories, pedagogy and teaching methods to facilitate the learning and use of English• Specific difficulties in teaching and learning English in the Pakistani context
Dispositions	Teachers value and are committed to: <ul style="list-style-type: none">• Lessening biases and anxiety in students for learning in English• Addressing students’ specific needs related to ESL/EFL
Performance & Skills	Teachers engage in activities to: <ul style="list-style-type: none">• Use of comprehensible English language along with supportive use of Urdu (national language) and local languages for effective teaching and learning purposes• Identify, analyse and address learning difficulties in English language• Gradually enable students to communicate in English utilising all four skills: speaking, listening, reading and writing• Provide classroom opportunities for choral and individual reading, descriptive and discursive writing and spoken English

Learning Environment in Schools

6.1 Learning Environment and its Components

Learning environment is vital to effective teaching and learning and serves as a foundation of entire system of education. Conducive classroom environment is an important precondition for effective teaching-learning process. It provides students an opportunity to think and behave in a positive manner and helps to enhance, promote and encourage students' learning in all academic settings⁶⁰.

6.1.1 Physical component

Two main components of learning environment are; 1) physical component, and 2) psychological component. Physical component comprises of all physical aspects such as classrooms, teaching resources and learning facilities, both inside and outside the classroom. It refers to different dimensions i.e., size of the room, lighting arrangements, ventilation, temperature, condition of classroom floor, whether it is carpeted or just of concrete, furniture and fixtures, boards (black, white, green) etc. Physical environment can affect students' comfort and also their ability to learn. Students who feel comfortable in the classroom are likely to assimilate more information as compared to those who feel uncomfortable or sit an environment which does not provide any comfort. Besides, the physical atmosphere can also affect the morale of the learners. Unfavourable classroom environment can discourage the learners and they become less willing to learn.⁶¹

The term “educational facilities” refers to all the physical properties of a school, consisting of the playgrounds, buildings, and the various facilities within the school grounds and inside the school buildings.⁶² Physical classroom environment refers to the physical room in which teacher and learners are the main element including its spatial elements i.e., floor, windows, walls as well as other classroom equipment i.e., desks, chairs, rugs, chalkboards, tack boards, easels, counters and computer equipment but not limited to these things.⁶³ There are several factors of classroom physical environment i.e. visual factor, acoustic factor, thermal factor, spatial factor and time factor. Visual factor refers to the quality of lighting in different

⁶⁰Fraser, B., & Pickett, L. (2010). *Creating and assessing positive classroom learning environments. Childhood Education..* Retrieved from <http://www.highbeam.com>

⁶¹ Fisher, E. S. (2008). *The effect of the physical classroom environment on literacy outcomes: How 3rd class teachers use the physical classroom to implement a balanced literacy Curriculum.* (A Thesis presented to the Faculty of the Graduate School University of Missouri)

⁶²Department of Education. (2010). *Education facilities manual* (Pasig City: Philippines)

⁶³Fisher, E. S. (2008). *The effect of the physical classroom environment on literacy outcomes: How 3rd class teachers use the physical classroom to implement a balanced literacy Curriculum.* (A Thesis presented to the Faculty of the Graduate School University of Missouri)

parts of the classroom. It is determined by the level of natural and artificial light available in the classroom. It also refers to the way by which the classroom environment is arranged i.e. visually interesting, creating a favourable atmosphere and any unwanted disruptions e.g. windows overlooking playgrounds etc. Acoustic factor is an important factor as we mostly depend upon verbal communication in our classroom. Noise level mainly depends upon school design, classroom organization and teaching methodologies applied during a lesson.⁶⁴

6.1.2 Psychological component

Psychological component is related to the interaction that occurs among students, students with teachers, and students with the environment. Both of these components, physical and psychological, create and shape the learning environment and affect the learning process.⁶⁵ Beyond the physical arrangements of a classroom, a psychological environment is also created, based on the interaction of key players in the classroom, namely students and teachers. Studies have been particularly concentrated on student class participation rates, teacher support, and communication of learning goals. There is a strong, positive relationship between students' level of motivation and engagement and their perceptions of the classroom environment as being socially supportive.⁶⁶

Knowledge about the factors that shape students' perceptions of their learning environment, how teachers' actions appear to students, and how changes made to the learning environment may stimulate and encourage learning is of utmost importance to teachers. Research studies have revealed that the classroom environment plays a vital role in teaching learning process. It can effect the performance of both the teachers and the students. There is a relationship between environment constructs and multiple outcomes, including learning, engagement, motivation, social relationships, and group dynamics. Researchers agree that flexible learning environments provide the best situations for learners to learn. That is, students learn best in environments where learning is personalized to meet their interests, learning needs and aspirations.⁶⁷

6.1.3 Missing facilities in schools

A significant number of schools across the provinces and regions are functioning without adequate basic amenities like drinking water, toilet, electricity, boundary wall, classrooms and safe buildings. Non-availability of these facilities affects the retention rate as well as quality of education. During 2014-15, the drinking water facility was not available in one-third of primary schools across the country. Adequate sanitation facilities in schools are essential for retention of students in schools especially for girls. About one-third primary schools were without adequate sanitation facilities in the country in 2014-15. The provision of boundary wall is considered

⁶⁴Basit, A. (2005). Classroom management techniques at secondary level and developing a model for urban schools for district Peshawar. (M.Phil. Thesis, Faculty of Education, Allama Iqbal Open University Islamabad).

⁶⁵Lippman, P. C. (2010). Can the physical environment have an impact on the learning environment?

⁶⁶Patrick, H., Ryan, A. M., Kaplan, A. (2007). Early adolescents' perceptions of the classroom social environment, motivational beliefs, and engagement. *Journal of Educational Psychology*, 99 (1), 83 –98.

⁶⁷ Savage, T. V. (1999). *Teaching self-control through management and discipline*; Boston: Allyn and Bacon; Stewart, S. C. and Evans, W. H. (1997). *Setting the stage for success: Assessing the instructional environment*. *Preventing School Failure*, 41(2),

as one of the most important facilities especially for girls in view of prevailing law and order situation in the country. More than half primary schools were without boundary wall in 2014-16.⁶⁸

Poor and inadequate facilities affect the overall performance of the institutions. Sufficient facilities promote academic achievement and ensure to strengthen the overall institutional performance. While unattractive and old school buildings; cracked classroom walls and floors; lack of toilets; lack of desks and benches; lack of transport facility; lack of proper security system; lack of drinking water; lack of power supply; lack of playgrounds; lack of teaching staff; lack of sufficient classrooms; overcrowded classrooms; lack of educational technology; lack of first aids facility etc. negatively affect academic achievement of the institutions as well as retention rate.⁶⁹

The quality of education is dependent upon inputs and process. Inputs indicate the allocation of resources for education sector which include human, financial and physical resources, teaching and learning materials, government policies, rules and regulations, as well as other supporting means. If the quality of inputs is good then the quality of output is also considered to be good.

The issue of missing facilities is getting importance and it emerges in the national discourse on education on a regular basis. All government documents related to education statistics report on missing facilities in public schools. The provincial and area governments are cognizant about the issue of missing facilities in schools. They allocate a significant portion of their annual budget for provision of these facilities. For example, in 2016-17 budget, the government of Punjab has allocated an amount of Rs. 50 billion for school strengthening programme which includes strengthening of schools in dangerous and dilapidated buildings, construction of 36,000 new classrooms in primary schools and provision of missing facilities.⁷⁰ Similarly the other provincial governments have also given high priority for provision of missing facilities by allocation a significant amount for schools improvement. However, improvement of school program is a continuous process which needs a lot of resources.

6.2 School Infrastructure Guidelines

As already pointed out, the school infrastructure plays an important and positive role in making the learning joyful. Studies have been conducted on the school infrastructure and guidelines have been developed according to the local conditions, availability of resources and norms of the society. The school infrastructure guidelines of the countries like Philippine, South Africa and India have been reviewed. Considering our local conditions and funding resources, following guidelines are of worth consideration by the provinces and areas:-

⁶⁸Government of Pakistan.(2016). Academy of Educational Planning and Management, Pakistan education statistics 2014-15. (Islamabad: Academy of Educational Planning and Management)

⁶⁹Suleman, Q. & Hussain, I. (2014). Effects of classroom physical environment on the academic achievement scores of secondary school students in Kohat Division, Pakistan, *International Journal of Learning & Development*, 4(1), 71-82

⁷⁰Daily News Paper “Dawn” June 14, 2016, Lahore

6.2.1 School site

The site for the school should be suitable because it serves educational activities and provides a favourable learning environment. The following points need serious consolidation while selecting the site for school buildings:

- A school site should be easily accessible to a large number of students. It should have an adequate piece of land for new school buildings and its play area and it should have also provision for the future expansion requirements.
- It should have well drained level, not prone to flooding. Site of school should have good soil conditions to allow for strong foundations and big structure.
- Site should be away from hazards like heavy traffic roads, rivers, ponds, railway station and track.
- The site should preferably be at a quiet place away from places generating noise and pollution, such as cinemas, factories and shopping centres.
- The location of the school should ensure easy accessibility to roads, sewage lines and other basic services.
- The site or area for a new school should be large enough to provide space for playground, indoor games and morning assembly
- The school site and its immediate vicinity shall be free from any condition endangering health, safety and moral growth of students.

6.2.2 Design and layout of school buildings

Learning is at the heart of schooling, and anything that facilitates learning should be at the core of school design.⁷¹ The size and shape of the site, the prevailing climatic, economic and cultural conditions are important factors which have an effect on the design and layout of a school. These factors are often not taken into account at the time of planning architect, resulting in inappropriately designed school buildings. The faulty designed buildings are unattractive to the children and not compatible to support a modern education system. School buildings are significant to the teaching and learning process that have a positive impact on students' behaviour and achievements; therefore, when designing a school, the following factors should be kept in view:

- Buildings should be arranged in the most economical way taking into account orientation, the slope of the site and the prevailing climate;

⁷¹UNICEF. (2009). Manual for child friendly schools. Retrieved from http://www.unicef.org/publications/files/Child_Friendly_Schools_Manual_EN_040809.pdf

- Layouts should incorporate courtyards and other external spaces for recreation, teaching and learning;
- School building should strictly follow technical standards/ specifications developed by each province/ region;
- Environmental factors such as air temperature, air humidity, air movement and the temperature of surrounding surface should be kept in view at the time of designing school building;
- Design of school facilities should provide unhindered access, stay and learning of students with special needs.

6.2.3 Classrooms facilities

The classroom is a contained unit of learning space. To be effective, it must be designed in such a way that spaces and facilities reflect the educational processes and activities. Each classroom shall be suitably structured and decorated to make it interesting and conducive to teaching and learning. It is worth mentioning that there is no 'standard' size of classroom and it varies from country to country, depending on socio-economic condition of the area. The classroom size and designing can help to facilitate and improve the teaching and learning process; therefore, when deciding on the size of the standard classroom, the following factors should be taken into account:

- The classroom should allow sufficient space for the maximum number of students that the teacher can effectively teach in comfort.
- In small rural communities it should allow adequate space for multi-grade teaching.
- It should allow and encourage innovative teaching methods.
- It should allow space for changes in teaching methods during its lifetime.
- The average space for learner varies from country to country. In South Africa the average space per learner for primary is 1.2m^2 and secondary schools it is 1.5m^2 . In case of India the average space per student at primary level is 1.11m^2 and for secondary school students it is 1.26m^2 .
- The provinces/regions have to determine the average class size and average space per pupil on the basis of student teacher ratio and student class room ratio.
- Classrooms need proper ventilation because children breathe a greater volume of air in proportion to their body weight than adults do, therefore, arrangement should be made for proper ventilation of schools and classrooms.

- Most of public schools do not have chairs and tables (benches and desks etc.) for students, and children have to sit on the ground in summer and winter. Therefore; furniture for students should be provided to all schools and it should be durable, comfortable, attractive, and according to the size and needs of children.
- Classroom should take into account changing weather conditions. Proper arrangement for heating during winter and cooling arrangement during summer should be made.
- Layout of classrooms seating arrangement may facilitate better teacher-to-student and student-to-student communications.
- Class seating arrangements may be made in such a way that all students have clear view of the teacher and he can maintain eye contact with all students and also check to see that they are being attentive.
- The chalk board may be placed on the front wall of the classroom i.e. the wall facing the students, so that students can see it without any strain or difficulty.
- The design and layout of classroom may be improved to facilitate teacher in the use of innovative and inclusive approaches to teaching, such as group work and practical activities

6.2.4 Learning environment

a) Visual comfort

The following factors need serious consideration for planning and designing of classrooms in case of non-availability of electricity facility especially in rural schools:

- Bilateral fenestration (or providing windows on both sides of each classroom) to secure daylight from both left and right sides of the classroom;
- making classroom windows wide, and high-topped to ensure maximum daylight illumination;
- using proper combination and intensity of colours in classrooms and on facilities to provide proper brightness-contrast;
- providing proper shading to avoid glare inside the classrooms; and
- size of classroom as to distance of blackboard up to the low row seat.

b) Acoustical comfort

A number of research studies have identified the relationship between good acoustic and academic performance. A higher achievement of students is associated with schools that have less noise therefore; acoustic comfort in school may be achieved by taking into account the following aspects:

- locating the school in a quiet neighbourhood;
- locating the school building at a reasonable distance from the street;
- proper zoning of the school site to separate noisy areas from those where silence is required; and
- arranging the seats in such a way that no pupil is more than seven meters away from the teacher standing in front of the room.

c) Sanitation facilities

All children need a safe and hygienic learning environment as lack of these facilities has negative impact on students learning. Findings of various research studies indicate that the girl's enrolment and retention increases when there are clean, safe, separate and private toilet facilities in schools. Non-functional toilets are also one of the main factors for dropout; especially for girls. Public schools, therefore, should be provided with adequate sanitation facilities which promote health and hygiene standards. Each school should have separate toilet facilities for students and teaching staff.

d) Drinking water

Potable water supply facilities are a basic necessity for the health and life especially of small children. The provision of water supply facility is sometime overlooked in education programmes. Therefore, portable water supply shall be available in each school.

e) Electricity

Classroom lighting plays a crucial role in student performance, students cannot study unless lighting is adequate, and therefore, electricity should be provided to all public schools. Availability of electricity can extend the number of hours a classroom can be used. Similarly, in summer zones of Pakistan ceiling fans produce a more comfortable environment for learning and availability of electricity enables the schools to operate equipment that can help in teaching.

f) School health, safety and security

Health screening of students should be institutionalized and First Aid facilities provided in each school. School management should ensure that healthy food and eatables and space for prayers are provided at the tuck shops or canteens etc.

All public schools should have boundary wall. In view of prevailing law and order situation proper security arrangements should be ensured in all schools.

g) Playground

The allocation of external space for playgrounds which are needed for physical education activities may be determined by each region and province according to minimum standards. The playground shall be located in safe and sanitary area of the school site. It shall be ploughed, harrowed, level, and cleared of broken glass, nails, wires, stones, and other objects which may hurt the children while they are playing. Facilities may be available for indoor games.

h) Library

Library is a crucial element of school learning facilities; therefore, each school may have a school library for the use of students, and teachers. It shall be located in a quiet and pleasant surrounding and accessible to all users. It may have internet connectivity to explore available materials on internet.

i) Science laboratories

The schools especially secondary and higher secondary may have a properly equipped science laboratory with equipment, apparatus, chemicals and required instruments for science subjects.

j) Computer laboratories

Computer lab may be available with at least 20 computers with internet connectivity in each secondary and higher secondary school.

Medium of Instruction and Teaching of Languages

7.1 Language and Learning

The process of education in schools takes place between a source or transmitter of information or knowledge and a learner. This source may be a teacher, a textbook, or an online course. In all forms of formal and non-formal education, language is the key facilitator and enabler for transfer or acquisition of information and knowledge. An important feature which gives human beings superiority over other animals is their refined and productive form of communication which is called language. Language has played catalytic role in the evolution of human civilizations and their advancements in science and technology through documentation, preservation, and transfer of information, knowledge, opinions, and ideas to other people in different parts of the world, and also to their next generations.

Languages shaped from oral utterances of symbols and meanings to written words, and led to emergence of literacy skills. Languages are usually linked with the socio-cultural context of their speakers and tend to convey or represent values, traditions, culture, and philosophy of the society where these are spoken. Historically, and in today's world, bulk of the information, data, knowledge, and ideas are available in written form. Therefore, language and reading skills are preconditions for accessing or communicating such knowledge. Language also serves as a binding force for integration of individuals in a community (Annexure-I).

7.2 Manifestations of Medium of Instruction

Medium of instruction is the language which is used for delivering curricula to the students in the schools. Medium of instruction may have numerous forms and modes. Three important and formal dimensions of medium of instruction are listed below:

- **Teaching learning resources (TLRs):** All textbooks and learning materials for the students are developed, published, and disseminated in the language that has been officially declared as medium of instruction.
- **Delivery of curricula in the classroom:** Teachers are supposed to deliver curricula or syllabus or lesson plans in the classrooms in the language which has been selected as medium of instruction. All questions to the students are to be put by the teachers using language of official medium of instruction and students are also expected to respond in the same language. However, sometimes, where the communities and parents have their own limitations, are not educated enough and speak and understand the language which is usually referred to as the mother tongue, the teacher delivers the curriculum even in the mother tongue, besides the official

medium of instruction, to convey the exact intentions of the curriculum and make the learner understand the concepts easily.

- **Assessment and examinations:** For classroom assessments, internal and external examinations, students are assessed in the same language in which the instruction has been given *i.e.* the notified official medium of instruction. This means, students will have to do homework and attempt papers in the examinations in the language which has been declared as medium of instruction no matter in which language the instruction was given in the classroom.
- **Low achievement levels:** Children enrolled in public sector schools, particularly in rural areas, predominantly belong to low income families. In majority of the cases, their parents are either illiterate or less educated having proficiency in local language only. Children from such families face difficulty in understanding content in a foreign or new language. They exhaust their time and energies in memorizing vocabulary and spellings of a foreign language. A number of national and international studies have identified these negative effects in teaching-learning process.
- **Higher drop-out rate:** A number of studies have pointed out that one of the reasons for higher drop out of children belonging to disadvantaged groups is that schools offer education in a language which is not their mother tongue.
- **Problems faced by teachers:** In primary school normally most of the teachers have secondary school education with one year professional training *i.e.* Primary Teaching Certificate (PTC). It is a general perception that the teachers with this qualification are not competent enough to teach Science and Mathematics in English language. Problems are being faced by teachers in schools where English has been introduced as medium of instruction without keeping in view the local context and capacity of teachers, especially in rural areas.

The manifestations of medium of instruction in the form of textbooks and use of same language in the examinations are unavoidable. However, informally, teachers in some schools of Pakistan use Urdu or local languages for explanation and elaboration of curriculum concepts in the classrooms where the contents are to be formally delivered in a foreign language.

7.3 National and Provincial Languages: Importance and Commonalities

Urdu and provincial languages of Pakistan are pivotal for maintaining national identity and integration of diverse linguistic and cultural groups in the country. The following features of Urdu and provincial languages are worth consideration.

7.3.1. Urdu as the national language

The Constitution of Pakistan declares Urdu as the national language of the country. The relevant Article of the Constitution is reproduced below:

“National Language 251. (1) The National language of Pakistan is Urdu, and arrangements shall be made for its being used for official and other purposes within fifteen years from the commencing day.

(2) Subject to clause (1), the English language may be used for official purposes until arrangements are made for its replacement by Urdu.

(3) Without prejudice to the status of the National language, a Provincial Assembly may by law prescribe measures for the teaching, promotion and use of a provincial language in addition to the national language” .⁷²

The Supreme Court of Pakistan issued orders on 8th September, 2015 to the effect that “the provisions of Article 251 shall be implemented with full force and without unnecessary delay by the Federal and Provincial Governments”.⁷³

Above referred constitutional provisions reinforce status of Urdu as national and official language and allow promotion of provincial languages. Since 1970s, Sindh has introduced Sindhi and Urdu as medium of instruction in its schools. In addition, Sindhi is also being taught as a language in urban areas of the province.⁷⁴

7.3.2. Lingua franca and native languages or vernaculars

A language which is commonly used by diverse linguistic and ethnic groups for mutual communication is called lingua franca. Urdu is mother tongue of only 8% people in Pakistan, yet it is spoken and understood in all major cities, markets, offices, industries, educational institutions, national and provincial assemblies, courts and armed forces. Majority of the people in different parts of the country, are using their mother tongues for daily life, which is different from national language (Urdu) and official language (English, at present).

7.3.3. Strengths and commonalities of Urdu and provincial languages

Urdu and most of the provincial languages like Sindhi, Pashtu and Balochi etc. have number of features in common:

- Urdu and most of the Pakistani languages are influenced by Arabic, Persian, Sanskrit, and Turkish.
- Most of the alphabets used in Urdu, Sindhi, Pashtu, Balochi, Brahvi and Shina have similar shapes and phonics.
- All these languages are written from right to left.
- A person who is able to read Sindhi or Balochi text can also read Urdu easily.
- Apart from their distinct features and vocabulary, these languages have borrowed and adapted a number of words from each other.

⁷²*Constitution of Islamic Republic of Pakistan, 1973, Article 251*

⁷³*Muhammad Kowkab Iqbal v Govt. of Pakistan through Secretary Cabinet Division, Islamabad, No. 56 of 2003 (Cir Sep.2015); Syed Mehmood Akhtar Naqvi v President of Pakistan and others, No.112 of 2012, (Cir Sep, 2015)*

⁷⁴*Tariq Rahman. (1999). The teaching of Sindhi and Sindhi ethnicity (Islamabad: SDPI, Research Report Series 24)*

7.4 Education Policies and Medium of Instruction

The Pakistan educational conference held at Karachi in 1947 laid the foundation of a language teaching policy. The conference declared Urdu as the lingua franca of Pakistan and to teach it as a compulsory language in schools. The conference proposed that the provincial and state governments would determine the medium of instruction at school stage.⁷⁵ In 1948, the Advisory Board of Education set up an Urdu Committee. The committee in 1950 recommended Urdu as a medium of instruction of schools in West Pakistan.⁷⁶ Commission on National Education 1959 stated that best education result is achieved when the mother tongue is used as a medium of instruction at primary level.⁷⁷ The Commission proposed that national language should be studied as a subject from class-III and it will replace mother tongue as the medium of instructions from class-VI. The Commission contended that Urdu is medium of instructions at primary level in West Pakistan except in NWFP and Sindh; therefore, Urdu should be made compulsory language in these regions from class-III. The Commission further suggested that Urdu is taught as compulsory subject up to class VIII in some regions, therefore, it would be taught as a compulsory language up to class XII. The commission also recommended that Urdu would be taught as a compulsory subject in those schools where English is the medium of instruction. Since then various education policies encouraged the promotion of Urdu in education milieu which was considered as an important medium for national integration and cohesion.

National Education Policy 2009 has made the following provisions relating to medium of instruction and languages:

- i. Ministry of Education, in consultation with Provincial and Area education departments, relevant professional bodies and the wider public, shall develop a comprehensive plan of action for implementing the English language policy in the shortest possible time, paying particular attention to disadvantaged groups and less developed regions.
- ii. The curriculum from Class-I onward shall comprise of English (as a subject), Urdu, one regional language and mathematics, along with an integrated subject.
- iii. The Provincial and Area Education Departments shall have the choice to select the medium of instruction up to Class V.
- iv. For the first five years, Provinces shall have the option to teach mathematics and science in English or Urdu/ official regional language; but after five years the teaching of these subjects shall be in English only.

⁷⁵Government of Pakistan, Ministry of Interior (Education Division). (1947), *Proceedings of the Pakistan educational conference*, (Karachi: Ministry of Interior (Education Division), p.43).

⁷⁶Tariq Rahman. (1998), *Language-teaching policies in Pakistan*. (Islamabad: SPDI, Research Report Series # 14). Retrieved from <https://sdpi.org/publications/files/R14-Language-Teaching%20Policies%20in%20Pakistan.pdf>

⁷⁷Government of Pakistan, Ministry of Education. (1959), *Report of the Commission on National Education 1959*. (Karachi: Government of Pakistan Press).

- v. A comprehensive school language policy shall be developed in consultation with provincial and area governments and other stakeholders.⁷⁸

After 18th Amendment to the Constitution, tasks of curriculum and textbooks development and related subjects like medium of instruction have been assigned to the provinces. Now provinces will have to make decisions in this respect, keeping in view their local context and needs. Nonetheless, a common framework on medium of instruction, to be mutually agreed upon by all stakeholders will be beneficial for the country.

7.5 Guidelines for Medium of Instruction

The following guiding principles and strategies are recommended with respect to medium of instruction.

- Since children learn and perform better when taught in mother tongue, and teaching in foreign language hinders their comprehension, therefore, provinces and areas should keep in view pedagogical principles and considerations while making decision about medium of instruction.
- Constitutional provisions (Article 251) regarding use of national language for official and ‘other purposes’, and promotion of provincial languages should also be kept in view.
- All stakeholders, including teachers, parents, and public representatives (e.g. Standing Committees of National and Provincial Assemblies on Education) should be consulted on the issue of medium of instruction.
- Research studies may be commissioned to investigate about effects of medium of instruction and gather new information about related issues like teachers’ competencies and classroom practices, etc.
- Governments should invest financial and human resources for translation of terms and concepts of natural and social sciences from international languages to national and local languages.
- Not all provincial or local languages are equally developed. Certain languages can best be used for oral communication or folklore only. Their use for educational purposes is yet to be assessed. Provincial governments will have to assess feasibility of adopting such languages for teaching-learning purposes and foresee the difficulties involved and spade work to be carried out. Past experiences of using regional languages as medium of instruction in some of the provinces may be kept in view while planning new initiatives.

⁷⁸Government of Pakistan, Ministry of Education.(2009). *National Education Policy 2009*. (Islamabad: Ministry of Education p. 20).

- Most preferred model, successfully experimented in many countries is to follow a multilingual policy, starting from mother tongue (i.e. L 1) as medium of instruction in early grades, and moving to L 2 (Urdu and English) at lower secondary or secondary levels.

Languages carry with it and tend to transmit specific milieu of the socio-cultural environment where these have originally flourished. Usage of native languages and lingua franca of a country reinforce local culture, history, folklore and values. These dimensions should always be kept in view at the time of devising policy on medium of instruction.

7.6 Guidelines for Teaching of Languages

In today's era of globalization and interdependence, countries cannot progress in isolation. Therefore, it is imperative to expose children not only to powerful languages of the world but also languages of the neighbouring countries. In this respect following strategies are proposed:

- Provinces may consider to introducing English as an optional subject from Grade I to V and as compulsory subject from Grade VI onward.
- In bilingual or multilingual provinces like Sindh and Balochistan, provincial governments may decide to follow the dual language model used by Afghanistan, where both Pashtu and Dari are taught side by side. An additional native language may be offered as an optional subject.
- Keeping in view historical and geographical relationship, Arabic, Persian, Turkish, and Chinese languages may also be offered at secondary or higher secondary levels.

A number of studies have established that in early years of their life, children and youth can learn more than one language, after they have learnt basics of their own mother tongue (i.e. L 1). Proficiency or literacy skills (speaking, reading, and writing) acquired in mother tongue provides jumping pad to the children to learn other languages.

In countries which have been colonies of the imperialist powers in the past, foreign language is linked with social status and considered a vehicle for social mobility. Parents from low economic strata prefer to enrol their children in English medium schools to seek better employment opportunities for their next generations. Dichotomy in language policies perpetuates stratification in the society. It is therefore desirable that provinces and areas after consultation with stakeholders should prepare and enforce a uniform policy on languages and medium of instruction. A uniform policy across all education sectors, public and private, will help eradicate discrimination and division in the society.

Chapter – 8

Assessment and Examination

8.1 What is Assessment?

Assessment is the process of defining, selecting, designing, collecting, analysing, interpreting, and using information to continuously increase students' learning and development. It is the systematic collection, review and use of information about educational programmes to improve student learning. Assessment focuses on what students know, what they are able to do, and what values they have when they receive their education. Assessment is concerned with the collective impact of a series of lessons on student learning.⁷⁹

8.2 Types of Assessment

8.2.1 Formative assessment

Formative assessment refers to a wide variety of methods that teachers use to conduct in-process evaluations of student comprehension, learning needs, and academic progress during a lesson, unit, or course. The goal of formative assessment is to monitor student learning to provide on-going feedback that can be used by teachers to improve their teaching and by students to improve their learning. More specifically, formative assessments:

- help students identify their strengths and weaknesses and target areas that need to be addressed; and
- help teachers recognise where students are struggling and to address these problems.

8.2.2 Summative assessment

Summative assessments are used to evaluate student learning, skill acquisition, and academic achievement at the end of a defined instructional period - typically at the end of a course, semester or school academic year. Summative assessment is used to assess the benchmarked performance of students. The goal of summative assessment is to evaluate student learning by comparing it against some standards or benchmarks. This assessment is often carried out at the end of a 'learning and teaching' cycle.

The child-centric and holistic nature of the new curriculum requires a fundamental change in assessment practices. It is therefore, important that formative and summative assessments are clearly aligned with the existing curriculum. The official curriculum 2006 lays

⁷⁹Erwin, T. D. (1991). *Assessing Student Learning and Development: A Guide to the Principles, Goals, and Methods of Determining College Outcomes*. (San Francisco: Jossey-Bass).

out the details of changes in assessment and examination that should take place as part of the curriculum implementation and its evaluation.⁸⁰

8.2.3 Large-scale assessment

Large-scale assessments are conducted by National Educational Assessment System (NEAS), in collaboration with Provincial and Areas Education Assessment bodies since its establishment in 2003⁸¹. The objective of these assessments is to evaluate the overall capability and quality of the education system, and to focus on providing evidence based findings to policy makers for effective interventions in education system. NEAS conducted its sample-based large-scale assessments in 2005, 2006, 2007, 2008, and in 2014. NEAS is going to assess students' learning outcomes at grade 4 and 8 levels over a sample of 30,000 students in 1500 schools across the country at the end of academic year in 2016-2017. Similarly, Provincial and Area assessment centres also conducted their own assessment at different grade levels.

Pakistan is scheduled to participate in next Trends in International Mathematics and Science Study (TIMSS) to be conducted in 2019. This is one of the action point of National Education Policy, 2009.⁸² For this purpose, the Ministry of Federal Education and Professional Training has signed a Memorandum of Understanding (MoU) with the International Association for the Evaluation of Educational Achievement (IEA) Amsterdam, Netherlands on 9th September, 2016.

The purpose of these international studies such as Programme for International Student Assessment (PISA), Progress in International Reading Literacy Study (PIRLS) are

- a) to provide international benchmarks that assist policymakers in identifying the comparative strengths and weaknesses of their educational systems;
- b) to provide high quality data that will increase policymakers understanding of key factors that affect teaching and learning, and for preparing and evaluating educational reforms;
- c) to allow participating nations to compare students' educational achievement across borders; and,
- d) to address concerns about school resources and the quality of curriculum and instruction by collecting background information of students and their parents, subject teachers and head teachers.

⁸⁰Government of Pakistan. (2006). *National curriculum mathematics classes I-XII*. (Islamabad: Curriculum Wing, Ministry of Education,).

⁸¹Government of Pakistan, National Education Assessment System (NEAS).(2005). *National Assessment Report*. (Islamabad: Ministry of Education, National Education Assessment System).

⁸²Government of Pakistan, Ministry of Education.(2009). *National Education Policy 2009*. (Islamabad: Ministry of Education , Policy & Planning Wing).

8.3 Importance and Purpose of Assessment

Assessment is “an integral component of the teaching process”.⁸³ It is the third stage in an instructional cycle, undertaken after planning instruction and delivering instruction.⁸⁴ For this reason, after a long time forgotten, assessment became one of the most focused on educational issues in the twentieth century, as well as in these first years of the twenty first century. This globalization of interest in assessment has created many international debates. However, despite the discrepancies in beliefs about the benefits and disadvantages of individual forms of assessment, most assessment experts share the view that using many instruments to measure students’ learning quality will provide more reliable results and more valid interpretations⁸⁵, because “no single assessment procedure or instrument can be expected to provide perfect, error-free information”. Therefore, such areas as regional/provincial/ national/international large-scale assessment, alternative assessments and formative and summative assessment have become more and more popular in recent years. The importance of assessment lies in providing:

- Mechanisms to judge whether students are achieving the learning outcomes at an appropriate level of competence as per the curricula that teachers have planned as a part of their courses and programmes through, for example:
- Formative assessments (assessment for learning) at certain (weekly, monthly etc) during the learning process to judge’ progress
- Summative assessments (assessment of learning) at the end of a learning process or scheme to work to judge achievement
- Diagnostic assessments at the outset of a learning process
- Certification at local, national and international.

8.4 Steps for Assessment Standardization

Following steps may be helpful for standardization of assessment;

- Involve senior policy makers from the outset to ensure political support and to help frame the assessment design.
- Determine and address the information needs of policy-makers when selecting aspects of the curriculum by grade levels, and by population sub-groups (e.g., by region, by gender) to be assessed.
- Describe in detail the content and cognitive skills of achievement and the background variables to be assessed in national/provincial and regional assessments.
- Entrust test development to personnel who are familiar both with curriculum standards and learning levels of students (especially practicing teachers).

⁸³Reynolds, C. R., Livingston, R. B., & Willson, V. L. (2006).*Measurement and assessment in education*. (Boston: Pearson& Bacon).

⁸⁴Airasian, P. W., & Russell, M. K. (2005).*Classroom assessment : concepts and applications* (6th ed.). (Boston: McGraw-Hill)

⁸⁵Griffin, P., & Nix, P. (1991).*Educational assessment and reporting: a new approach*.(Sydney: Harcourt Brace Jovanovich).

- Use assessment instruments that adequately assess the knowledge, skills and attitudes about which information is required, and which will provide information on sub-domains of knowledge or skills (e.g., problem solving) rather than just an overall score.
- Develop clear and unambiguous test and questionnaire items and present them in a clear and attractive manner.
- Develop test item bank by each assessment organization compatible with the official curriculum benchmarks.

8.5 Guidelines for Implementing Standards for Assessment

In order to operationalize the complexity of the different assessment level effectively to promote students learning, the different levels must be dovetailed and synchronized in a seamless system based on a common understanding. Thus, it is necessary that the textbooks writers, the teachers and the external assessment machinery follow a set system and methodology of assessment based on certain agreed and commonly understood guidelines. In this regard the standards for assessment and evaluation agreed upon in interprovincial meetings and documented in the Minimum National Standards for Quality Education in Pakistan are reproduced here as an integral part of the National Curriculum Framework.

To systematically address deficiencies in the current assessment practices in Pakistan (noted above) and to enable assessment of students' performance the following list of actions and standards are required to establish effective assessment processes for learning:

1. Establish a standardized assessment process including public exams to ensure uniformity across the examination so that all the students are assessed against similar benchmarks;
2. Students' performance assessment may be based on the attainment of Student Learning Outcomes (SLOs) prescribed in the national curriculum;
3. Assessment methods and procedures may be periodically and systematically reviewed and revised as necessary to adapt to evolving requirements;
4. Monitoring of exam system may ensure regulations for transparency and effectiveness of the assessment process in terms of paper setting, preparation of marking scheme, exam supervision, collection of exam material, coding, decoding and marking;
5. Appropriate use of ICT for ensuring efficiency and transparency in assessment processes;
6. Accountability of assessment process through a system of checks and balances;
7. Examination boards must ensure alignment of assessment to the prevalent curriculum;

8. Effective policy mechanisms to ensure appropriate use of assessment data;
9. Uniform continuous professional development and training of assessors (paper setters, examiners, paper markers, coders and invigilators and other relevant staff) is regularly conducted to enhance their expertise with clarity about their roles, responsibilities and standards;
10. Standardized multiple assessment tools in addition to traditional examinations may be developed and used to achieve a balance between formative assessment approaches, summative examinations, and high stake examinations. Such results can be used to provide feedback into instructional, curriculum and educational planning processes;
11. All assessments may be aimed to measure knowledge, understanding, as well as critical, analytical and creative thinking skills based on the requirements of different cognitive levels of the curriculum;
12. Assessment may serve to provide constructive information for the students, teachers, parents, and other stakeholders to improve student learning outcomes;
13. Assessment may focus on outcomes encompassing attitudes, behaviors and skills (both hard and soft skills) that link to positive participation in the society and motivate the learners;
14. Assessment may be understood by all working teachers and other relevant individuals who are using a range of educational assessment tools, adapting them to the individual learning styles and capacities of their students and of giving them timely feedback; and
15. Test item bank may be developed for each subject at Examination boards/school level through subject and assessment experts.

Feedback Mechanism

9.1 Need and Importance of Feedback

The term ‘feedback’ is used to describe the helpful information, knowledge, understanding or criticism gathered from an individual or a group of individuals as a reaction to an action undertaken in implementation of certain policies and programmes. The information so collected involves both performance expected and performance exhibited. It can be used to adjust and improve current and future actions and to make important informed decisions. Feedback is helpful in highlighting strengths and weaknesses of an action or actions, in motivating people to work more for the organization, in formulating better and informed choices and decisions and in improving and increasing the performance. Feedback is important in order to remain aligned to the goals and strategies and is the key to improve and increase performance.⁸⁶

9.2 Nature of Feedback and Evaluation

The terms feedback and evaluation are synonym in nature with a minor difference i.e. feedback is generally carried out by collecting data and information through various instruments of data collection without undertaking any scientific analysis whereas evaluation is the appraisal and analysis of outputs in comparison with the initiatives taken in the past to implement a policy or programme and to measure the effectiveness and impact of those initiatives or interventions. Evaluation is near to appraisal, assessment or interpretation.

Evaluation is defined as “to judge the value or condition of (someone or something) in a careful and thoughtful way”⁸⁷ or “to judge or calculate the quality, importance, amount or value of something”.⁸⁸ Evaluation, therefore, refers to the academic audit or accountability:-

- a) to measure the effectiveness of inputs;
- b) to measure the effectiveness of interventions; and
- c) to measure the effectiveness of impact by knowing the status and knowing the needs in meeting the objectives for which an intervention was made.

WHY FEEDBACK IS IMPORTANT?

- It is a basic tool of research and analysis.
- It highlights strengths and weaknesses of a policy or an action.
- It helps in increasing and improving performance.
- It motivates people to work more passionately.
- It helps in formulating better and informed decisions and choices.

⁸⁶ Susan E. Wyse. (2015) Snap Surveys, ‘5 Reasons why feedback is important’ UK/US (Retrieved 12 September, 2016)

⁸⁷ Merriam-Webster. (2011). *Learners’ Dictionary; Encyclopaedia Britannica.*

⁸⁸ Cambridge. (2008) *Advanced Learners’ Dictionary and Thesaurus* (London: Cambridge University Press)

Evaluation is an integral part of the total education process and is to be carried out at all levels of the educational structure including curriculum framework.

9.3 Critical Areas of Feedback

In education and in the context of curriculum framework, essential areas on which feedback provides vital input for analysis and research can be grouped together in the following six major categories:-

- i. **Feedback on system:** It is essential to appraise the key outputs and outcomes of the education system to provide feedback for professionals and researchers to enable them to analyse, synthesize and make recommendations to the policy makers and implementers for reaching to new conclusions on the impact or effectiveness of the actions or initiatives undertaken to implement a policy or intervention.
- ii. **Feedback on school:** The school environment especially physical facilities and learning resources are critical for effective delivery of curriculum contents. Feedback on the availability or otherwise of learning resources (textbooks, learning materials, teachers, facilities of library, laboratory, computer lab, etc) and physical infrastructure (school building, boundary wall, toilets, sewage, safe environment, clean drinking water, electricity, hot and cold weather facilities) enables the educational managers to review the plans and projects for bringing improvement in the learning environment in the school.
- iii. **Feedback on curriculum:** Curriculum policy defines curriculum design and contents. It also gives guidelines for delivery of curriculum effectively in the classroom. For this purpose instructions are given for the preparation of textbooks, learning materials and other learning resources; for the development of essential competencies required in teachers to deliver the curriculum; for the conduct of examinations to assess different curriculum concepts; and for assessing core competencies of students at different levels of education. Feedback on the delivery of such a curriculum in the classroom on the basis of well-designed tools for data collection provides a sound justification for changes in the curriculum, its contents and its delivery.
- iv. **Feedback on textbooks:** Textbook is the major source of curriculum delivery in the classroom. It interprets the intentions of the curriculum and contains the learning material that is user-friendly and clearly identifies the learning outcomes expected to be achieved by the students. Feedback provides information and data as to how the textual materials are arranged to interpret the intentions of the curriculum and the needs of the students.
- v. **Feedback on teachers:** Teacher is the core factor who plays a pivotal role in implementing the curriculum in classroom and making the learning to happen. Feedback on the competencies required of teachers to deliver the curriculum with the intention it is framed together with academic audit on classroom delivery and student results is critical to shape new policy interventions.

- vi. ***Feedback on student assessment:*** The assessment of learning achievements of students itself is the feedback on how the learning is taking place in schools and how many essential competencies at a certain level of education and in a particular subject are being achieved by the students. However, there remains a common policy challenge of aligning student assessment of learning achievements with the standards, benchmarks and competencies identified in the curriculum. The assessment framework, therefore, needs to address this issue carefully and draw a balance between assessment and curriculum.

9.4 Curriculum as a Major Input for Learning

Curriculum is the major *input* in the curriculum framework for learning to happen in classroom and covers all arrangements for development and learning needs of students. Curriculum provides guidelines for:-

- i. *course contents* (concepts, scope, learning domains – cognitive, affective and psychomotor – standards, benchmarks, competencies, evaluation, etc);
- ii. *textbooks and learning resources* (guidelines for writers, designers, publishers and printers, learning facilities in schools like library, blackboard, charts, audio-video, multimedia, internet);
- iii. *teaching approaches* (learner-centred, direct, interactive, constructivist, integrated, collaborative, contextual);
- iv. *student activities* (curricular, co-curricular, extra-curricular);
- v. *organization of teaching and classes* (by whom, for whom, how and in what ways);
- vi. *decision making* on the need and use of facilities and resources.

Chapter – 10

Mechanisms for Information Sharing and Harmonization

10.1 Mechanisms for Information Sharing

In the post devolution scenario, the National Curriculum Council (NCC) has been established with equal representation from all federating units to serve as a body for coordinating among all federating units on the issues related to education particularly the curriculum. The NCC has to ensure that the children in all parts of the country have been embraced with the curriculum that develops competencies and standards equally. The NCC Secretariat serves as a focal institution to provide guidance and assistance to all its members to achieve equal level of excellence. It is, therefore the prime responsibility of NCC to provide opportunities to all the provinces/areas to share their concerns as well as their achievements related to curriculum development and implementation.

Education is a collective responsibility of all institutions or departments dealing with its any component. The curriculum authority develops curriculum guidelines and the Textbook Boards prepare or cause to prepare textual materials in line with the curriculum guidelines. The teachers' education institutions particularly those which are responsible for in-service teachers' development prepares the teachers to efficiently deliver the curriculum in classroom. The institutions responsible for examination and assessment examine the students for certification purposes and to assess the learning outcomes of the students. Above all the Education Departments have to ensure conducive environment of school to facilitate the learning process of students.

This necessitates a very close coordination and collaboration among all these institutions and departments. Fragmented governance i.e. functioning of the four major stakeholders of education i.e. curriculum authority, textbook board, teacher education and training institutions, examination boards and assessment centres under different administrative control makes the task more difficult. Four provinces and AJK have their own institutions like Bureaus of Curriculum (BoCs) to take the responsibility of curriculum development. They have Textbook Boards as well to develop textual materials in accordance with the curriculum. Both these are key organizations to implement the curriculum in provinces and AJK. The BoCs and Textbook Boards from each province and area are the members of NCC hence they need to share all developments related to curriculum with NCC. For this purpose, the following mechanism for information sharing is suggested:

10.1.1 Areas for information sharing

The areas include:

- i. Curriculum development including appraisal, review, revision and implementation
- ii. Scheme of Studies
- iii. Textbooks and learning materials policies and impediments
- iv. Teachers education and continuous professional development
- v. Examination and assessment
- vi. School age, medium of instruction and language policy
- vii. Learning environment and resources
- viii. Any other areas related to education and of mutual interest

10.1.2 Mechanism for information sharing

- i) NCC has to develop its website to display all information, materials, programmes and progress or achievements related to its mandate.
- ii) Allocation of specific space on the website of NCC for different thematic areas like curriculum, textbooks and learning materials, teacher education and training, school learning environment and examination and assessment, etc. All provinces and areas, may share their information on respective theme with NCC by, say, 10th of each month and NCC to upload that information on its website by 15th of the same month compulsorily as the most important and regular activity.
- iii) NCC may conduct research studies on mutually agreed topics with federating units and hold seminars to disseminate the findings to all members, civil society and relevant departments/organizations. NCC should also display the complete reports on its website.
- iv) NCC may conduct seminars and workshops on different topics of mutual interest in all provinces and areas particularly when a new curriculum is introduced or evaluation of an implemented curriculum is carried out or whenever some reforms are being introduced.
- v) NCC may issue its News Letter on subjects of its interest as per its mandate. The provincial and area departments must share their news with NCC for presenting in its News Letter. It may be issued on quarterly basis.
- vi) All provincial/area governments have to disseminate the curriculum to all stakeholders including schools.

10.2 Mechanism for Harmonization

The aim of harmonization of the curriculum is to collectively achieve the national goals and standards in education by preparing the youth in all parts of the country equally to carry the

country/nation forward in the comity of nations in future times. After devolution there is a dire need for harmonization to ensure integrity and cohesion for the sake of achieving the national unity within the diversity not only among the federating units but also among different sub-sectors of education. Some core subjects i.e. Pakistan Studies, Social Studies, and Islamic Studies/Ethics may be made compulsory for all educational institutions irrespective of their management (public, private, religious). At present there is no mechanism (constitutional or legal) to harmonize the curricula being offered by different streams of education mentioned below:-

- i. School education under public sector specifically managed by Education Departments of different federating units.
- ii. School education in public sector being managed by different ministries/department in different federating units.
- iii. School education in public and private sectors in federating units.
- iv. School education and technical and vocational education.
- v. School education and Madrasah education
- vi. Formal school education and non-formal basic education and adult education
- vii. Examinations at Secondary and Higher Secondary level in provinces and areas
- viii. Examinations at Secondary and Higher Secondary and “O” and “A” level

10.2.1 Mechanism for harmonization post devolution scenario

Following mechanisms are suggested to harmonize curriculum development and implementation in the post devolution scenario:-

A. Harmonization of school education managed by public sector of federating units

As step-I the harmonization of school curriculum may be ensured among public sector of all federating units which covers more than 50% of whole education at school level in Pakistan. For this purpose following mechanism is suggested:-

- i. The federating units may adopt participatory approach for development of curriculum keeping in view the spirit of 18th Constitutional Amendment. A representative from NCC Secretariat as an observer and from other provinces/areas be invited by the provincial/area governments to participate and facilitate as well as learn from the process of development of curriculum.
- ii. The provincial/area governments may look for joint ventures to develop subject curricula. The provincial / area BoCs may jointly develop curricula of different subjects with mutual consultation and consensus. Decisions in this regard may be taken on the forum of NCC
- iii. Decision for development of subject curriculum on the basis of expertise with the provinces may be made specifically in case of basic sciences. For example if a province has expertise in physics it may develop curriculum of that subject and that curriculum may be owned or even adapted by all other provinces and areas.

Similarly some other province if has expertise in another subject it may develop curriculum of that subject.

- iv. In case a province takes a lead and develops curriculum in a subject prior to other provinces that province may share that document with other provinces and areas. The other provinces with permission from that province may revise/amend and adapt that curriculum for their use.
- v. The textbook development can be carried out by respective provinces through joint ventures or by adaptation of textbooks from other provinces with mutual consultation and agreement if the curriculum permits so.
- vi. For examination and assessment the findings may be shared among the federating units every year and discussed in NCC as well. The provinces may benefit from the expertise and data bank/item banks of each other by maintaining secrecy. The IBCC may be activated and made responsible to ensure harmonization of examination system at SSC and HSSC level.
- vii. The Curriculum Authorities/ BoCs in the provinces and areas should ensure that the curricula notified by them are being implemented for all classes in the schools being run by different departments of public sector in the jurisdiction of respective province/area

B. Harmonization of school education managed by public sector and private sector of federating units

Second priority may be assigned to harmonize the curricula offered by public and private sector for school education (pre-primary to Grade XII) in respective provinces/areas. The private sector is now occupying over 40 % of education in the country. The private sector educational institutions registered in Pakistan are divided in the following categories:-

- i. Those affiliated with the Examination Boards in Pakistan and are following the curriculum developed at national and provincial level.
- ii. Those functioning in Pakistan but are affiliated with Examining Bodies outside Pakistan. Such institutions are not following the curriculum of Pakistan
- iii. Those institutions registered in Pakistan but are not following the public school curriculum for classes which are not examined by examining bodies in Pakistan i.e. KG to IV and VI to VII

To harmonize the curricula and to ensure its implementation in the private sector institutions and public sector institutions following are suggested:-

- i. NCC may develop a concept paper on the issue and submit it to IPEMC for discussion. The paper may cover all issues and challenges being faced for national integrity, cohesion and development keeping in view the practices of international community over a period of one year.
- ii. NCC may with the approval of IPEMC suggest the Education Departments to establish linkages between private and public sector at management level.
- iii. NCC may invite the private sector in its meeting as an observer whenever an agenda item related to harmonization is discussed. The private sector may be provided an opportunity to explain their view point in this regard.
- iv. The provincial/area governments may introduce some legislation on the pattern of international best practices making it mandatory for the private sector to follow some key contents / core subjects that are important for national integration and cohesion. BOCs in consultation with the private sector decide such subject areas.
- v. The provincial and area governments in consultation with private sector may introduce amendments in the registration process of private educational institutions with regard to following the public school curriculum
- vi. NCC with the approval of IPEMC, may involve the private sector in the private sector as well as selecting topics of research related to curriculum and its implementation. Findings of such studies may be shared with private sector formally.
- vii. The NCC through Education Departments may conduct seminars and conferences on need and importance for harmonization of curricula of public and private sector institutions in their jurisdiction. Private sector management may be invited to participate in such activities

C. Harmonization of formal school education and non-formal basic and adult education

Non-Formal Education System is playing an important role in helping the government to meet EFA goals as well as MDGs/SDGs in many countries. In Pakistan both formal and Non-Formal Education are running parallel to each other. The Non-Formal education in private sector in Pakistan is following its own curricula which have no relevance to even Non-Formal education in public sector. This situation requires serious considerations. For this purpose following mechanism is suggested:-

- i. NCC may invite the responsible officials of Non-formal sector in its meetings as observer and share the issues pertaining to importance of harmonization of curricula for national integrity, cohesion and development.

- ii. The provincial/area curriculum authorities may build capacity of Non-Formal Education sector in public and private sector in curriculum development and implementation and involve the experts of non-formal sector in curriculum development by aligning key learning areas/concepts of formal and non- formal curricula.
- iii. NCC may hold conferences and seminars on the need and importance of harmonization for national integration, unity and development and role of both formal and non-formal education.
- iv. The Textbook Boards through their systems may develop learning materials for the non-formal education as well in respective province/area.
- v. A common body may take examination of both formal and non-formal systems for the sake of certification and mainstreaming of the graduates of non-formal system at primary and middle level.
- vi. The non-formal education departments in federating units may share their curricula and learning materials with each other and allowed to be adapted by others with permission of the owner.
- vii. NCC may initiate discussion with the provinces/areas on the issue of teachers for non-formal basic education and agree to minimum qualification for appointment as non-formal education.

D. Harmonization of formal school education and technical and vocational education

At present both school education and technical and vocational streams are running independently in the country. There is a need and desire to make efforts to harmonize the school education and technical and vocational education. There are reports that in the absence of any mechanism for mainstreaming of the graduates of Matric-Tech the students do not take interest in this stream. Further there are issues with the equivalence of DAE and the holders of diploma if are interested to continue education in formal sector they face difficulties. Moreover, to meet the needs of semi-skilled work force for the industry we need to integrate both the streams i.e. formal school education and technical and vocational education at secondary school level at least. For this purpose following are suggested:-

- i. NCC may conduct a series of conferences on highlighting need and importance of harmonization of school education and technical and vocational education and issues related to it.
- ii. NCC may invite the managers/experts from technical and vocational fields (public and private sectors) in its meetings on specific agenda items to discuss the issues of harmonization of school and technical and vocational education

- iii. NCC may take up the matter with IPEMC for approval to take necessary steps for harmonization of general school education and technical and vocational education on agreed upon principles.
- iv. National Vocational and Technical Training Commission (NAVTTTC) and Technical Education & Vocational Training Authority (TEVTA) may be sensitized on the importance of harmonization of both streams for national development. They may be invited to share views on the issues of harmonization of curricula in the meeting of IPEMC on appropriate time.
- v. Scheme of Studies providing space in school education may be revised jointly by experts in general education and technical and vocational education to introduce technical and vocational subjects at SSC and HSSC level.
- vi. Equivalence issues of DAE with general education be resolved enabling the DAE holders to continue further education in general universities if so desired by them.
- vii. The Education Departments may arrange for the curriculum and learning materials, teachers and examinations and assessment experts before implementation of this Scheme of Studies

E. Harmonization of school education and madrassah education streams

Over 25000 Islamic seminaries (madrassas) are functioning in the country mainly in private sector and imparting religious education to masses particularly the poor and deprived segments of society. Most of these are residential and are responsible to provide all supports to their students. There have been issues with this stream and some have allegedly been reportedly involved in promoting terrorism in the country. Following are suggested in this regard:

- i. A study on comparative analysis of common aspects of curricula may be conducted including research on the ways and means of harmonization of both streams i.e. madrassas and Public school. Recommendations of the study particularly to harmonize curricula of compulsory subjects to start with may be discussed in a seminar conducted by NCC and attended by all stakeholders.
- ii. The authorized Representatives of four Wafaqs/Boards of Madrassah stream may be invited to discuss the findings of the study in a special meeting of NCC and to prepare recommendations for IPEMC.
- iii. NCC may prepare a concept paper on need and importance and issues related to harmonization and share it with heads of all four Boards of Madrassah education after obtaining approval of IPEMC.
- iv. After approval of IPEMC, a Committee of experts from school education and madrassas education be constituted to look into both Schemes of Studies of school education and prepare recommendations for amendment to accommodate madrassas education for harmonization purpose.

- v. Necessary facilities such as Teacher Training and free availability of textbooks on the subjects of general education for the students of madrassas may also be arranged by respective provincial/area governments like schools in public sector.
- vi. After implementation of harmonization scheme in case of compulsory subjects discussion be generated through seminars and conferences for introduction of other contemporary subjects as “Elective” or “Optional” in Madrassah.
- vii. Once an agreement is reached necessary amendments in the Scheme of Studies may be made with the approval of IPEMC have due representations of all Boards of Madrassah stream.
- viii. Capacity of Examination Boards and of IBCC may be built to address the issues of equivalence of school ion and madrassas education at SSC and HSSC level.

F. Creating a national fund for education

There are examples of federal systems of government like Australia, Canada and USA where education is fully devolved to states or provinces but the federal governments work in close collaboration with the states and provinces to achieve equal standards. In Pakistan 18th Constitutional Amendment has empowered the provinces and areas to run their education for the welfare of their people. The National Curriculum Framework will provide a pathway to Federal, Provincial and Area governments to collaborate with each to jointly meet their international commitments like SDGs. The Constitution makes the State responsible to provide free and compulsory education to all children of age 5-16 years. To meet these obligations jointly following suggestions are made:-

- i. The federal government may start a dialogue with provinces to create an education fund out of allocations (federal and provincial) of NFC Award. The fund may be utilized for reforms in education through IPEMC with focus on curriculum and assessment areas.
- ii. The federal government may create an Education Pool from its own resources to assist the provinces in curriculum reforms and implementation of NCF. Later the assistance can be extended to provinces and areas in meeting international commitments and implementing Article 25A of the Constitution by all the federating units.

Annexure: I

Medium of Instruction and Global Practices

Most of the nation states use their official or national language as medium of instruction. In bilingual and multilingual societies, different models and strategies are followed. Few practices are given below:

- **National Language or Mother Tongue as Medium of Instruction:** All the public sector schools in England, USA, New Zealand and Australia use English as medium of instruction. Keeping in view its linguistic divide, Canada is using dual language policy, English and French both are used as medium of instruction in different provinces. Countries like Turkey, Indonesia, Malaysia, Iran, Sri Lanka, Thailand, Japan and most of the Arab countries use their national language as medium of instruction for their own citizens.
- **Foreign Language as Medium of Instruction:** Most of the African countries which were colonized by British or French, have adopted the language of their imperial rulers as their medium of instruction. However, in South Africa a bilingual policy is being followed.
- **Bilingual Education:** Some countries follow a mixed approach. Native or mother tongue is used as medium of instruction. Side by side, another language (national or a foreign language L 2) is also introduced as a compulsory or an optional subject. These countries include India, Bangladesh, Singapore, Jordan, Israel, Mongolia, Netherland etc.
- **Transitional Bilingual Education:** Some countries follow the model of Transitional Bilingual Education. This means, education in early grades is offered in the mother tongue (or first language, L 1) and side by side, Second Language (National Language or a foreign language, L 2) is also taught as a subject. Gradually, after Grade 3 or Grade 5, medium of instruction is shifted to the national language or L 2. This model is followed in some parts of China, Philippines, Scotland, Northern Ireland, South Africa, Tanzania, and Ethiopia. This model is also followed for education of children from migrant families in USA, and in schools for aboriginals in New Zealand.

Pakistan can benefit from these models and devise a strategy which addresses its national needs and challenges of national identity and integration.