AN OVERVIEW OF THE NATIONAL CURRICULUM DEVELOPMENT PROCESS FOR AZERBAIJAN

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INTRODUCTION

The need for developing stronger education stems from the social pressures for change on one hand and on the other hand, from the latest scientific development in various fields. The future of the Azerbaijan nation is contingent upon addressing the education needs of today's children in a way that meets these needs.

Social Need for Curriculum Development

Strong social changes are characteristics of present times. Governmental, political, and economic systems have changed so much that their effects have not gone unheeded by the Ministry of Education. Rapid changes in working and business conditions and resulting expectations demand a flexible attitude towards continuous education and the adoption of effective preparation in appropriate studies.

The government of Azerbaijan is committed to reform of education utilizing a 10-year educational reform strategy. The primary purpose of this reform is to address and improve the quality of education and realign with the emerging market economy and social conditions.

More specifically, this reform is comprised of five components: (a) quality and relevance of general education; (b) efficiency and finance reforms; (c) equity and access, upgrading schooling in less advantaged regions, school grant program; (d) management, planning, and monitoring capacity; and (e) project coordination and monitoring.

Scientific Need for Curriculum Development

The utilization of new technologies, the ability to pursue studies independently, a spirit of trying, sense of responsibility, and the ability to cooperate are important attributes in the world where individual and collective tasks and duties in working life are constantly changing and where responsibilities are redistributed in new ways.

The realm of knowledge is growing by leaps and bounds, which means the content of many subjects in public schools requires substantial and frequent revision in order to properly prepare today's youth. In addition, it is difficult to master the new subject matter in the absence of updated curriculum reflecting new teaching strategies, new methodologies, and new technology.

The Purpose of Curriculum

The overarching purpose of curriculum is to provide planned learning experiences for all children. The curriculum is the vital link between education and learning, between teacher and student. The more comprehensive the curriculum and the curriculum planning process is, the more the curriculum achieves its purpose as the vital link in education.

Perspectives of Education

John Dewey (1902) provides a descriptive definition of curriculum as "Curriculum is a continuous reconstruction, moving from the child's present experience out into that represented by the organized bodies of truth that we call studies…the various studies…are themselves experience – they are that of the race."

Franklin Bobbitt (1918) provides a prescriptive definition of curriculum as "Curriculum is that series of things which children and youth must do and experience by way of developing abilities to do the things well that make up the affairs of adult life; and to be in all respects what adults should be."

Gagne (1967) provides a concise definition of curriculum as "Curriculum is a sequence of content units arranged in such a way that the learning of each unit may be accomplished as a single act, provided the capabilities described by specified prior units (in the sequence) have already been mastered by the learner.

Hilda (1962) provides a comprehensive definition of curriculum as "A curriculum usually contains a statement of aims and of specific objectives; it indicates some selection and organization of content; it either implies or manifests certain patterns of learning and teaching… Finally, it includes a program of evaluation of the outcomes".

Tyler (1957) provides a definition of curriculum as "[The curriculum is] all the learning experiences planned and directed by the school to attain its educational goals."

Curriculum can be understood, as expressed by these educators, as an essential component of the educational experiences of the learner. Curriculum may be thought of as the path by which teacher and learner are connected. The more perfectly planned and developed this path is, the more the student experiences the necessary steps to educational success and the more perfectly the student will have gained the education necessary to meeting the national goals of educational reform.

Curriculum Development
The fundamental questions to address in developing curriculum are:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain   these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether and to what extent these purposes are being attained? (Tyler, 1949)

These four questions comprise the conceptual overview of curriculum. The curriculum framework is the document that provides the outline of the structure demonstrating the best practices for achieving the knowledge, skills, and processes, the student should know and understand about a particular discipline. The curriculum must be developed so that the student is able to continue with the appropriate studies at the next schooling level based upon the number of hours as defined in the national standards.

Concept Mapping
The State of Washington (2006) has developed an extensive process for curriculum development. In particular, the Curriculum Council provides an overview for concept mapping of curriculum design using the following qualities:

1. Information regarding missing and/or unnecessary components and themes of course content.
2. Holistic integration, continuity, and organization of meaningful, relevant, and pedagogically sound concepts and content areas for both teachers and students.
3. Guidelines for instructional materials, teaching strategies, and task allocations.
4. Visual representation of the relationship between course content and objectives.
5. Cross validation of faculty and student course purposes and content.
6. The relationship of theory to practice and multiple ways of conceptualization of content and pedagogy.

Steps for Planning Curriculum Development
The curriculum plan must contain (a) the goals, (b) rationale, (c) learner characteristics, (d) subject content, (e) learning objectives, (f) instructional plan, (g) list of materials, and (h) a plan for assessment or evaluation. These elements comprise the basic core and steps used to develop a complete curriculum.

These elements of the basic curriculum development are designed to offer a curriculum that is academically rich, student-centered, and cultural diverse, and recognizes the contributions from all of the shareholders of the Republic. The successful curriculum inspires children to realize their full potential by bringing together educational objectives, content, instructional strategies and evaluative techniques for all subjects covered in every grade level. Curriculum also must promote high expectations for teachers and students. When properly developed, curriculum becomes the foundation and heart of education and attains the capacity to serve as the underpinning of a successful society capable of meeting ongoing and new challenges.

Curriculum Framework
The curriculum framework provides an overview of the entire structure of the curriculum development process. This framework provides the vision to improve the learning outcomes of all students and to enable schools to develop learning and teaching programs that meet the needs of students and changes in society. The curriculum framework reflects contemporary thinking about what students need to learn in order to lead successful and rewarding lives in the 21st century and how schools and teachers can best help them to learn. The development of knowledge, skills and values is a lifelong process and occurs in many places besides school. The outcomes that all students need to attain in order to become lifelong learners, achieve their potential in their personal and working lives, and play an active part in civic and economic life must be described in the curriculum framework as well as the student outcomes at different stages in their schooling.

The primary components of a comprehensive curriculum framework for meeting the Azerbaijan educational goals are contained in the following sections and subsections.

Philosophy and Conceptual Principles
Philosophy is a discipline that cultivates critical thinking as a systematic endeavor that seeks an understanding of all human experiences. The philosopher strives after an understanding of self, others, and the world through an analysis of various domains of human experience and reflection. Thus, philosophy looks for the connections between art, science, mathematics, religion, politics, and human behavior and attempts to interpret these thoughts and experience within a holistic tableau. In sum, philosophy attempts to disclose rational meanings for the question "What is it all about?"

In order to provide the philosophical basis by which the national curriculum is to be developed, seminal principles guiding that development is established by acceptance of a mutual philosophy and principles. This process of development and acceptance begins with definitions of essential terms used to characterize the educational system to be improved through curriculum development.

Definitions
Education. Education is the process of training and developing the mind for knowledge and the character for proper actions. This process takes place typically in formal schooling, but also at home and throughout the day and lifetime of each person. The process of education is achieved by instruction, study, schooling, direction, tutelage, and training resulting in the edification of the student being served.

Curriculum. The curriculum provides the pathway for developing the skills, performances, attitudes, and values pupils are expected to learn from schooling. The curriculum includes the planned sequence that will be delivered to the students, the description of materials, and the expected outcomes and their evaluation. The curriculum also provides for sustained process of teaching and learning.

Framework. The curriculum framework represents in an outline form, a set of concepts linked together to demonstrate a plan or design describing the complete process of curriculum development.

Standard. Standards are used in curriculum development to refer to the average performance expected for a student of a particular age and may be divided into two general categories: (a) content standards, which are expectations about what the child should know and be able to do in different subjects and grade levels; defines expected student skills and knowledge and what schools should teach, and Performance standards, which are specific expectations specified at different performance levels or benchmarks.

Performance level. Performance levels refer to varying degrees of achievement in broad terms. These performance levels are identified by expected outcomes in the curriculum. Outcomes are metrics and thus must be measurable. These levels are frequently expressed as Advanced, Proficient, Nearing Proficiency, and Novice.

Performance level recommended for Azerbaijan. Three levels of performance are recommended, specifically, Novice, Apprentice, and Proficient. These levels are defined as follows:

1. Novice. (a) Demonstrate minimal understanding of rudimentary concepts and skills, (b) occasionally make obvious connections among ideas, providing minimal evidence or support for inferences and solutions, (c) have difficulty applying basic knowledge and skills, and (d) communicate in an ineffective manner.

2. Apprentice. (a) Demonstrate partial understanding of basic concepts and skills, (b) make simple or basic connections among ideas, providing limited supporting evidence for inferences and solutions, (c) apply concepts and skills to routine problem-solving situations, and (d) communicate in a limited manner.

3. Proficient. (a) Demonstrate general understanding of concepts and skills, (b) make meaningful, multiple connections among important ideas or concepts and provide supporting evidence for inferences and justification of solutions, (c) apply concepts and skills to solve problems using appropriate strategies, and (d) communicate effectively.

Conceptual Principles
The curriculum framework for schools in Azerbaijan is underpinned by seven key principles. These principles guide schools in whole-school planning and curriculum development.

Common Core Values
Common core values represent the basic principles that are believed to be essential to the complete development of the national curriculum. While recognizing and respecting that there is a range of value positions in a pluralistic society, there is also a core of shared values. These core values include:

Holistic. An encompassing or exhaustive view of curriculum is essential to the learning experience. The curriculum must be dynamic and inclusive of all learning experiences provided for the student. The curriculum includes the learning environment, teaching methods, the resources provided for learning, the systems of assessment, the school ethos and the ways in which students and staff behaves towards one another. All of these provide experiences from which students learn. Together, they add meaning, purpose and enjoyment to students' lives. Particular attention is required to ensure that there is congruence and integration between the various dimensions of curriculum.

These core values may be specifically identified as: (a) a commitment to the pursuit of knowledge resulting in a disposition ordered toward contributing to the pursuit of excellent; (b) learning respect for each person's unique potential-physical, emotional, aesthetic, spiritual, intellectual, moral and social; (c) demonstrating respect for others resulting in a commitment to exploring and promoting the common good, accepting social and civic responsibility; and caring for the well being of others; and (d) learning to contribute to democratic processes, social justice, and cultural diversity.

Inclusive. The national curriculum addresses the needs for all students in all schools, irrespective of educational setting, with access to a wide and empowering range of knowledge, skills and values. This curriculum recognizes and accommodates different starting points, learning rates, and previous experiences of individual students or group of students. Students' cultures, physical or mental challenges, race, class, and gender are respected individually while at the same fostering the common goals and aspirations of all students.

Flexibility. The curriculum must be adaptable to the particular needs of different schools and communities. It must also be responsive to social and technological change and meet students' needs arising from that change process. In particular, the curriculum must encourage effective use of new technologies as tools for learning and production. The framework provides the means to balance what is common to the education of all students with the kind of flexibility and openness required for education in the 21st century.

Collaboration. Education is the shared responsibility of students, teachers, parents, tertiary educators and the community. Successful implementation of the curriculum framework requires a collaborative approach to planning by all concerned and a collective responsibility for students' achievement of the intended outcomes.

Philosophy
The philosophy of education used to guide the national educational reform recognizes the seminal role education plays as the foundation of society.   Society is served by education to the degree to which students are treated and treat others with respect, dignity, and core human values.

Effective education enables students to make connections between ideas, people and things, and to relate local, national and global events and phenomena. A holistic curriculum encourages students to see various forms of knowledge as related and forming part of a larger whole. While opportunities to specialize must be provided to allow for specific talents and interests, all students need a broad grasp of the various fields of knowledge and endeavor. They also need experience in building patterns of interconnectedness, which help them to make sense of their own lives and of the world.

Students develop and learn at different rates and in different ways, constructing new knowledge and understandings in ways that link their learning to their previous experiences. The developmental approach of a educationally sound curriculum framework accommodates these needs. At the same time, the framework provides students and their parents with a clear sense of the direction of students' learning, and through appropriate assessment and reporting procedures, of how students are progressing.

The specific components of an educational philosophy include many elements, the most important of which are summarized here in.

Curriculum
Curriculum philosophy is based on the belief that all students can learn and function successfully in society if given the appropriate pathway. The pathway for students to acquire these qualities is found in the curriculum;

therefore the curriculum is also an essential component in the foundation of education. The realization of each child's potential lies at the heart of the purpose and goal of all of curriculum policy and development.

Specifically, the philosophy related to curriculum development should ensure that students acquire mastery of basic learning in basic skills and the ability to think independently and critically. These outcomes should be ordered toward understanding and believing in the Azerbaijan way of life, to act democratically in their relationships with others, to develop in themselves attitudes of respect and helpfulness towards others, to want and to be able to perform well some portion of the work of the world, and to utilized the acquired knowledge and skills necessary to do this with satisfaction to themselves and society.

Teaching

Teaching is a professional activity that requires the recognition of both common likenesses as well as individual differences of students in order to engender achievement and progress towards the realization of the purposes and goals of the curriculum. Teachers must be committed to a student-centered relationship with their students in order to communicate the caring and respect necessary to lead the students down the path provided by the curriculum. This process must make their interactions with their students achieve meaningful learning; develop an appreciation for their country, and its language, culture, and community service experiences all framed within the context of a larger global perspective.

The most efficacious environment for the delivery of this curriculum is in modern facilities having current technological means available for students and teachers, small class sizes. The school environment promotes serving individual needs, self-respect, a strong work ethic, and a recognition of basic human values.

The following principles about learning and teaching are based on Azerbaijan national values and beliefs about the learning environment schools should provide and contemporary research and professional knowledge about how learning can be supported. As such, these principles should lead to school and classroom practices that are effective in helping students to achieve the outcomes in the curriculum framework: (a) opportunity to learn, (b) connection and challenge, (c) action and reflection, (d) motivation and purpose, (e) respecting individual differences and common needs, (f) independence and collaboration, and (g) supportive environment.

Learning

Essential to the process of learning is the exposure of students to experiences that allow them to gain an understanding of the sources of knowledge, an ability to search for and to create new knowledge, and evaluate the validity of that knowledge. A critical attitude towards knowledge and its truthfulness is further emphasized because as research in various fields continues, old knowledge has rapidly been replaced with new and more developed knowledge based upon research and resulting theoretical frameworks.

While teaching the content of the curriculum, the ultimate goal of learning is to understand the principles upon which the content is said to exist. When students achieve the ability to understand seminal principles and how to deduce from those principles, they become educated and achieve self-direction and life-long learning. This form of learning can be achieved by integrating the process-oriented curriculum with the outcome-oriented curriculum so that specific content and individual skills are not sacrificed in the process of understanding general principles.

Outcomes

Outcomes are the defined achievements expected of each student at different stages of the educational process. Outcomes provide both a guide for a suitable curriculum as well as identify areas appropriate for assessment.

Assessments

Assessment provides for judging the quality of education delivered to the students relative to the goals and expectations delineated in the curriculum. Both within and between assessments should be used with the first form of assessment, i.e., within assessment, based upon multiple classroom indicators. Within assessments provide information regarding the actual content of individual student achievement while between assessment provides for a rank or ordinal level of achievement relative to the population that has been used to establish the norm.

Crucial to the evaluation process is the understanding that evaluation serves to promote the students' growth in the direction of the objectives of the curriculum. The evaluation process contributes substantially to the continuous reform of education, particularly with respect to curriculum development and professional development for teachers.

The evaluation process must also contribute information back to the students and the students' families. This information is important information regarding the students' progress and essential to planning for future education and employment. Evaluation should always contribute to the well being of the person being evaluated.

Mission Statement
The mission statement assures that all students will acquire and demonstrate competencies in the areas of academic development, career development, and personal social development. Students will be educated in order to provide over their lifetimes the greatest opportunity to learn how to learn, how to work, and how to live in a productive manner consistent with human values and needs.

Vision Statement
The vision statement provides the future direction to which the present mission of the schools is to be ordered and directed. The vision appropriate to the national curriculum must be developed in order to meet the future needs of its citizens. This vision requires addressing the changes inherent in the global context of a national existence. The curriculum must provide an education that will foster the cognitive skills and attitudes that enable students to think critically, creatively, and constructively in order to establish and maintain a common bond among students, parents, administrators, teachers, staff, and community. This bond will be the seminal resource that provides our students and people with the ability to adapt to new situations and the ever-changing challenges of life.

Context of Curriculum Development
History
The history of curriculum development, design, theory, and practice provides the context in which this framework for curriculum development may be better understood. These topics are briefly discussed below.

Curriculum history deals with processes of describing, analyzing, and interpreting past curriculum thought and practice. By studying the past, it is possible to better understand the present as well as to profit from insights and approaches to problems that relate to similar circumstances today. History then places educators in a better position to analyze present conditions and chart future courses of action. Historical periods become the artifact of the historian's analysis: People don't live and events do not occur in neat chronological packages called "periods." Given this caution, an analysis of that century plus a decade of curriculum history seems to suggest that there were eight distinct eras, each with its own distinguishing features.

Date	Period
1890-1916	Academic Scientism
1917-1940	Progressive Functionalism
1941-1956	Developmental Conformism
1957-1967	Scholarly Structuralism
1968-1974	Romantic Radicalism
1975-1989	Privatistic Conservatism
1990-1999	Technological Constructionism
2000-present	New Privatistic Conservatism

These eras provide a way of examining the past century curriculum theory and practice that will facilitate an understanding based on an inquiry of what has occurred in the past. As described by Sarason (1990):

The significance of the historical stance is not only in what it tells us about the manifestations of a particular problem over time, or what one learns about the efficacy of remedial actions, but also in what one learns, about the systems quality-that is, the features of the system in which the problem arises and recurs, or remains constant but unremarked until it is seen [again] as destabilizing the system.

Curriculum Development
One of the most widely used labels in the field, sometimes taken to be synonymous with curriculum study itself, curriculum development, refers to the process of deciding what to teach and learn, along with all the considerations needed to make such decisions. Brought into full bloom in 1935 by Caswell and Campbell through their book entitled *Curriculum Development*, the term has been used in the titles of several of the most prominent curriculum texts: Stratemeyer et al. (1957); Smith, Stanley, and Shores (1957); Taba (1962); and Tanner and Tanner (1980). Each of these books symbolizes the vast array of consideration (historical,

philosophical, cultural, political, psychological, and economic) that needs to be taken into account in curriculum development. Moreover, each shows that all individuals in the process must be given careful attention, as well as the usual issues of purposes, content or learning experiences, organization, instruction, evaluation, and change.

Curriculum Design
Sometimes equated with curriculum development, curriculum design is usually more specific. The planning of curriculum guides, the analysis of instructional materials, the development of instructional of instructional units, the preparations of computer software, and the creation of instructional games and programmed learning materials all require attention to key elements of curriculum design: intent or objectives, content or activities, organization, and evaluation. The curricularist is concerned with design analyzes the consistency and congruence within and among each of these areas. Like Bobbitt, Tyler also placed an emphasis on the formation of behavioral objectives.

Since the real purpose of education is not to have the instructor perform certain activities but to bring about significant changes in the students' patterns of behavior, it becomes important to recognize that any statements of objectives of the school should be a statement of changes to take place in the students (Tyler, 1949).

These concerns translate into a nicely ordered procedure:

    Step 1. Diagnosis of need
    Step 2. Formulation of objectives
    Step 3. Selection of content
    Step 4. Organization of content
    Step 5. Selection of learning experiences
    Step 6. Organization of learning experiences
    Step 7. Determination of what to evaluate and the ways and means of doing it. (Taba, 1962)

The attraction of this way of approaching curriculum theory and practice is that it is systematic and has considerable organizing power.

Curriculum Theory
The organization of schooling and further education has long been associated with the idea of a curriculum. The idea of curriculum is hardly new, but the way it has been understood and theorized was altered over the years and there remains considerable dispute as to meaning. Curriculum has its origin in the running/chariot tracks of Greece, i.e., literally a course or a path. In Latin curriculum was a racing chariot.

A useful starting point for us here might be the definition offered by Kerr and taken up by Kelly in his standard work on the subject. Kerr defines curriculum as, "All the learning which is planned and guided by the school, whether it is carried on in groups or individually, inside or outside the school" (quoted in Kelly 1983; see also, Kelly 1999).

Glatthorn's (2006) four curriculum categories still hold up to scrutiny today and continue to help provide a road map for curriculum theory. Nonetheless, Smith (1996, 2000), author of "Curriculum Theory and Practice", Encyclopedia of Informal Education developed his own categories for understanding curriculum development. Smith's approaches are listed as follows: (a) Transmission of Information: Curriculum as a body of knowledge to be transmitted via a syllabus, (b) End Product: Curriculum as an attempt to achieve certain ends (product), (c) Process: Curriculum as a process, and (d) Praxis: Curriculum as a praxis (action that is committed). Further investigation into these approaches to curriculum theory may be enhanced in light of Aristotle's (1976) influential categorization of knowledge into three disciplines: the theoretical, the productive, and the practical.

In the late 1980s and the 1990s many of the debates about the national curriculum for schools did not show much concern how the curriculum was thought about as to what its objectives and content might be. The work of two American writers, Franklin Bobbitt (1918, 1928) and Ralph W. Tyler (1949), dominated theory and practice within this tradition. In the *Curriculum* Bobbitt writes as follows:

    The central theory [of curriculum] is simple. Human life, however varied, consists in the performance of specific activities. Education that prepares for life is one of that prepares definitely and adequately for these specific activities. However numerous and diverse they may be for any social class they can be discovered. This requires only that one go out into the world of affairs and discover the particulars of which their affairs consist. These4 will show the abilities, attitudes, habits, appreciations and forms of

knowledge that men need. These will be the objectives of the curriculum. They will be numerous, definite and particularized. The curriculum will then be that series of experience which children and youth must have by way of obtaining those objectives. (1918)

A lasting impression on curriculum theory and practice has been made by Tyler. (1949) He shared Bobbitt's emphasis on rationality and relative simplicity. His theory was based on four fundamental questions:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether these purposes are being attained?

Curriculum theory has many forms that may be derived from overarching philosophies, for example, pragmatism, idealism, realism, existentialism, phenomenology, scholasticism, and critical theory. Curriculum theory is often characterized as either prescriptive or descriptive. Prescriptive theory asks what is worthwhile to know, how it is known to be worthwhile, and how can its worth be justified? Prescription deals with the realm of *ought*. Descriptive theory deals with the realm of *is*; taking the cue from empirical science, descriptive theorists ask how can reality be modeled so that its salient features are known, thus enabling explanation.

Curriculum theory can also be interpreted as the act of clarifying meanings and the uses of language. Still another notion of curriculum theory refers to the act of theorizing and reflecting. Finally, a process known as *metatheory*, i.e., the comparative study of different conceptions of theory and categories used by theorists, provides an additional methodology by which to investigate curriculum theory (Schubert, 1986).

Curriculum Practice
The nature of curriculum theory appears to be a culmination of functions and approaches. The concept of schooling and education has long been associated with the idea of curriculum and curriculum theory. With no definite comprehensive theory that covers the field, a great deal of argument and discussion occurs in the field as to what curriculum theory is and what it is not.

To understand the concept of theory, it is essential to understand the nature of theory in general. A curriculum theory is a set of related educational concepts that affords a systematic and illuminating perspective of curricular phenomena. Thus, curriculum theory is a strange amalgam, and one finds a number of different orientations to it. As an overall position, Kliebard (in Lavatelli et al, 1972) stated well the general purpose of curriculum theory and its relation to curriculum studies:

The field of curriculum is devoted to the study and examination of the decisions that go into the selection of what is taught. Implied in such a study is the notion that curriculum may be planned with basic principles in mind. These principles, when they are reasonably consistent and coherent, constitute the essence of curriculum theory.

> Theory, philosophy, scientific basis, and assumptions are too often thought of as authoritative and controlling agents. Practice is too frequently viewed by scholars and administrators as the passive reception and implementation of wisdom from high places. Wisdom, compassion, and prudent judgment in the course of action by those who are intimately familiar with the situation are considered here to be of equal importance with theory that emanates from outside sources (Schubert, 1986).

Curriculum, as praxis, is a development of the process model. Praxis models deal primarily with practical deliberation and differentiated curriculum. Through the use of technological advances, curriculum leaders can access a body of knowledge, formulate content that is interdisciplinary, and provide a process of electronic communication that helps cut across cultural, economic, and social boundaries worldwide. The praxis concept encourages the student and teacher to reach a higher level of awareness through curriculum differentiation and with the use of technology to speed up the process. Curriculum differentiation is a broad term referring to the need to tailor teaching environments and practices to create appropriately different learning experiences for different students.

> Critical pedagogy goes beyond situating the learning experience within the experience of the learner: it is a process which takes the experiences of both the learner and the teacher and, through dialogue and negotiation, recognizes them both as problematic…

[It] allows, indeed encourages, students and teachers together to confront the real problems of their existence and relationships…..
When students confront the real problems of their existence they will
soon also be faced with their own oppression (Grundy, 1987).

Technology

John Dewey can be thought of as the grandfather of Constructivism. Constructivism is an approach to teaching based on research about how people learn. Constructivism says that learners bring their personal experiences into the classroom, and these experiences have a tremendous impact on their views of how the world works. Learners construct understanding or meaning by making sense of their experiences and fitting their own ideas into reality. Children construct thoughts, expectations, and explanations about natural phenomena to make sense of their everyday experiences. Constructivists believe that actual learning takes place through accommodation, which occurs when students change their existing ideas in response to new information. (Schulte, 1996) Constructivism allows students to learn by asking questions and forming their own opinions.

Dewey was closely related to the Progressive Education Movement. Dewey believed curriculum should arise from students' interests. He favored a pedocentric strategy for education. Curriculum topics should be integrated rather than isolated from each other. To Dewey, education meant growth, a way of helping students understand and fulfill their roles in society. Today's interdisciplinary curriculum and hands-on methods utilizing technology are consistent with Dewey's belief about education. Dewey would approve of the use of technology in today's education because of the means by which technology engages the students.

Seymour Papert, a famous pupil of Jean Piaget, has profoundly influenced the field of educational technology. Papert came up with the idea of "logo," a programming language that allowed children to see cause and effect relationship between programming commands and the pictures that result. Logo is not used today but it did lead the way for the use of new technology methods.

Howard Gardner is a constructivist who attempts to define the role of intelligence in learning. He defined eight types of intelligence, which are linguistic, musical, logical-mathematical, spatial, bodily-kinesthetic, intrapersonal, interpersonal, naturalist. According to his theory, teachers should seek to learn the types of intelligences students have in order to effectively maximize their learning abilities individually. His theory works well with the trend toward using technology to support group work.

The advent of new media, such as the Internet and hypomedia, has brought about not only technological innovations, but also provides new ways of approaching learning and instruction. The use of technology also promotes investigative skills, makes learning more exciting, provides opportunities to apply knowledge, and prepares students for an increasingly technologically advanced world. Through a type of diffusion theory and process, technology is changing how we think of curriculum and how we think of education. (Leigh, 2003)

Technical advances are allowing teachers to move the focus of curriculum to thematic units that emphasize an interdisciplinary approach, an integrated learning approach, and encourage effective habits in mind. According to Hirsch (as cited in Unit Curriculum Theory, 2003):

> To give all children a chance to take advantage of the new technology means not only seeing to it that they have access to the technology, but also ensuring that they possess the knowledge necessary for them to make effective use of it.

Glatthorn (2006) utilized future theory to help explain curriculum development as follows:

> Future theorists can help describe, explain, and predict the teaching and learning process. They can also help provide the constructs necessary for analyzing proposals, illuminating practice, and guiding reform. In addition, they can help in developing strategies to transmit knowledge via a syllabus, focus on an end product, state and demonstrate a process of learning, as well as provide praxis by fostering a more dynamic milieu in the technological global classroom of the future. More important, they can provide dynamic models of teaching and learning that can elicit educational change worldwide. The key, then, is for future curriculum theorists to elicit an educational change via technology on a global scale that will allow us to develop new and meaningful ways of improving awareness and understanding throughout the world. (P. 99).

When viewing the potential of technology in the classroom of tomorrow, Howard Gardner (Scherer, 1999) probably said it best: "I believe that the computer revolution is already changing how students acquire and use information; if our schools do not rise to their technological opportunity and challenge, they risk becoming completely anachronistic."

Support Structure
The support structure necessary for the initiation, development, implementation, and ongoing refinement of a national level of curriculum development must include at least the following components: (a) curriculum council, (b) policy and approval process, (c) strategic plan, (d) curriculum center, and (e) professional development.

Curriculum Council
Curriculum development is generally overseen in the United States by a curriculum council. This council is responsbile for ensuring that the curriculum is developed in a way that is consistent with the philosophy, mission, and vision of the educational system for which the curricululm will serve. The purpose, membership, and functions of a typical curriculum council, specifically that of the Missoula, Montana School District (2006) is as follows:

Purpose
The Curriculum Council provides the development and implementation of a curriculum framework for schooling, taking account the needs of students, sets out the knowledge, understandings, skills, values and attitudes that students are expected to acquire; provides the development and accreditation of courses of study for schooling, and provides the assessment and certification of student achievement.
Membership

Membership consists of certified teaching and administrative staff. Membership is not less than 14 and consists of at least teachers from all grade-levels, administrators of all grade-levels and Director of Instruction and School Board Members. The council is chaired by two council members. The co-chairs chair meetings, facilitate discussions, plan meeting agendas, work with the Director of Instruction, report to the District Administrator and carry out other duties necessary to accomplish the previously stated Curriculum Council goals. Co-chairs agree to serve a two (2) year term, with one (1) co-chair being elected each year. The incoming co-chair begin duties at the first meeting in May.

The Curriculum Council will be a standing committee. The people on this committee may change from time-to-time, but each of the areas of membership must be represented at all times.

Functions
The following functions are assigned to the Curriculum Committee:
1. Consider new/revised programs and courses of study for the school, including interdisciplinary ones;
2. Consider recommendations to adopt instructional materials;
3. Consider recommendations to purchase program support that assist curriculum implementation;
4. Articulate curriculum development and textbook adoption recommendations at all levels;
5. Hear and respond to reports and recommendations regarding the use of human and material resources and facilities;
6. Hear and respond to reports of assessment of student achievement;
7. Hear and respond to reports of assessment of curriculum implementation;
8. Generate own proposals and solutions to curricular problems;
9. Make compromises among various proposals and solutions;
10. Synthesize recommendations that relate or overlap;
11. Set and make revisions to the curriculum cycle;
12. Consider impact on graduation requirements affected by changes in curriculum;
13. Review implementation of curriculum;
14. Report findings to the sections.

Policy and Curriculum Development
Definition of Policy
Policy is a political process where needs, goals, and intentions are translated into a set of objectives, laws, and programs, which in turn affect resource allocations, actions, and outputs, which are the basis for evaluation, reforms, and new policies.

Purpose of Policy
1. To enunciate the framework within which the school district operates. Regulations are provided to ensure the implementation of policies.

2. To provide the basis for consistent responses by the school administration to questions that arise in the operation of the schools

The following steps are found at the school district level in a typical educational policy development model:

1. Define the Issue or Problem
2. Gather Necessary Information on the Issue
3. Recommendations from Superintendent
4. Discuss and Debate at the Board Level
5. Draft Policy
6. Hold First Reading
7. Make Revisions
8. Hold Second Reading
9. Adopt the Policy
10. Distribute to the Public
11. Oversee Policy Implementation
12. Policy Evaluation and Revision or Modification

Policies are the principles adopted by the School Board to chart a course of direction for the district. They are broad enough to indicate a line of action to be taken by the administration; they need to be narrow enough to give the administration clear guidance.

Adoption of new policies and or revision of existing policies are solely the functions of the Board. From time to time, the Board of Trustees may amend, revise, change, or cancel certain policies. The Board of Trustees reserves the right to do so at any time. Nothing herein contained shall be construed to constitute a contract between the school district of the Board of Trustees and any individual, and none of the previsions of these policies or rules are intended to confer any special contractual right or privilege upon any person.

The basic responsibility for recommending new policies or policy modifications rests with the Superintendent. New policies or changes in existing policies may be proposed by any board of Trustee member, staff member, student or resident of the school district. Policies may be developed by the Policy Committee that may be the vehicle assigned to develop new or revise existing policies. The Board of Trustees shall adhere to the following procedure in considering and adopting policies to ensure that they will be examined before the final action.

Execution of adopted policies is delegated to the Superintendent who will implement the policies through the development of administrative regulations and procedures. In the absence of policy, the Superintendent is responsible for making appropriate decisions and is to notify the Board of Trustees of the absence of policy. Policy does not become a policy until all steps have been completed.

The Strategic Plan
The Strategic Plan sets out the school's directions for the next three to five years, expressed through goals and objectives. Strategy is a general framework that provides guidance for actions to be taken and, at the same time, is shaped by the actions taken. This means that the necessary precondition for formulating strategy is a clear and widespread understanding of the ends to be obtained. Strategic planning is important to curriculum development in order to proceed in an orderly and efficient manner.

The Curriculum Center
Prior to independence (1991) the concept of "curriculum" didn't exist in Azerbaijan education system as a pedagogical term. Now curriculum is understood and accepted as a conceptual document describing organization and implementation of all activities related to the learning process in Azerbaijan schools (in the present context, general schools). As described above Azerbaijan has undertaken a major reform program in the education sector, and more specifically in general education. The ESDP is focused on these reforms, and national curriculum reform is at the heart of the effort. In this regard, a Curriculum Center (CC) has recently been established at the Institute for Education Problems. The newly established CC has personnel with many of the capabilities required for output-oriented curriculum development, rationale of inclusion of each of the subjects in the curriculum, development of educational standards and design of teachers' guides on various learning methods. As related to

the overall curriculum framework (policy and concepts), the Ministry of Education wishes to focus on international best practices, while preserving its own strengths in general education. Personnel capabilities at the Curriculum Center, and within relevant units of the Ministry of Education, must be developed so the efforts with regard to development of curriculum framework (policy and concepts) can be undertaken with confidence.

Professional Development
Grant provides a definition of professional development that includes the use of technology to foster teacher growth:

Professional development …goes beyond the term "training" with its implications of learning skills, and encompasses a definition that includes formal and informal means of helping teachers not only learn new skills, but also develop new insights into pedagogy and their own practice, and explore new or advanced, understandings of content and resources. [This] definition of professional development includes support for teachers as they encounter the challenges that come with putting into practice their evolving understandings about the use of technology to support inquiry-based learning… Current technologies offer resources to meet these challenges and provide teachers with a cluster of supports that help them continue to grow in their professional skills, understandings, and interests. (Citation unavailable)

High quality professional development supports education reform. Professional development is most effective when it is accessible to all educators and is part of a system-wide effort to improve teacher recruitment, selection, preparation, licensing and certification, and ongoing development and support. Strong professional development programs benefit from partnerships among schools, higher education institutions, and other appropriate entities to promote learning opportunities for all those who affect student achievement and combine resources to address diverse educational needs. Essential to this process is the recognition of the critical role teachers and other educators play in ensuring that all students achieve at high levels.

Effective professional development is: (a) directly focused on helping to achieve student learning goals, (b) supporting student learning needs, (c) differentiated, (d) school-based and job-embedded, (e) collaborative in planning and implementation.

The mission of professional development is to support increased student achievement, provide relevant curriculum materials and training for teachers, support staff, and administrators, offering academic services for parents and community members, coordinating and promoting leadership and extracurricular activities for students.

Learning Areas
The curriculum development process, having the appropriate philosophy, mission, and vision, now begins to apply these principles specifically to each individual area of study to which the students will be exposed. These areas include: (a) the arts, (b) English, (c) Health and Physical Education, (d) languages, (e) math, (f) science, (g) society and environment, (h) history, and (i) technology.

Language Arts
Language arts provide students with the skills necessary to learn about their world and the essential knowledge necessary to appreciate cultural aspects of their world. All students need to be skillful in language arts to learn successfully in school, to become productive members of society, and to achieve their full potential through life-long learning.

English as a second language
The English language increases the opportunity of students to interact with other peoples, to understand their culture, it can help them be open-minded, sensitive, well-educated citizens, and world languages learning develops the skills, and habits essential to the learning process creative inquiry, and critical thinking. It can help students participate more fully in the global community and marketplace.

Mathematics
"Mathematics helps children construct understanding of mathematical concepts and develop connections between their informal knowledge and the abstract symbolism of mathematical concepts." (Hunsader, 2004)

We live in a mathematical world. In such a world mathematical competence opens doors to productive futures, but a lack of mathematical competence closes those doors. Students need to learn a new set of mathematics basics that enables them to compute fluently and to solve problems creatively and resourcefully.

Science
Science is a way of making sense of increasing student understanding in the area of science processes and the nature of science. Learners bring their personal experiences into the classroom, and these experiences have a tremendous impact on their views of how the world works. Students come to learning situations with variety knowledge, feelings, and skills, and this is where learning should begin. This knowledge exists within the student and is developed as individuals interact with their peers, teachers, and the environment.

Social Studies
Social Studies is the integrated study of the social sciences to prepare young people to become responsible citizens. Responsible citizens display social understanding and civic efficacy.

Physical Education
Physical Education teaches students to add physical activity to their daily lives and exposes students to content and learning experiences that develop the skills and desire to be active for life. In addition, physical activities play an important role in improving muscular strength, endurance, and flexibility. Physical activity helps children establish gain a sense of self-respect and achieve goals they have set for themselves.

Technology
Technology is the key to be successful in our increasingly technological world. In our rapidly changing world, the economic vitality of communities and individuals will depend more and more on the ability to access information, build knowledge, solve problems, and share success.

Because technology will increasingly play a great key role in this process, students must develop the necessary skills to use computers capably while they are in school. This means that today's student must be prepared now for the technological world that will be a very real part of their lives in the future.

Summary
The heart of education is each child who is served by educators. The process of curriculum development is very time consuming and expensive; yet, nowhere is time better spent or investments better realized than improving the education and lives of today's youth. This investment is multiplied from generation to generation with the goal of providing for the constant improvement of common good one student at a time.

Appendix
The appendix appropriate for the curriculum development process includes acknowledgments, support documents, national educational statistics, and contact information for appropriate educational officials. This information is available and therefore included in the appendix at the conclusion of the development process.

Post Script
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