Theoretical Perspectives and Current Challenges of OBE Framework

Saima Shaheen

COMSATS University Islamabad, Pakistan

e-mail: saima@vcomsats.edu.pk

Abstract- *Outcome-Based education (OBE) is a performance-based approach for the curriculum development, a future-oriented learner-centered 'Empowerment Paradigm' that empowers and endorses all learners with future success. It is an influential and tempting way of restructuring and reorganizing engineering education. Washington Accord, an International accreditation convention, an independent agreement between signatory organizations to provide an external accreditation to undergraduate engineering programs. The accredited engineering programs that qualify an engineer to enter into the practice of professional engineers are equally recognized and acknowledged by other signatory countries and responsible organizations Pakistan Engineering Council (PEC) is a full signatory to the Washington Accord and a regulatory organization for the accreditation of engineering programs in Pakistan. To keep up the permanent membership status, it is the requirement of PEC to implement Outcome-Based in engineering degree awarding institutes in Pakistan. The main aim of Outcome-Based education in engineering education is to empower engineering students with the essential characteristics required to switch themselves into the engineering profession as a global and professional engineer. The focus of current research is to explore the philosophical and theoretical underpinnings of Outcome-Based education. Moreover, to unveil the current challenges in the implementation of OBE framework in engineering education.*

***Keywords** – Challenges, Engineering Curriculum, Outcome-Based Education, Theoretical Perspectives, Washington Accord,*

Introduction

Outcome-Based education is a basic shift from 'Educentric Paradigm' to a future-oriented learner-centered 'Empowerment Paradigm' that empowers and endorses all learners with future success (Spady 1998; p.10). While discussing 'the Power of Paradigms' Spady (1998; p.01) defines that 'paradigm' basically denotes our viewpoint, outlook, vision and perception of the world and what we consider as factual, feasible, or enviable. Paradigm figure out the ways of thinking, belief systems, customs of families and companionship groups, culture, recognized professional and public organizations and even more the societies as a whole (p.1). Educentric Paradigm is one characterized by what the system is, and has been in Industrial Age, more willingly, than by what it should be and could be if the real purpose and the main concern is the learner's learning and forthcoming success in the Information Age (Spady 1998; p.10).

Spady (1998) calls this paradigm shift as 'Systemic' and elaborates that systemic paradigm shifts alter the manner and the way chief systems operate, the aims they achieve, and the structures they form. Hence such paradigm shifts are transformational in nature and they can alter the basic nature of everything recognized and done in the past (p.3). Spady (1998) also calls this paradigm, a learning success paradigm as it ensures learning success for all learners, and it is student-focused, success-based, outcome-oriented, all-encompassing, extensive, brain-accustomed, systemic, and a holistic paradigm (p.19).

Outcome-Based Education (OBE) is promoted worldwide to renew the educational system and many countries including United States of America, New Zealand, Philippines, South Africa, Canada (and many other countries) have implemented OBE at their countries (Malan 2000; p.22). Rest of the countries has different responses to OBE including most favorable to controversial and less recommended one.

122

Learning outcomes are the substantial employment of what was learned. They are the obvious learning consequences that we intend our learners to do or exhibit at the completion of learning activity (Spady, 1994; p.2). Proponents of Outcome-Based Education (OBE) advocate that an outcome is a meaningful and successful manifestation of learning experience that takes place at or after the completion point of a set of learning experiences or a segment of the curriculum. Outcomes act as the main organizers of all the academic programs and courses (Spady and Marshall, 1991; p.70).

Spady (1994) further mentions that when tutors and instructors keep the true outcomes in focus and pay attention to them, they are forced to pay attention towards what learners learn 'during' the learning experiences, to 'after' the learning experiences, from isolated pieces of performances to final utilization of previous learning practices and experiences (p.38).

According to Spady (1994; p.1-3) in Outcome-Based Education system, every aspect is mainly organized and focused on exit outcomes or culminating outcomes which are significant for all learners to meet successfully at the terminal point or completion of learning activities and experiences. For the Outcome-Based Education system, first and the foremost significant task is to develop clear and obvious exit outcomes or program learning outcomes (PLOs) and course learning outcomes (CLOs). These outcomes are central to any OBE system upon which all aspects and elements of the education system revolve around (p.1). Moreover, to create the situations and prospects in the education system that allows and stimulates all the learners to meet those vital outcomes. For the development of outcomes, educators should use clear action verbs instead of using ambiguous or concealed demonstration processes. Outcomes characterize the eventual and final result that is required from learning (p.2). Usually, an outcome strategy entails insertion of traditional 'definers and shapers' in a subsidiary place which may include time, curriculum, processes, programs, procedures etc. (P.3).

The purpose of current research study was to explore the answers to the following research questions.

Q. What are the theoretical underpinnings of Outcome-Based education?

Q: What are Outcomes and how are they derived and stated?

Q. What are the current challenges to OBE implementation in engineering education?

OBE differentiates itself from conventional teaching by rejecting unnecessary focus on inputs, time allocations and content advocating the importance of exit outcomes (PLOs and CLOs), stressing on successful attainment of cognitive, psychomotor and affective level skills by all learners indiscriminately, and criterion-referenced assessment which is pre-mapped with CLOs and ultimately with PLOs or desired culminating outcomes.

Spady (1994; p.6-7) mentions that exit outcomes act as a well-defined and well-structured framework upon which Outcome-Based systems form their foundational roots. Time is considered as a flexible resource, can be adjusted based on learners' needs or instructors' requirements. In this strategy benchmarks and standards are well described, criterion references and are made available for all learners (p.6). Moreover, Outcome-Based Systems pay attention to enhanced learner's learning and eventual performance ability and skills to their highest levels when students leave the school (p.7). OBE emphasizes to have high expectations for self-sufficient, creative and, independent learners' attributes. In OBE, the role of a teacher is not to provide solutions to problems but to help in facilitating the students to discover the solutions themselves, not to give them fish, but to train them in fishing.

OBE is growing at an amazing rate specifically for engineering programs throughout Pakistan, during the past decade. Accreditation of engineering programs by Pakistan Engineering Council cannot be entertained unless engineering programs are administered through a system of Outcome-Based education. To run the engineering programs under the umbrella of OBE, curriculum, instruction, and assessments are aligned with the Course Learning Outcomes and the Program Learning Outcomes.

Alignment of Curriculum with Exit Outcomes

Alignment refers to a straight forward match among all the components of an education system. These components may include; the exit outcomes, the curriculum, the teaching process and, the assessment process (Spay 1998; p.68).

The exit outcomes include the performance goals or outcomes for a subject area, the curriculum and the teaching methods that directly align and match the outcomes defined for a subject (CLOs) or predefined outcomes for that specific program (PLOs). Assessments are completely aligned with each CLO and PLO. Assessments may include assignments, quizzes, graded discussion boards, projects, sessional papers (midterms) and terminal examinations. Each and every quiz question, assignment problems/questions, projects, exams questions for midterms or terminal exams are aligned with CLOs and PLOs of that subject and program through a process of CLO/PLO mapping in the form of a chart.

Three Types of OBE

OBE originated through the research work of William G. Spady (1988) and his contemporaries. Spady and Marshall (1991, p.67-72) describes three types of OBE designs which bring about sequential changes. According to Spady (1988; p.5), Outcome-Based Education refers to organize all results, founding on our teaching and instruction stressing on the achievement of desired exit outcomes.

Three types of OBE are designated as 3Ts (traditional, transitional and transformational).

1- Traditional OBE
2- Transitional OBE
3- Transformational OBE

Traditional OBE

In general, traditional OBE persuades educators to take their prevailing curriculum content and structure and set up outcomes (Spady and Marshall 1991). Then align the outcomes with curriculum, instruction, and assessment. Spady and Marshal (1991) identifies that the application of OBE principles aligned with instructional approaches leads to a major increase in learning success.

Transitional OBE

Transitional OBE lies in between traditional and transformational OBE regarding its scope and purpose. Transitional OBE is principally concerned with learners' ultimate abilities at the time of graduation and surrounds curriculum and assessment underneath higher order outcomes (Spady and Marshall, 1991: p.69).

Transformational OBE

According to Spady and Marshall (1991; p.70), the main focus of transformational OBE is to equip each learner with the skills, knowledge, attitude, and orientations required for the success in life. Competent future citizen is the focus of this approach. This approach is founded on the premise that it will equip the learners to transfer the achieved success to daily life to fulfill the intricate challenges of technologically advanced future. Hence future driven exit outcome becomes the limelight for the transformational OBE.

Key Elements of OBE

Spady (1994; p.8) describes the following elements of Outcome-Based Education:

a. Paradigm (one)
b. Purposes (two)
c. Premises (Three)
d. Principles (Four)
e. Practices (Five domains)

Spady (1994; p.8) illustrates the elements of OBE in a pyramidal form placing paradigm at the top and practices at the bottom. He further makes distinctions by dividing the pyramid into five divisions and subdivides each component further in a way to represent five key elements with sub-elements.

Paradigm

Spady (1994) states that an inspiration that is inherent in the OBE paradigm is that all students coming out of the education system should be truly successful learners (p.8).

Purposes

Two key purposes reflect the notion "success for all." These purposes are:

1- All learners are provided with the knowledge, skills, competencies, and traits required to succeed after they exit schooling.

2- Structure and functioning of schools should be in a way that assists in achieving the maximum outcomes for all learners (Spady 1994; p.9).

Premises

Premise 1: Learning and success for all students

The first premise considers a variety of students' rates of learning and varying learning styles not as obstacles, but as an issue that must be catered while designing and constructing instructional procedures (p.9).

Premise II: Learning success leads to more learning success.

The second premise takes into account the earlier success of learning while learners have a well developed cognitive basis and the psychomotor basis of the previous success of learning. The institutions that pay more attention towards strengthening of both foundational bases, successful learning becomes easier for the learners of such schools (p.10).

Premise III: Learning success is straight away influenced by those conditions, which are in command of institutions (schools).

The schools and institutions that practice Outcome-Based Education act as agents who can stimulate all learners to pursue successful learning achievement. If the institutions and schools select to execute required alterations, modifications, and changes, they may operate more differently.

Principles

i. Clarity of Focus
ii. Expanded Opportunity
iii. High Expectations
iv. Design Down

Implementers of Outcome-Based Education use the principles of OBE in different ways ensuring consistency, applying systematically, innovatively and concurrently (p.11).

▢ Clarity of Focus

The first principle of OBE is the Clarity of Focus, which means that keep the clarity in the limelight of exit outcomes. This principle assists the instructors to ascertain a clear picture of intended learning so that learners are able to display and demonstrate those outcomes through their performance. Similarly, instructional planners, designers and evaluators keep student achievement success at first priority concern. A clear-cut picture of outcomes acts as the starting point for curriculum and instructional planers, implementers. OBE philosophy admits that the desired outcomes are timely shared and explained to the learners necessarily on first day of instruction and persistently later on so that no doubts and surprises are left (p.11).

▢ Expanded Opportunity

Important features of expanded learners opportunities for the sake of successful learning are learning and teaching time, different strategies and methods of instruction, executing rules and principles, benchmarks/criteria for

124

performance and access to curriculum and its structure (p.12).

⬚ High Expectations

The third most important principle of OBE is High Expectations from learners. This principle entails that students should be presented with more and more challenging tasks and the difficulty level should be increased. Moreover, the least acceptable criteria for performance should also be raised. Spady (1994) presents examples and shows that high expectations of raised standards, eliminating success quotas, and maximizing access to more challenging curriculum changes, a school's learning atmosphere, and culture (pp. 16-17).

⬚ Design Down

Design Down principle informs the educators and implementers of OBE to start the instructional planning by keeping the ultimate exit outcomes in mind. Spady (1994; p. 18) identifies three extensive categories of outcomes; culminating/exit outcomes, enabling outcomes and discrete outcomes. Culmination/exit outcomes refer to the broad category of outcomes formulated for all students at the exit point or completion of learning experiences, mostly at the program level. e.g. For engineering programs, Washington Accord has identified twelve attributes that all students must have at the end of engineering education programs. They may be termed as Program Learning Outcomes PLOs.

Learning Theories and OBE

OBE takes its roots from behaviorism. Wilson, A. (1994: pp.1-2) in her book used both terms Performance-Based/Outcome-Based Education synonymously. Behaviorist theories of learning are based on the conditional reflexes of Classical Conditioning of Ivan Petrovich Pavlov and Programmed Instruction/Instrumental Conditioning mainly originated through the works of B.F. Skinner and E.L. Thorndike. Pavlov was a Russian Psychologist while Skinner and Thorndike were American Psychologists. The main thought of accentuating educational objectives was put forth by Tyler in 1949 (Tyler 1949 as stated in Morcke et al. 2012; p.852). Another American educational psychologist, who significantly influenced the educational system, is Benjamin Bloom who was one of Tyler's prior Ph.D. students. Bloom and his colleagues developed a classification of educational goals and published Taxonomy of Educational Objectives: Handbook I, in 1956. This was the collaborative work of a committee of thirty members including examiners, curriculum developers, and teachers.

According to the Merriam Webster's Dictionary Taxonomy refers to the classification of plants and animals based on their natural relationships. Initially, the proposal of classification system was floated in 1948 at APA Convention in Boston. A theoretical framework was formulated for building curricula and tests (Bloom et al. 1956: p.4). Instructors, educators, curriculum developers, examiners, evaluators, and research workers from all over the world greatly consult this taxonomy for the promotion of higher levels of thinking in education, curriculum development, and assessments. OBE was promoted and advocated initially in the 1970s with the Mager's instructional objectives (Mager 1997), Bloom's mastery learning (Bloom 1968), and Gagne's instructional design (Gagne and Briggs 1974).

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Three domains or categories of Educational Objectives have been identified as Cognitive Domain (dealing with cognition and intellect), Affective Domain (dealing with emotions, feelings and beliefs) and Psychomotor Domain (dealing with skills). Cognitive Domain refers to the development of knowledge base and intellectual skills accompanying six levels starting from lower order thinking to higher order thinking level. Revisions of this Taxonomy by his students mainly Lorin Anderson, David Krathwohl and few others have brought some changes regarding ordering and changing nouns to verb form. New versions of Bloom's taxonomy swap Synthesis level with Evaluation level putting synthesis at the highest level of thinking. Moreover, new versions explain these categories of Cognitive Domain in verb form not as nouns. These are Remembering, Understanding, Applying, Analyzing, Evaluating, and Synthesizing. All of the assessments in OBE are completely aligned with any of the domains of Bloom's Taxonomy.

Outcome-Based rather than Time-Based

Outcome-Based paradigm is characterized, centered, managed and organized around culminating outcomes. These final exit manifestations of learning concurrently work as central point, aim, basic rationale, principle priority, end product, and initiating point for all that takes place in a system. These may comprise of; devising and developing the curriculum; to involve in instructional delivery, assessments, accounting learners achievement, standards for learners progression and ultimate decision making, employing the personnel and configuring resources and time (Spady 1994; p.36).

This new paradigm of Information Age is all about learning. Perelman, L. (1998) describes in his book School's Out! that the outdated and outmoded structures of old high schools, their curricula, and processes act as obstructions and barriers toward the success of the learners in the Information Age (Perelman, L. 1998, as in Spay 1998; p.69). Technologies allow anyone to learn anything at any time from anywhere while old Educentric Iceberg paradigm is unable to do the same job. It needs particular students to learn particular content in a particular classroom at a particular time schedule (Spady 1998, p.69).

Assessments in OBE

Macayan (2017; p.4) defines assessment on the strength of Angelo (1995; p.7) as a continuing process intended to comprehend, recognize and humanize learning of the students. It makes our hopes and associated expectations for students learning overt and public; framing suitable norms and benchmarks for the high quality of learning; to

125

collect, explore, deduce and interpret substantiation systematically to find out how better the performance go with those hopes and benchmarks; and employing resultant information to document, expound, and further improve performance (p.4)

Crespo et al. (2010) indicate that assessments help in recognizing the students' achievement of desired knowledge, intended skills and required competencies (p.7). According to Macayan (2017) Assessment plays a significant part in education. It acts as a tool to find out learning progression of learners and helps to identify gaps and inherent opportunities for more development and improvement (p.4).

Assessment based on learning outcomes leads towards the search for particular resources for assessments acquiescent with identified knowledge gaps and modified capacity-building programs (Crespo et al. 2010; p.7). The eventual aim of the assessment is to authenticate the outcomes of learning. The purpose of OBE is to evaluate the proficiencies and competencies of students as a whole in their entirety. It applies a 'holistic approach' while explaining the competencies of students in the form of knowledge, values, skills and finally assessing all competencies by applying various assessment strategies (Malan S. P. T., 2000; p.26).

According to Williamson (2000), there are three variables upon which the success of learning experiences is assessed. These concepts are competence, competency, and performance. A competent performer is usually termed as a successful student (p. 21). Morcke et al. (2012) found that OBE presents a sound rational foundation for designing and developing competency assessments predominantly those that measure and assess overt and explicitly observable behaviors (p.861).

Pakistan Engineering Council and Washington Accord: A Way Forward

The Washington Accord is an independent agreement between signatory organizations to provide external accreditation to undergraduate engineering programs. The accredited engineering programs that qualify an engineer to enter into the practice of professional engineers are equally recognized and acknowledged by other signatory countries and responsible organizations (like Pakistan Engineering Council etc.). Washington Accord sets a peer review process over a period to assure the substantial equivalency of engineering programs and consistency of outcomes with defined and published professional standards/ graduate attributes among the signatories (25 Years of the Washington Accord, 2014; P.9)

Pakistan Engineering Council (PEC) is a regulatory organization for the accreditation of engineering education and programs. The PEC Act 1976 (revised 2011) has established Engineering Accreditation Board EAB, delegated the tasks related to accreditations and monitoring the development and quality of engineering programs in Pakistan. The focus of Pakistan Engineering Council and Engineering Accreditation Board is to adhere to the accreditation criteria, to develop procedures, to communicate the standards and criteria, to state different considerations, and to determine various standards of engineering education (Manual of Accreditation, 2014; p.2). The first visit of nominators of Washington Accord at Pakistan was in January 2010 and Pakistan Engineering Council got provisional status for accrediting engineering programs in June 2011. First and second Reviewer visits were in November 2016 and Jan. 2017. Pakistan Engineering Council became a full signatory of Washington Accord in June 2017 at Anchorage, Alaska, USA.

The main aim of Outcome-Based education in engineering education is to empower engineering students with the essential characteristics required to switch themselves into the engineering profession as a global and professional engineer. However, achievement of this aim requires more substantial efforts for the academic world to include both hard technical skills, as well as the assessment of soft non-technical skills (Rajaee et al. 2013; p.4-5). Here comes a challenge for academicians to assess soft skills which are not directly observable and hard to measure. Soft skills are related to the affective domain and may include project management skills, lifelong learning skills, social responsibilities, and ethics. Soft skills can be inculcated through collaborative projects, assignments, and case studies. However, measurement of soft skills is quite difficult as compare to cognitive and psychomotor skills. A very dominating report by Cooke et al. (2010) robustly advocating OBE in medical education, pointed out two unsettled concerns of OBE. First was related to the definition and assessment of humanism, accountability, and selflessness. The second was how to endorse brilliance when competencies and proficiencies are aimed at "good enough" performance (Talbot 2004 as in Horcke et al. 2012; p.854). The first issue was resolved by Spady (1994) by simply eliminating the affective domain from the setting of educational outcomes. Spady (1994) suggested that the elements of the affective domain should be incorporated in goals rather than outcomes.

Current Challenges in the Implementation of OBE Framework

Challenge # 1: Acceptability Challenge

Educationists, instructors, students, and their parents will have to play their special roles to make OBE successful. Learners will have to take greater responsibility for self-regulated learning and active participation in teaching and learning process. For the Implementation of Objective-Based Education, a major challenge lies in its acceptability in comparison to traditional approach (Malan 1990; p.28).

Challenge # 2 : Paradigm Shift

The actual challenge lies for administrators to shift a school from the conventional mode of instruction to the latest mode of Outcome-Based instructional mode. For this thorough training, stimulation and continuous monitoring of OBE implementation procedures are required (King and Evans, 1991; p. 75).

126

Challenge # 3: Maintain Quality of Education

Malan (1990; p.28) states that educational planners and curriculum designers owe the responsibility of providing conducive learning atmosphere and settings, ensuring perfect, consistent, and valid evaluation and assessment procedures so that quality of education does not suffer and students are well prepared for life after schooling or for higher education.

Challenge # 4: Restructure Outcomes and Assessment techniques

A real challenge that the implementers of OBE are facing today is how to viaduct the huge space present between conventional teaching and assessments and the true and intricate displays of students' competencies that they have to exhibit after leaving the classroom. Educators are now forced to restructure outcomes and their measurement just shifting their focus from bottom zone of the mountain to the apex of the mountain (Spady, 1994; pp.65-66)

Challenge # 5: OBE as Top Precedence

It is very important to make the Outcome-Based Education the top precedence of the next decennary by assimilating the willpower and all reserves to make the Outcome-Based Education successful (King and Evans, 1991; p. 74).

Challenge # 6: 'Design Down' Approach

A substantial effort is required by curriculum designers and developers to 'design down' starting from culminating outcomes to program learning outcomes to specific course learning outcomes for every learner (King and Evans, 1991; p. 74).

A substantial effort is required while designing culminating outcomes PLOs or course learning outcomes CLOs. If designed PLOs or CLOs are vague, unclear, or not stated as demonstrable action verbs, may lead to confusion and distractions which will be eminent during curricular development, implementation and assessment phase. Formation of clear, specific, measurable, and realistic statements of outcomes is a challenging task.

Challenge # 7 : Impacts on Students with Special Needs

The teaching insinuations of an Outcome-Based education entail consideration towards the enhancement and improvement, the impacts on students with specific needs and evaluation and assessment procedures of students' progression (King and Evans, 1991; p. 74).

Challenge # 8: Teachers' Role

Proper measurement of several significant outcomes makes the teachers' role crucial and radical of performance assessment (King and Evans, 1991; p. 75).

Challenge # 9: Responsibility for the successful learning

OBE articulates what we consider significant and valuable in educational learning episodes and commending relevant resources to impart life in learners until they all achieve success. Hence, OBE practitioners are held responsible for the successful learning achievement of all students who enter school (King and Evans, 1991; p. 74).

Challenge # 10: Break Typecast

A great challenge lies in the contravention of the stereotype that is deeply rooted in the thinking and processes of old Educentric Iceberg paradigm of Industrial Age (Spady 1998; p.73).

Challenge # 11: Wave of Opposition

Another biggest challenge is the preparation to cope up with the wave of opposition that has been established against School (educational enterprise) to work (Spady 1998; p.73).

Challenge # 12: Perception of Students and Teachers

Rajaee et al. (2013) noted that the perception of learners and instructors towards OBE is a big issue and challenging for faculty members (p.6).

Challenges for OBE in Pakistan

A great challenge lies in the implementation of Outcome-Based education throughout the whole curriculum at tertiary, post-secondary, secondary and elementary levels. In Pakistan, implementation of OBE for all levels, all over the country and has multiple issues and challenges. So far, implementation of OBE is prevalent in tertiary education only for engineering programs. For the rest of the higher education programs, execution of Outcome-Based education is either delayed or under consideration. In future, computer sciences and medical education may undergo a progressive curricular change or reform to meet the requirements of OBE if the implementation of Outcome-Based education is made obligatory by accreditation and regulatory bodies like Pakistan Medical and Dental Council (PM&DC) and Higher Education Commission HEC.

Therefore, in Pakistan implementation process of OBE observed a top-down approach starting from top level of higher education or tertiary education. Successful implementation of OBE in engineering programs and success rate for the achievement of desired exit outcomes need to be explored through exhaustive research studies supported by empirical data.

Implementation of OBE for engineering programs is in its transitional stage. I hope that upon the maturation of OBE procedures an obvious shift from transitional OBE to transformational OBE is expected with the passage of time.

Implementation of Outcome-Based education at secondary or elementary level is voluminous issue and challenge to be catered at national, provincial, division, district and area school levels. Multiple school systems including public schools, semi-government schools, private schools, technical and vocational education schools, and deeni madaris are operational throughout the country. Awareness of Outcome-Based education and stepwise implementation of OBE procedures up to the grass root level or starting from grass root level up to post-secondary and tertiary levels (following bottom-up approach), relevant training of all stakeholders, curricular alignment with exist outcomes, related teaching methodologies, outcomes assessment procedures, and acceptability challenges are still there to address and deal with.

127

Content-based and objectives driven curriculum is prevailing in Pakistan for post-secondary, secondary and elementary level. Content developed in 2006 as mentioned in Mahmood & Aziz (2018) presently prevailing in Pakistan and revisions are in progress (p.67). Present National Education Policy (2017) although talks about competencies, skills, knowledge, and attitude, yet a great emphasis is placed on objectives and inputs. Although National Qualification Framework NQF for Higher Education in Pakistan 2015 developed by the Higher Education Commission HEC defines outcomes for undergraduate levels (Associate degree-level 5, Bachelors-level 6, Masters-level 7) and Graduate level (PhD-level 8) yet its proper implementation in all Higher Education Institutions and universities still needs workable solutions and a great deal of empirical research to support evidence of its effectiveness. Pakistan Engineering Council an Accreditation body for engineering programs in Pakistan seems to be the one implementing OBE procedures and processes in a true sense. Rest of the accreditation bodies and boards of education need to take their stances towards this paradigmatic shift and evolve procedures for the designing and proper implementation of OBE procedures at all levels including, graduate, undergraduate, higher secondary, secondary, elementary and pre-primary levels. By defining exit outcomes for all levels, and incorporating this OBE approach in curricular elements like program and course learning outcomes, learning content, instructional delivery methods, and assessment procedures, this goal can be achieved.

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