



*Sociology & Cultural Research Review (SCRR)*  
*Available Online: <https://scrrjournal.com>*  
*Print ISSN: 3007-3103 Online ISSN: 3007-3111*  
*Platform & Workflow by: [Open Journal Systems](#)*



## **Role of Accreditation Bodies (HEC, PEC, NAEAC) in Promoting Outcome-Based Education (OBE) in Pakistan**

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### **ABSTRACT**

*Outcome-Based Education (OBE) has emerged as a transformative approach to align higher education with global standards and industry demands, particularly in Pakistan. This article examines the pivotal role of accreditation bodies the Higher Education Commission (HEC), Pakistan Engineering Council (PEC), and National Agricultural Education Accreditation Council (NAEAC) in promoting OBE across Pakistani institutions. By establishing standardized frameworks, these bodies mandate measurable learning outcomes, curriculum redesign, and industry-aligned assessments to enhance graduate employability and institutional quality. However, the implementation of OBE faces significant challenges, including resistance from traditional education systems, insufficient faculty training, disparities in disciplinary adoption, and weak industry-academia collaboration. The article highlights how accreditation bodies address these barriers through policy guidelines, faculty development programs, and rigorous monitoring mechanisms. Recommendations for strengthening OBE include fostering deeper institutional collaboration, expanding faculty training initiatives, integrating technology for outcome tracking, and institutionalizing industry partnerships. The study underscores the need for systemic reforms to ensure sustainable OBE adoption, positioning Pakistan's higher education system as globally competitive and responsive to labor market needs.*

**Keywords:** Outcome-Based Education (OBE), accreditation bodies, Higher Education Commission (HEC), Pakistan Engineering Council (PEC), National Agricultural Education Accreditation Council (NAEAC).

### **Introduction**

Outcome-Based Education (OBE) is a student-focused program that stresses a particular learning outcome and guarantees graduates knowledge, skills and competencies necessary in the employment and society (Spady, 1994). In as much as the traditional education systems are based on the delivery of content, OBE is based on accountability and continuous improvement in higher education through attainable results (Biggs & Tang, 2011). The paradigm shift has found an international momentum especially in engineering, agricultural,

and professional fields because it has filled in the gap that existed between the academia and industry demand (Harden, 2007). In Pakistan, the OBE implementation has become a necessity to match the international standards, increase the employability of graduates, and raise the position of the institution (HEC, 2019).

Higher Education Commission (HEC), Pakistan Engineering Council (PEC) and National Agricultural Education Accreditation Council (NAEAC) are the main accreditation entities in Pakistan that are in charge of preserving the quality of education and enhancing OBE (HEC, 2020). HEC and PEC as well as NAEAC are in charge of general higher education whereas engineering and agricultural programs are in the area of focus of HEC and PEC respectively. These agencies are the ones that put accreditation systems in place, perform institutional reviews and require OBE institutions to be followed in order to make the program achieve predetermined learning outcomes (PEC, 2021; NAEAC, 2018). Their work is also essential in the normalization of curricula, faculty development and evaluation practices, hence, establishing a culture of excellency and relevance within the Pakistani academia (Malik & Iqbal, 2020).

This article is meant to examine the role of HEC, PEC, and NAEAC in the deployment of OBE in Pakistan. Though the focus on OBE has increased, issues associated with the resistance to OBE by faculty, the lack of training, and unstable implementation exist (Khan et al., 2022). This study will identify contributions of these accreditation bodies by studying the policies, guidelines, and support mechanisms offered by them in a bid to transform the education system in Pakistan to OBE. It also aims at establishing gaps and suggesting recommendations aimed at enhancing the use of OBE in different disciplines (Ali & Khan, 2021). The importance of this discussion is that it can provide information to policy makers, teachers and stakeholders on how accreditation agencies have been instrumental in the development of OBE. The connection between the standards of accreditation and the implementation of OBE is of primary importance as Pakistan is trying to improve its educational performance in the global context (Shah et al., 2023). The article is useful in terms of its contribution to the existing literature because it presents a thorough investigation of the institutional mechanisms that trigger OBE, thus providing information that can be used in the future in terms of higher education reforms in Pakistan (Ahmad & Malik, 2022).

### **Understanding Outcome-Based Education (OBE)**

Outcome-Based Education (OBE) is a teaching paradigm, which focuses on well-defined learning results, by ensuring that students learn particular knowledge, skills, and competencies at the end of a program (Killen, 2021). OBE in contrast with traditional approaches to learning has a student-centered focus in that curricula, instruction and assessment planning are done backward by first identifying the desired outcome (Biggs, 2014). Major OBE ideas are the transparency of results, the adaptability of study routes, and the constant enhancement of the educational process by means of the iterative feedback (Harden, 2018). The accreditation organizations like the Washington Accord and ABET promote OBE because it is compatible with the international standards, especially in the field of engineering and technical studies (ABET, 2022). In Pakistan, the move to OBE is characterized by the requirement to increase the employability of graduates and the achievements of international accreditation standards (HEC, 2023).

In contrast to the traditional education systems where success is determined through inputs (e.g. lectures hours, textbooks) and processes (e.g. standardized exams), OBE focuses on outputs which are shown in the competencies of the students (Malan, 2020). Conventional systems usually emphasize the teacher-centered model of teaching in which fixed syllabi do not allow much flexibility in the learning process, and OBE promotes autonomous learning and individualized speed (Freeman et al., 2017). As an example, an engineering program in the context of OBE may have an outcome such as designing sustainable infrastructure, which can be evaluated using real-life projects, but in the traditional systems, the focus may be on theoretical tests (PEC, 2022). The critics say that OBE is associated with considerable faculty training and institutional reorganizations, but its advantages in terms of supporting critical thinking and problem-solving overshadow these difficulties (Khan et al., 2023).

OBE has its advantages to students, institutions and industries. To students, OBE improves transparency because the learning objectives are clearly defined which allows self-guided learning (Shum & Crick, 2020). The institutions have the advantage of better accreditation results because OBE is compatible with the quality assurance systems such as the ones of HEC and PEC (NAEAC, 2021). In the case of industries, OBE provides graduates with job-ready skills and minimizes the training gap (World Bank, 2022). An analysis of Pakistani universities have shown that the programs adopted OBE reported 20 percent graduate employment because of the increased industry-academia cooperation (Ali & Raza, 2023). Besides, iterative feedback loops in OBE enable the institutions to develop curriculum using stakeholder feedback to achieve relevance in the long term (AAC&U, 2021). Since the economy of Pakistan requires quality professionals, OBE is acting as an activator of educational change and international competitiveness (UNDP, 2023).

### **Overview of Key Accreditation Bodies in Pakistan**

Higher Education Commission (HEC) is the governing body of higher education in Pakistan, which is in control of quality assurance and accreditation of institutions (HEC, 2023). HEC was founded in 2002, and it develops national education policies, checks the standardization of curriculum and supports research excellence. One of the major points in the mandate of HEC is the use of Outcome-Based Education (OBE), which obliges universities to match the programs with the predetermined learning outcomes (Khan & Malik, 2022). HEC is engaged in the institutional review, the training of faculty, and the comparison of Pakistani degrees with the international standards, including the Washington Accord (HEC, 2023). The enforcement of OBE compliance by HEC will increase employability of graduates and guarantee the academic programs to fulfill the needs of global competitiveness (Ahmad et al., 2021).

Pakistan Engineering Council (PEC) is the body that oversees the education of engineering and its professional licensing, requiring compliance with OBE in order to accredit the programs (PEC, 2023). The accreditation system of PEC focuses on industry-related skills, which means that engineering institutes must prove that students have specific measurable outcomes (Ali & Hassan, 2022). According to PEC requirements, courses should include an element of practical training, design projects, and ongoing evaluation as a requirement of international standards such as ABET (PEC, 2023). Through OBE promotion, PEC will close the gap between the academia and industry because graduates will have skills that employers need (World

Bank, 2022). The current changes have enhanced the position of PEC on accreditation of engineering programs, which promotes innovation and quality assurance (Khan et al., 2023). National Agricultural Education Accreditation Council (NAEAC) is the organisation that provides quality to agriculture education (NAEAC, 2023). NAEAC proposes assessments to programs depending on learning outcomes, research relevance, and industry connections in order to align the curriculum to the country agricultural requirements (Raza & Iqbal, 2022). Enforcing the implementation of OBE, NAEAC increases the level of preparedness of graduates in agribusinesses, research, and policymaking (FAO, 2023). The council also works with the global agencies such as ICAR to benchmark the Pakistani agricultural degrees (NAEAC, 2023). NAEAC advocates the idea of sustainable agriculture and agricultural technological advancement using OBE (UNDP, 2022).

### **The Role of Accreditation Bodies in Promoting OBE**

#### **Setting OBE Standards & Guidelines**

The accreditation bodies in Pakistan namely the Higher Education Commission (HEC), Pakistan Engineering Council (PEC) and National Agricultural Education Accreditation Council (NAEAC) are playing a critical role in outlining Outcome-Based Education (OBE) frameworks to achieve education relevance and quality. These agencies set up elaborate standards, which formulate anticipated learning results, curriculum development concepts, and evaluation techniques in line with the best international practices (HEC, 2023). As an example, the OBE framework implemented in HEC focuses on the creation of the measurable and industry-relevant program educational objectives (PEOs), program learning outcomes (PLOs), and course learning outcomes (CLOs) (Khan & Aslam, 2022). Equally, PEC has embraced the standards of the Washington Accord, which involves the need of engineering programs to exhibit graduate attributes in problem-solving skills and ethical responsibility (PEC, 2023). NAEAC is oriented towards agricultural competencies, and it requires the programs to include practical skills in management of crops, food security, and sustainable farming processes (NAEAC, 2022). These common frameworks make the institutions consistent but provide the possibility of discipline-specific modifications (Malik et al., 2023). These accreditation bodies are assisting in changing the higher education system in Pakistan, which is content-oriented to outcome-oriented by establishing specific OBE benchmarks, which in turn equips the graduates more adequately to meet the workforce requirements (World Bank, 2023).

#### **Accreditation Process & OBE Compliance**

The implementation of the OBE has been accredited, which implies a thorough process of evaluation procedures by the HEC, PEC, and the NAEAC to determine the institutional compliance. First, institutions have to perform a self-assessment with respect to stipulated OBE criteria, and how their programs relate to outlined outcomes (HEC, 2023). This is then accompanied by a descriptive submission with curriculum maps, evaluation devices and proof of ongoing advancement mechanisms (Ali & Raza, 2022). The on-site visits in accreditation entail the visitation of the accreditation teams to ensure implementation, who interview faculty, students and industry partners to validate the achievement of the outcomes (PEC, 2023). The PEC also demands that in engineering programs, the design projects and industry partners should be presented to show how they will solve real-world problems (Khan et al., 2023). NAEAC assesses the agricultural programs according to the use of modern technologies and their adaptation to the needs of national food security (NAEAC, 2022). A full accreditation

process usually lasts 12-18 months, and the institutions are given either provisional accreditation, full accreditation, or conditional accreditation depending on the degree to which they comply with the rules (HEC, 2023). This sequenced way of doing things will see OBE implementation being comprehensive and sustainable and not just a tick-box exercise (Ahmad et al., 2023). The ones that do not meet standards receive improvement plans and schedules of re-evaluation (UNDP, 2023).

### **Training & Workshops for Faculty**

In their attempts to achieve successful implementation of OBE, Pakistan accreditation bodies have developed elaborate training programs since they appreciate that faculty must provide buy-in and be capable of effective implementation. HEC organizes regular national workshops on the design of OBE curriculum, outcome assessment and rubric development, which are typically together with international experts (HEC, 2023). PEC has developed specific faculty development centers where certification programs in OBE pedagogy is provided to engineering educators with focus on the active learning strategy and industry-focused assessment (PEC, 2023). NAEAC also conducts agriculture-specific training of agricultural faculty on competency-based teaching approaches and precision agriculture technologies integration (NAEAC, 2022). Such programs have already prepared more than 5,000 faculty members in the country since 2020, and the quality of OBE implementation has been enhanced significantly (Malik & Iqbal, 2023). The training modules prioritize practical experience and necessitate the redesigning of course contents and evaluation tools in the course of the workshops (Khan et al., 2023). Also, accreditation organizations have created online libraries of OBE materials, such as example syllabus, assessment rubrics, and case studies (HEC, 2023). In order to be sustainable, trained faculty are regularly appointed as OBE champions in their institutions charged with the role of mentoring other faculty and serving as chair of curriculum review committees (World Bank, 2023). This all-inclusive method of faculty development has played a vital role in breaking the barrier of change and institutional capacity development of OBE (UNDP, 2023).

### **Monitoring & Continuous Improvement**

Accreditation organizations also have strict monitoring mechanisms to help guarantee continued use of OBE even after initial compliance. HEC asks schools to provide annual progress reports that include the results of outcome achievement data, curriculum changes, and feedback on stakeholders (HEC, 2023). PEC also performs surprise audits of the engineering programs where they look at the student portfolios and employer satisfaction surveys as an outcome attainment check (PEC, 2023). NAEAC has established an online tracking system, in which agricultural institutions post findings in graduate employment rates and research findings in real-time (NAEAC, 2022). These institutions also host review conferences every two years during which institutions provide an improvement plan on the basis of the assessment results (Malik et al., 2023). The monitoring process is more focused on the loop closure - curriculum revision and teaching methods base on the outcome data (Khan & Aslam, 2022). To illustrate, when the employer feedback signifies the lack of communication skills, the programs should show how they have improved the corresponding coursework or tests (World Bank, 2023). Those institutions with outstanding compliance are awarded and their accreditation renewal faster (HEC, 2023). On the other hand, the ones with continuous deficiencies can be suspended with a fine such as probation or withdrawal of



accreditation (PEC, 2023). With this strong mechanism of accountability, OBE will be dynamic and flexible to the needs of the education sector and industry (UNDP, 2023). With the continuous improvement requirement, great improvement in graduate quality has been achieved, as recent surveys indicate that 25 percent more employers are satisfied with OBE-program graduates than traditional program graduates (Ahmad et al., 2023).

### **Challenges in Implementing OBE in Pakistan**

Outcome-Based Education (OBE) implementation in Pakistan is met by strong opposition to the established traditional education systems based on the content delivery rather than the outcomes of learning (Ahmed & Malik, 2023). A large number of elderly faculty members and administrators who have worked decades within traditional lecture-based systems perceive OBE as an unwarranted interference that introduces unnecessary bureaucracy and does not offer evident advantages (Khan et al., 2022). Such opposition is in passive non-compliance, with institutions using OBE language on paper and continuing to use traditional instructional and assessment practices (HEC, 2023). The cultures of the departments that value more theoretical knowledge than practical competencies also contribute to this problem, especially in the humanities and the pure sciences fields (Ali & Raza, 2022). A recent 2022 survey of 50 Pakistani universities showed that 62 percent of faculty considered OBE documentation requirements to be burdensome, and 45 percent of faculty confessed that they had not significantly altered their teaching practices as the result of OBE requirements (PEC, 2023). This institutional inertia is further aggravated by the absence of a penalty in case of non-compliance, with accreditation agencies having difficulty in being consistent in the enforcement of the standards across the diverse higher education terrain of the country (World Bank, 2023). The reluctance is especially high in the universities of the public sector, where bureaucracies and strict promotion systems do not foster pedagogical creativity (UNDP, 2023).

One of the most significant obstacles on the way to successful OBE implementation is the overall lack of adequately trained faculty and the resources required to support OBE on an institutional level (Malik & Iqbal, 2023). Although accreditation organizations such as HEC and PEC organize the workshops, they are accessed by only a small part of about 100,000 higher education faculty in Pakistan (HEC, 2023). Institutions in rural areas have certain difficulties, and 78 percent of them have no OBE training history in three years (NAEAC, 2022). Trained faculty members also do not have support systems in many cases, with no teaching assistants and novel assessment tools to follow through on OBE (Khan & Aslam, 2022). The resource limitation is acute, and most institutions do not have a learning management system to track outcomes, standardized bank of rubrics, or the technological capacity to conduct authentic assessments (Ahmad et al., 2023). The issue is self-perpetuating - the faculty without OBE methodologies training is not able to design or evaluate learning outcomes effectively, which results in ineffective implementation that supports the beliefs that OBE is not valuable (PEC, 2023). To add to this, high teaching workloads (usually 18-21 credit hours per semester) do not allow much time to redesign the curriculum, with 67 percent of faculty in a 2023 survey naming teaching workload as their main obstacle to OBE implementation (World Bank, 2023). Surface-level compliance will remain the rule in the real OBE implementation without any systemic reform to the faculty development and the distribution of resources (UNDP, 2023).

The mismatch between the demand of the industry and the academic program outputs poses a major problem to the meaningful implementation of OBE (Ali et al., 2023). Although accreditation organizations require the industry to be consulted in curriculum design, in reality, such collaborations can be found to be superficial with only 28 percent of the programs engaging in a rigorous needs assessment with the employers (PEC, 2023). Most panels in the industry tend to be dominated by big organizations that fail to reflect on the economy of Pakistan that is mainly small to medium enterprise (HEC, 2023). This leads to undifferentiated learning outcomes that can not meet individual region or sector requirements (Khan & Hassan, 2022). This disparity is acute in the emergent areas such as artificial intelligence and renewable energy where the academic coursework is 3-5 years behind the work in the sector (Malik et al., 2023). The problem is worsened by assessment practices - although a practical approach to problem-solving is appreciated in industries, the assessment practices within many institutions continue to favor theoretical examinations in OBE frameworks (NAEAC, 2022). According to a 2023 tracer study, a minority (41 percent) of engineering graduates believed that their education was ready to face real world problems of work (PEC, 2023). There are no standardized methods of constant industry feedback and programs are unable to iteratively adjust to improve results as 65 percent of institutions survey employers only when they renew their accreditation (World Bank, 2023). The inability to change in this static manner is a weakness of OBE as a whole, whose premise is responsiveness to the needs of the stakeholders (UNDP, 2023).

The implication of OBE principles across the academic fields in Pakistan is abysmal and leads to mismatches in the quality of education and graduate skills (Ahmed & Raza, 2023). Relatively better advancements have been achieved with professional courses such as engineering and medicine because of the existence of powerful accreditation organizations (PEC and PMDC respectively) that push OBE requirements to the extreme (Khan et al., 2023). Humanities and social sciences, by contrast, have a problem with defining the outcomes, and they tend to include such unmeasurable and vague goals as understanding cultural concepts (HEC, 2023). In STEM disciplines, the challenges vary - learning outcomes can be better defined, but hands-on assessments, due to the abundance of resources required, are often not feasible due to the size of the classes and a shortage of resources (Malik & Iqbal, 2023). Another extreme can be seen as vocational and technical education in which OBE is occasionally narrowed down to simple lists of skills without the development of competencies (NAEAC, 2022). Such differences in disciplines cause confusion in institutional quality assurance procedures, and 73 percent of universities have been found to have trouble with applying consistent standards of OBE across the faculties (World Bank, 2023). The situation is further worsened by the accreditation agencies being discipline-specific and not operating in a unified system - e.g. business education is handled by HEC instead of a specialized council (PEC) and thus OBE is enforced less effectively (UNDP, 2023). Unless there is discipline-sensitive design that takes into consideration such differences and still adhere to the main concepts of OBE, there will be unbalanced implementation of OBE in the higher education sector of Pakistan (Ahmad et al., 2023).

### **Future Recommendations**

In order to address the existing implementation issues, the accreditation organizations in Pakistan (HEC, PEC, NAEAC) have to institute stronger collaboration frameworks with the

institutions of higher learning. This necessitates the next step going past periodic accrediting visits to establish joint permanent committees that can keep track of OBE growth and help solve the implementation roadblocks in real-time (Khan & Aslam, 2023). Those committees ought to involve subject matter specialists that would assist in extrapolating generic OBE standards into the subject-specific applications within various disciplines, including engineering, social sciences, etc. (Ahmad et al., 2023). In line with this structural change, there is an urgent need to have a national faculty development program. Instead of a single workshop, the institutions are encouraged to introduce the OBE certification program which will be mandatory to all teaching staff and should include micro-credentials in certain skills, such as rubric design and outcome assessment (HEC, 2023). Such programs must be provided on blended learning platforms to make them widely accessible and especially to the faculty operating in remote regions (World Bank, 2023). However, most importantly, the working policies of the faculty need to be changed to ensure that the OBE-related curriculum development is accepted and rewarded as an official duty and promotion condition (UNDP, 2023). Pakistan may use the example of Malaysia and India where the reduction of teaching loads (usually 30-50%) is provided to the faculty members who take charge of OBE transformation in their department (Ali & Raza, 2023).

The industry-academia gap should be bridged by institutionalising the structured engagement mechanisms, as opposed to the ad-hoc type of consultation. Industry Advisory Boards (IABs) must be created in all academic programs involving required SME and startup representation as well as representation of the public sector employers, not just those of large ones (PEC, 2023). Such boards must hold quarterly meetings to discuss curriculum maps, assessment data, and the performance of graduates, and have binding authority to suggest course corrections on the spot (Malik et al., 2023). In the case of technical fields, accreditation organizations may require that between 30-40 percent of the course material be codesigned and codelivered by industry professionals especially during final year projects and capstone classes (NAEAC, 2023). At the same time, Pakistan needs to speed up the process of adoption of technology in managing OBE. They should also come up with a coherent national platform of learning outcomes that shall integrate with the current LMS systems to be able to track student achievement in real-time relative to program outcomes (HEC, 2023). One can use artificial intelligence tools to assess the data at scale, detect patterns of the achievement of the outcomes, and forecast curriculum holes (Khan et al., 2023). In case of skills based disciplines, augmented reality simulations and virtual labs are to be paid on subsidized terms to mitigate the infrastructure drawbacks that occur at resource-scarce institutions (World Bank, 2023).

In the long run, OBE success demands fixing systemic obstacles by doing long-term policy makings and investment. Accreditation agencies are encouraged to introduce different timelines of compliance, with disciplines that have already designed the frameworks of outcomes (such as engineering) being able to progress and offering longer timeframes of support to areas that have difficulties conceptualizing the OBE (UNDP, 2023). A national OBE innovation fund may encourage institutions to design innovative solutions to implementation issues, and grants will be provided to such projects as cross-institutional outcome benchmarking or industry-connected assessment design (HEC, 2023). More importantly, the system of financing higher education in Pakistan should be reorganized to take into



consideration the resource requirements of OBE - the existing per-students funding arrangements do not include the costs of outcome assessment systems, industry partnerships, and technology infrastructure to support successful implementation (World Bank, 2023). Last but not least, a National OBE Observatory could be developed to gather and share the best practices, carry out longitudinal studies concerning graduate outcomes and offer evidence-based policy advice (Ali et al., 2023). Such changes in structure and the aforementioned suggestions on faculty growth and industry involvement would allow Pakistan not only to adopt OBE but also become a leader in the outcomes-based education transformation in the region (Malik & Iqbal, 2023).

### Conclusion

The shift to Outcome-Based Education (OBE) in Pakistan is an important measure to bring higher education in the country to international standards and in line with the demands of the industry. Although the accreditation agencies such as HEC, PEC, and NAEAC have established the foundation upon which OBE is to be implemented, several issues include faculty reluctance, lack of resources and disciplinary discrepancy still exist. The combination of these barriers should be addressed through the multi-pronged approach, such as more effective collaboration between institutions and accreditors, extensive faculty training, enhanced industry participation, and the incorporation of the technology in order to keep track of the outcomes. Implementing these recommendations, Pakistan can change its education system, where not only the requirements of accreditation would be fulfilled but also the graduates could be provided with skills and competencies required in a fast-changing workforce. Finally, the ultimate success of OBE in Pakistan will be determined by the presence of systemic changes that will focus on long-term sustainability rather than immediate compliance. Institutions need to go beyond the concept of superficial adoption and bear in mind that OBE is a philosophy that can bring an improvement to teaching quality, student learning, and employability of graduates. By collaborating with policymakers, educators and other stakeholders in the industry, Pakistan will be able to conquer the existing difficulties and create an education system that will be dynamic, responsive and competitive across the globe. The process of complete OBE integration can be complicated, yet its possible outcomes, better academic quality, industry connections, and student achievement make it an inevitable and desirable process of higher education of the country in the future.

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