

Accreditations of Engineering Programs in India: A comparative study of ABET EAC and NBA accreditation

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Abstract

This review paper compares and contrasts the accreditation processes of the Accreditation Board for Engineering and Technology (ABET) Engineering Accreditation Commission (EAC) and the National Board of Accreditation (NBA) in India. Both organizations play a crucial role in ensuring the quality and relevance of engineering education, but they differ significantly in their scope, criteria, and procedures. The paper analyzes the key differences between the two systems, including their focus on outcomes, emphasis on international standards, and approaches to program evaluation. The paper also discusses the potential benefits and challenges associated with each accreditation system and explores the implications for engineering education and the global competitiveness of engineering graduates. This paper deals the key aspects of a review paper comparing ABET EAC and NBA accreditation for engineering programs. It highlights the key differences in their focus, with ABET emphasizing international standards and NBA prioritizing the Indian context and industry needs. The paper analyzes the specific criteria used by each organization to evaluate programs, including curriculum content, faculty qualifications, research and innovation, and student outcomes. It further compares the different stages and procedures involved in their accreditation processes, such as self-study reports, on-site evaluations, and decision-making. The review paper discusses the potential benefits and challenges associated with each system, considering their impact on program quality, international recognition, and graduate employability. Finally, it explores the implications of these accreditation systems for engineering education in India and the global competitiveness of Indian engineering graduates. This concise overview emphasizes the significance of comparing these two prominent accreditation systems.

Keywords: ABET Accreditation, Higher Education, NBA Accreditation, Engineering Programs,

Introduction

Engineering education in India has a rich history, tracing its roots back to the ancient period with advancements in fields like metallurgy, architecture, and hydraulics. In the modern era, it witnessed significant growth, particularly after independence, with the establishment of numerous engineering colleges and institutions. However, challenges persist. Outcome-Based Education (OBE) represents a major advancement in how engineering is taught in India. This student-centered approach emphasizes learning outcomes rather than just covering course content. OBE has been used internationally since the 1990s, and India's adoption of OBE was a direct consequence of its commitment to the Washington Accord [1]. A large number of engineering graduates face unemployment or underemployment due to a mismatch between skills acquired and industry demands [2]. The focus often remains on theoretical knowledge, neglecting practical skills and industry exposure. The future of engineering education in India holds immense potential. By focusing on industry-academia collaborations, promoting research and innovation, and incorporating emerging technologies like AI and machine learning into the curriculum, India can produce a skilled workforce capable of driving

technological advancements and economic growth [3]. In the era of globalization and rapid technological advancements, ensuring the quality and relevance of engineering education is paramount. Accreditation agencies play a crucial role in upholding these standards, guaranteeing that graduates possess the necessary knowledge, skills, and ethical values to contribute meaningfully to society [4]. Accreditation of engineering programs is a rigorous process of evaluation to ensure that academic programs meet the high standards set by the engineering profession. There are four major international agreements that focus on different aspects of technical education [5]:

Washington Accord: This accord specifically addresses engineering programs. It's an agreement between various countries' accreditation bodies, recognizing the equivalence of their engineering degree programs. This means that graduates from programs accredited by a member country are generally accepted as meeting the academic requirements for engineering practice in other member countries. This fosters international mobility for engineers.

Sydney Accord: This accord focuses on engineering technology programs at the bachelor's degree level. Similar to the Washington Accord, it aims to facilitate the international recognition of these programs and the qualifications of their graduates.

Dublin Accord: This accord targets engineering technician programs at the associate degree level. It promotes the mutual recognition of qualifications for engineering technicians among its member countries.

Seoul Accord: This accord specifically deals with computing programs. It operates similarly to the other accords, aiming to ensure the international recognition of computing degrees and the qualifications of their graduates.

These accords play a crucial role in promoting international cooperation and mobility in the field of technical education. They help to ensure that graduates from different countries with equivalent qualifications are recognized and can pursue professional opportunities globally.

The accreditation process typically involves:

Self-Study: The institution conducts a thorough self-evaluation of the program.

On-Site Visit: A team of experts visits the institution to assess the program in person.

Evaluation and Decision: The accrediting body reviews the self-study report and on-site visit findings to determine the accreditation status of the program.

Accreditation is a continuous process of improvement, ensuring that engineering education remains relevant, rigorous, and prepares graduates to meet the challenges of the future.

This research paper undertakes a comparative analysis of two prominent accreditation bodies: the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET) in the United States and the National Board of Accreditation (NBA) in India.

Both ABET and NBA employ rigorous evaluation processes to assess the quality of engineering programs, focusing on student learning outcomes, curriculum effectiveness, and faculty qualifications. However, their specific criteria and approaches may differ significantly.

This work aims to:

Compare and contrast the accreditation criteria and processes employed by ABET EAC and NBA, examining their strengths, weaknesses, and areas of convergence.

Analyze how the accreditation standards of both agencies align with the United Nations' Sustainable Development Goals (SDGs). This involves investigating how the accreditation criteria promote the development of graduates who can contribute to sustainable solutions for global challenges like climate change, poverty, and inequality.

Explore the potential for collaboration and knowledge sharing between ABET EAC and NBA to enhance the quality of engineering education globally and better equip graduates to address the challenges of the 21st century.

This research will provide valuable insights for policymakers, educators, and stakeholders in engineering education, fostering a deeper understanding of the role of accreditation in shaping the future of the engineering profession and its contribution to a sustainable and equitable world.

Literature Review

ChatGPT's [6] emergence has significantly impacted higher education, prompting discussions on its benefits and challenges. Literature suggests potential advantages like personalized learning and enhanced engagement, alongside concerns about academic integrity, bias in AI-generated content, and the need for assessment method revisions. Ethical considerations, including intellectual property, data privacy, and equitable access to AI, are also prominent. Research is underway to evaluate the effectiveness of AI-powered text detection tools in identifying AI-generated content. This review highlights these key themes, providing a foundation for further investigation into best practices for ChatGPT's integration into higher education. General process for developing engineering programs that seek accreditation from the Accreditation Board for Engineering and Technology (ABET) are discussed [7]. The ABET Criteria establish Student Outcomes (SOs) - the knowledge, skills, and behaviour's students gain through the program curriculum. Programs define their own SOs to achieve Program Educational Objectives (PEOs), which outline the career goals for graduates. Assessment and evaluation of SOs and PEOs serve as the foundation for verifying program effectiveness in meeting these objectives. This paper delves into a detailed development process applicable to establishing and accrediting new and existing Bachelor of Science (B.Sc.) Engineering programs under the ABET Criteria 2014. The process emphasizes the iterative nature of program development, where PEOs, SOs, and curriculum are adjusted based on assessment results. This ensures continuous improvement and alignment with ABET accreditation requirements. This paper investigates the evolution of sustainability-related criteria in professional accreditation of chemical engineering programs [8]. It examines the requirements of several professional bodies, including the Institution of Chemical Engineers (IChemE), observing a significant expansion in the scope and depth of these criteria over time. This evolution reflects growing institutional and professional imperatives to address sustainability challenges. While many accreditation bodies now incorporate sustainability considerations, significant differences exist in their specific requirements. Societal imperatives, employer demands, and the growing awareness and concerns of young people regarding sustainability all influence these evolving criteria. IChemE-accredited programs are increasingly required to actively integrate sustainability attributes across the curriculum, encompassing knowledge, skills, and values. This broader engagement is crucial for the chemical engineering profession to remain relevant and effectively contribute to addressing contemporary societal challenges.

ABET accreditation [9] provides a recognized seal of quality for engineering programs, assuring both the professional community and the global audience of program excellence. While primarily focused on U.S. programs, ABET can extend its accreditation services internationally. The College of Engineering at Sultan Qaboos University (SQU) was among the pioneering institutions in the Arabian Gulf to receive ABET accreditation (2006-08), with preparations initiated in 2001. As the next accreditation cycle approaches in Fall 2013, this presentation shares our experiences in developing a continuous quality improvement framework. ABET accreditation is guided by eight general criteria. This presentation focuses on Criteria (iii) Student Outcomes and (iv) Continuous Improvement. To facilitate direct measurement and assessment, Student Outcomes are further subdivided into more specific sub-

outcomes. Using the Chemical Engineering Program at SQU as a case study, this presentation emphasizes the critical role of faculty collaboration, curriculum alignment, student awareness, and effective record-keeping and feedback mechanisms in driving continuous quality improvement. Outcome-Based Accreditation and Assessment systems, such as the National Board of Accreditation (NBA), National Assessment and Accreditation Council (NAAC), and National Institutional Ranking Framework (NIRF), play a crucial role in quality enhancement in higher education [10]. While these agencies contribute significantly to improving the quality of engineering education, their distinct frameworks for assessment and ranking can create challenges for institutions. This paper proposes a common framework for quality assurance in engineering education, derived from an analysis of the key indicators used by NBA, NAAC, and NIRF. This integrated approach aims to streamline the assessment process, allowing institutions to focus more effectively on core academic activities. The paper also explores the design of a robust data capture system to support this common framework. Traditional engineering education [11] often fails to equip graduates with the specific skills demanded by the IT industry. This research proposes a competency-based curriculum aligned with ABET accreditation standards and industry needs. The curriculum focuses on problem-solving, critical thinking, and creative thinking in a first-year Python programming course. Learning analytics using Artificial Neural Networks, Naive Bayes, and logistic regression are employed to assess student competency and validate learning outcomes. This approach aims to bridge the gap between academia and industry expectations, fostering lifelong learning and preparing graduates for successful careers. In the rapidly evolving technological landscape [12], engineering faculty face the critical challenge of continuously updating their teaching and research practices to incorporate the latest technologies. This necessitates aligning with accreditation standards and meeting the demands of the modern engineering industry. However, many faculty members struggle to keep pace with these technological advancements.

This study aimed to investigate the factors influencing engineering faculty's adoption of industry-specific technologies. Building upon the Unified Theory of Acceptance and Use of Technology (UTAUT), we explored which constructs from existing models are relevant to this context and identified additional factors that influence faculty adoption decisions. Through in-depth interviews with 21 engineering faculty at a Midwestern U.S. STEM-focused institution, we employed a mixed-methods approach combining deductive and inductive coding to analyze the qualitative data. Our findings confirmed the influence of core UTAUT constructs on faculty technology adoption. Moreover, we identified several crucial Facilitating Conditions, including access to other people, digital resources, non-digital resources, time, and formal training. Importantly, we also uncovered two novel themes: **Access:** This encompasses factors such as institutional support, technical infrastructure, and budgetary constraints. **Personal Traits:** This includes key attributes like persistence, humility, self-efficacy, growth mindset, ambiguity acceptance, and curiosity. Based on these findings, we propose a new "Theory of Faculty Adoption of Engineering Technologies" specifically tailored to the unique context of higher education. This research has significant implications for universities seeking to effectively support faculty in integrating new technologies into their teaching and research practices, thereby ensuring that students are equipped with the necessary skills to succeed in the modern engineering workforce. Construction Engineering program at the American University in Cairo to align its educational objectives and outcomes with the stringent criteria set forth by the Engineering Accreditation Commission of ABET [13]. ABET accreditation requires programs to demonstrate compliance with specific criteria, including those related to Students, Program Educational Objectives (PEOs), Program Outcomes (POs), and Assessment. To fulfill these criteria, the Construction Engineering program meticulously mapped its mission and objectives to the overarching university mission and objectives. Subsequently, program outcomes were

defined and meticulously linked to individual course outcomes. This comprehensive approach ensures that the program effectively prepares graduates to meet the evolving demands of the construction industry

ABET Accreditation

ABET, the Accreditation Board for Engineering and Technology, is a non-governmental, non-profit organization that accredits post-secondary education programs in applied science, computing, engineering, and engineering technology. ABET accreditation ensures that programs meet the quality standards of the profession they serve, preparing graduates for success in the global workforce. ABET, the renowned accrediting body for college and university programs in applied science, computing, engineering, and technology, was founded by a collective of professional societies within the United States. These societies, representing various disciplines within these fields, recognized the critical need for a standardized and rigorous accreditation process to ensure the quality and relevance of higher education programs. By joining forces, these societies established ABET with the primary goal of setting and upholding high standards for these academic programs. This collaborative effort aimed to enhance the quality of education, better prepare graduates for professional careers, and ultimately strengthen the engineering and technological workforce in the United States.

ABET, the organization responsible for accrediting college and university programs in applied science, computing, engineering, and technology, is structured with four distinct commissions: Engineering Accreditation Commission (EAC): This commission oversees the accreditation of engineering programs at the bachelor's and master's degree levels.

Applied Science Accreditation Commission (ASAC): This commission focuses on accrediting applied science programs at the bachelor's and master's degree levels. These programs often bridge the gap between theoretical science and practical applications.

Computing Accreditation Commission (CAC): This commission is responsible for accrediting computing programs, including computer science, computer engineering, software engineering, and other related fields.

Engineering Technology Accreditation Commission (ETAC): This commission oversees the accreditation of engineering technology programs at the associate and bachelor's degree levels. These programs emphasize the application of engineering principles and technologies to solve practical problems.

Each commission has its own specific set of accreditation criteria and procedures to ensure that the programs they accredit meet the high standards of the profession. ABET accreditation is voluntary, and to date, 4,773 programs at 930 colleges and universities in 42 countries have received ABET accreditation. Over 200,000 students graduate from ABET-accredited programs each year, and millions of graduates have received degrees from ABET-accredited programs since 1932. The ABET Engineering Accreditation Commission (EAC) certification process is a rigorous and multi-stage endeavor that typically takes over 18 months to complete. Here's a breakdown of the key stages:

Readiness Review: This initial stage involves a thorough self-study by the institution to ensure they are prepared for the full accreditation process. This includes collecting evidence, analyzing program outcomes, and identifying areas for improvement.

Evaluation Request: Once the readiness review is complete, the institution formally requests an evaluation from ABET. This triggers the start of the full accreditation cycle.

Self-Study Report (SSR): The institution then conducts a comprehensive self-study, examining all aspects of the program, including curriculum, faculty qualifications, facilities, and student outcomes. A detailed Self-Study Report is prepared and submitted to ABET.

On-Site Visit: A team of ABET evaluators visits the institution to conduct a thorough review. This includes interviews with faculty, staff, students, and administrators, as well as a review of program documents and facilities.

Decision-Making Process: Based on the self-study report and the on-site visit findings, ABET's Engineering Accreditation Commission makes a decision regarding the accreditation status of the program. This decision can include full accreditation, accreditation with warning, or denial of accreditation.

The entire process, from the initial readiness review to the final accreditation decision, typically takes over 18 months. This rigorous process ensures that ABET-accredited engineering programs meet the highest standards of quality and prepare graduates for successful careers in the profession. ABET 2010 criteria, in which the program needs to demonstrate clearly that it meets the following criteria.

Criterion 1. Students

Criterion 2. Program Educational Objectives

Criterion 3. Program Outcomes

Criterion 4. Continuous Improvement

Criterion 5. Curriculum

Criterion 6. Faculty

Criterion 7. Facilities

Criterion 8. Support

Criterion 9. Program Criteria

The key components of the ABET accreditation process are:

Program Educational Objectives (PEOs) and Student Outcomes (SOs): Programs must define their PEOs and SOs, which describe what students are expected to know and be able to do by graduation. The assessment and evaluation of these objectives are essential for accreditation.

Continuous Review and Improvement: Engineering programs are required to continuously review, evaluate, and monitor their curricula to meet specific Educational Standards and Measures of Quality (ESMQ). This ongoing process ensures that programs adapt to changes in the profession and industry .

Stakeholder Involvement: Programs must identify key stakeholders, including students, faculty, alumni, and employers, to gather input and ensure that the program meets the needs of its constituencies .

Three Stages of Program Development:

Preparation Process: Involves designing and developing the curriculum based on societal needs, followed by faculty review and approval.

Internal Process: Includes internal and external assessments of the curriculum, validation from local professional bodies, and a feasibility assessment for funding and sustainability.

Legal Process: Consists of obtaining governmental approval and accreditation from recognized agencies before formal program approval .

Compliance with ABET Criteria: Programs must demonstrate compliance with ABET's criteria, which include aspects such as student performance, continuous improvement, curriculum quality, faculty qualifications, and available facilities .

These components collectively ensure that engineering programs maintain high educational standards and effectively prepare graduates for their professional careers.

ABET's Accreditation Policy and Procedure Manual (APPM) serves as the comprehensive guide for the entire accreditation process. This essential document outlines:

Specific Requirements: The APPM details the precise criteria and standards that programs must meet to achieve ABET accreditation. These criteria cover various aspects, including curriculum content, faculty qualifications, program outcomes, facilities, and more.

Step-by-Step Procedures: The APPM provides a clear roadmap for the accreditation process, outlining each stage, from the initial self-study to the final accreditation decision. This ensures that institutions understand the expectations and timelines involved.

Transparency and Consistency: By providing a standardized framework, the APPM ensures transparency and consistency across all ABET accreditation processes. It helps to maintain fairness and objectivity in the evaluation of programs.

The APPM is a valuable resource for both institutions seeking accreditation and ABET evaluators. It provides a shared understanding of the accreditation process and helps to ensure that the highest standards of quality are maintained in engineering and technology education.

ABET accreditation is relatively new in India, but it's gaining significant traction, particularly among private universities. Here's a breakdown of its success in India:

Recent Successes in India:

Chandigarh University: This university has made significant strides in ABET accreditation, becoming the first private university in India to achieve ABET accreditation for multiple engineering programs. This achievement has significantly enhanced the university's global reputation and provided its graduates with a competitive edge.

Benefits of ABET Accreditation in India:

Global Recognition: ABET accreditation provides Indian institutions with international recognition, making their degrees more valuable in the global job market.

Enhanced Quality Standards: ABET's rigorous standards push Indian institutions to improve the quality of their engineering programs, ensuring that graduates are well-prepared for industry demands.

Industry Relevance: ABET accreditation encourages industry collaboration, leading to more industry-relevant curricula and internships.

Student Employability: ABET-accredited programs often lead to better job opportunities for graduates, both domestically and internationally.

Research and Innovation: ABET's focus on research and innovation can stimulate a culture of research within Indian institutions.

Challenges and Future Outlook: While ABET accreditation is gaining momentum in India, there are still challenges to overcome: **Cost and Resource Intensive:** The accreditation process can be costly and time-consuming, requiring significant resources from institutions. **Cultural and Educational Differences:** Adapting to ABET's standards, which are primarily based on the US education system, can be challenging for Indian institutions. **Limited Awareness:** Many Indian institutions may not be fully aware of the benefits of ABET accreditation.

Despite these challenges, the future of ABET accreditation in India looks promising. As more Indian institutions recognize the value of international accreditation, we can expect to see a growing number of ABET-accredited programs in the country. This will ultimately lead to a higher standard of engineering education in India and better opportunities for its graduates.

As of now, there are approximately 11 universities in India that have ABET-accredited engineering programs. These include: VIT Vellore (TN), Chandigarh University, Bharath University (TN), Dr. M.G.R. Educational and Research Institute, Kalasalingam University, Kalinga Institute of Industrial Technology (KIIT), Mody University of Science and Technology, Sathyabama Institute of Science and Technology, SRM Institute of Science and Technology, SVKM's NMIMS Deemed to be University (Mumbai Campus) and Thapar Institute of Engineering and Technology

NBA Accreditation

Steps an Indian institution needs to take to pursue NBA accreditation for its engineering programs:

1. Understand NBA Criteria:

Thoroughly review the NBA accreditation criteria and guidelines. These criteria cover various aspects, including curriculum, faculty, infrastructure, student learning outcomes, and industry interaction.

Familiarize yourself with the specific criteria relevant to your program(s).

2. Internal Self-Assessment:

Conduct a comprehensive internal self-assessment. This involves evaluating your program against the NBA criteria.

Identify areas of strength and weakness.

Gather evidence to support your claims and address any identified gaps.

3. Prepare the Self-Assessment Report (SAR):

Prepare a detailed SAR that accurately reflects your program's strengths and weaknesses.

The SAR should include evidence such as course outlines, student performance data, faculty qualifications, research publications, and industry collaborations.

Ensure the SAR is well-organized, concise, and easy to understand.

4. Submit the Application:

Submit the completed SAR and other required documents to the NBA through the online portal.

Pay the necessary accreditation fees.

5. NBA Site Visit:

The NBA will schedule a site visit to your institution.

The visiting team will interact with faculty, students, and staff, examine facilities, and review program documentation.

They will provide feedback and recommendations based on their observations.

6. Address Recommendations:

Address the recommendations and suggestions provided by the NBA visiting team.

Implement necessary changes to improve program quality.

7. Final Decision:

The NBA will review the site visit report and make a final decision on accreditation status.

Accreditation may be granted for a specific period, typically 3 years.

8. Continuous Improvement:

Establish a system for continuous improvement to maintain and enhance program quality.

Regularly review and update the curriculum and teaching-learning processes.

Collect and analyze data to monitor student learning outcomes and identify areas for improvement.

Similarities between ABET and NBA accreditation:

Focus on Quality Assurance: Both ABET and NBA aim to ensure high standards of education and professional practice in engineering and technology programs.

Emphasis on Student Outcomes: Both accreditors prioritize student learning and development, focusing on measurable outcomes that demonstrate students' abilities.

Program-Level Accreditation: Both ABET and NBA accredit specific programs within an institution, rather than the entire institution itself.

Peer Review Process: Both accreditors rely on a rigorous peer review process involving experts in the field to evaluate programs against established standards.

Continuous Improvement: Both ABET and NBA encourage institutions to engage in continuous improvement processes to enhance the quality of their programs.

Global Recognition: Both ABET and NBA are internationally recognized accreditation bodies, adding credibility to accredited programs.

Focus on Professional Ethics: Both accreditors emphasize the importance of ethical conduct and professional responsibility among students and faculty.

Assessment and Evaluation: Both ABET and NBA require institutions to have robust assessment and evaluation systems in place to monitor student learning and program effectiveness.

Curriculum and Program Requirements: Both accreditors have specific standards related to curriculum design, course content, and program structure.

Faculty Qualifications: Both ABET and NBA have requirements regarding faculty qualifications, experience, and professional development.

Dissimilarities between ABET and NBA accreditation:

Geographic Scope: ABET is primarily focused on accrediting programs in the United States, while NBA is primarily focused on accrediting programs in India.

Organizational Structure: ABET is a non-profit organization, while NBA is a board established by the All India Council for Technical Education (AICTE).

Accreditation Standards: While both have similar goals, the specific standards and criteria used by ABET and NBA may differ in some aspects.

Evaluation Process: The evaluation processes and procedures used by ABET and NBA may vary in terms of the specific documents required, site visits, and the level of detail involved.

Focus Areas: ABET may place more emphasis on certain areas, such as research and innovation, while NBA may prioritize areas like industry collaboration and social responsibility.

Frequency of Reviews: The frequency of reviews and re-accreditation cycles may differ between ABET and NBA.

Public Perception: ABET accreditation may be more widely recognized internationally, while NBA accreditation is primarily recognized within India.

Emphasis on Industry Relevance: NBA may place a greater emphasis on industry relevance and the integration of industry practices into curriculum and projects.

Focus on Regional Context: NBA may consider the specific needs and challenges of the Indian higher education system and regional variations in its accreditation standards.

Government Involvement: NBA is more closely linked to the Indian government and its regulatory bodies, while ABET operates more independently.

The ABET EAC does not specify specific metrics for each criterion. Instead, it encourages programs to use a variety of methods to assess student learning and program effectiveness.

These methods may include:

Direct assessment: This involves directly measuring student performance on tasks that are relevant to the student outcomes. Examples include exams, projects, and design challenges.

Indirect assessment: This involves gathering information about student learning from other sources, such as surveys, interviews, and employer feedback.

Results and Discussion

This analysis reveals both significant similarities and key differences between ABET and NBA accreditation. Both organizations share a common ground in their commitment to quality assurance, focusing on student outcomes, and employing a rigorous peer review process. These shared principles underscore the global movement towards higher education standards that

prioritize student learning and professional development. However, notable distinctions emerge. ABET's primary focus lies within the United States, while NBA concentrates on Indian institutions. This geographic distinction naturally leads to variations in their organizational structures, specific accreditation standards, and the emphasis placed on certain areas. For instance, NBA may exhibit a stronger emphasis on industry relevance and the integration of industry practices, given the specific needs and context of the Indian higher education landscape. Furthermore, the level of government involvement differs. NBA, being established by AICTE, has a closer connection to the Indian government and its regulatory framework. This may influence its approach and priorities, potentially leading to a greater focus on regional needs and challenges within the Indian higher education system.

Conclusion

In conclusion, both ABET and NBA play crucial roles in ensuring the quality and relevance of engineering and technology programs. While they share fundamental principles, their distinct approaches reflect their respective geographic contexts and organizational structures. Understanding these similarities and differences is essential for institutions seeking accreditation, as it allows them to navigate the specific requirements and expectations of each organization effectively.

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