

# Competency-based Education in Pharmacy: Curriculum Design and Assessment

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Received date: January 06, 2025; Accepted date: January 24, 2025; Published date: January 31, 2025

Citation: Gill N (2025) Competency-based Education in Pharmacy: Curriculum Design and Assessment. J Pharma Prac Edu Vol.08 No.1: 01

## Introduction

Competency-Based Education (CBE) has emerged as a transformative approach in professional healthcare education, including pharmacy, shifting the focus from traditional time-based instruction to the demonstration of measurable knowledge, skills and attitudes. In pharmacy, the growing complexity of healthcare systems, evolving patient needs and increasing interprofessional collaboration have necessitated a more dynamic and practical training model. Rather than emphasizing seat time or credit hours, competency-based education ensures that learners advance only after demonstrating mastery of key competencies relevant to their professional roles. This framework prioritizes outcomes such as clinical reasoning, patient-centered care, ethical practice and the ability to adapt to rapidly changing therapeutic landscapes. The implementation of CBE in pharmacy education aligns with global calls for pharmacists to serve as integral members of the healthcare team, contributing to medication optimization, patient counseling and disease prevention. Accreditation agencies and professional bodies worldwide now emphasize the importance of competency frameworks that guide both curricular content and assessment practices. This approach also facilitates international harmonization of pharmacy education, making graduates better prepared for diverse practice environments. As pharmacy moves beyond its traditional dispensing role toward a more clinical and patient-focused profession, competency-based education offers a structured path to ensure graduates are well-prepared to meet the demands of modern practice [1].

## Description

Curriculum design in a competency-based pharmacy program begins with the identification of essential competencies that graduates must possess to function effectively in the healthcare system. These competencies typically include domains such as pharmaceutical knowledge, clinical decision-making, communication, leadership and professionalism. Frameworks such as the International Pharmaceutical Federation's (FIP) Global Competency

Framework and national standards set by accreditation councils often provide guidance. Once competencies are established, curricular mapping ensures that learning outcomes, instructional strategies and assessment methods are aligned. Unlike traditional curricula that often rely on didactic lectures, CBE incorporates active learning strategies such as problem-based learning, case simulations and interprofessional education to promote critical thinking and application. The curriculum is designed to be both integrative and longitudinal, allowing for progressive development of competencies across multiple courses and practice experiences [2].

Assessment in competency-based pharmacy education is continuous and multifaceted, emphasizing both formative and summative measures. Instead of relying solely on written exams, assessments include objective structured clinical examinations (OSCEs), portfolios, reflective journals and workplace-based evaluations. These tools provide a holistic view of learners' abilities and ensure that competencies are measured in authentic contexts. Feedback is integral to the process, allowing students to identify areas for improvement and develop strategies for growth. Assessment strategies are also designed to capture not just knowledge, but also professional behaviors, ethical reasoning and communication skills. In this sense, CBE offers a more comprehensive and realistic evaluation of readiness for practice compared to traditional methods [3].

Faculty development plays a critical role in the successful implementation of CBE in pharmacy. Educators must be trained to design competency-based curricula, facilitate active learning and use modern assessment methods. Faculty may need to shift from being content deliverers to coaches and mentors who guide learners toward mastery. Additionally, the integration of experiential learning opportunities such as community and hospital rotations is essential to expose students to real-world scenarios. Partnerships between academic institutions and healthcare organizations further enhance the application of competencies in diverse practice settings. This collaborative model not only enriches student learning but also strengthens the profession's alignment with healthcare needs. However, implementing such programs requires substantial resources, including technological infrastructure for assessment tracking, faculty training and institutional commitment [4].

Despite its advantages, competency-based education in pharmacy faces challenges such as variability in defining and standardizing competencies, potential resistance to change and logistical issues in assessment implementation. Ensuring consistency across institutions while maintaining flexibility to adapt to local contexts can be difficult. Additionally, the increased demand for faculty engagement in individualized feedback and continuous assessment may strain resources. International collaboration and knowledge sharing also play an important role in refining best practices. Ultimately, overcoming these challenges will require sustained efforts from academic leaders, accrediting bodies and the broader pharmacy community to ensure that competency-based education becomes an integral and sustainable part of pharmacy training [5].

## Conclusion

Competency-based education in pharmacy represents a paradigm shift from knowledge-centered instruction to outcome-driven learning, ensuring that graduates are equipped with the skills, attitudes and expertise necessary to meet contemporary healthcare demands. By focusing on curriculum design that aligns competencies with learning activities and assessments, CBE fosters the development of well-rounded professionals who can adapt to diverse practice environments. While challenges remain in standardization, faculty training and resource allocation, the long-term benefits of producing competent, patient-centered pharmacists outweigh the obstacles. As pharmacy continues to evolve into a clinically oriented profession, competency-based education provides a structured framework to ensure that future practitioners are prepared to deliver high-quality care and contribute meaningfully to interprofessional healthcare teams.

## Acknowledgment

None.

## Conflict of Interest

None.

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