Curriculum Design and Competency Mapping for Personalized Learning in OBE

Sudarshan Balasaheb Babar, S. Sudhakar Reddy
Lotus Business School, Sri Venkateswara College of Engineering (Autonomous)

Curriculum Design and Competency Mapping for Personalized Learning in OBE

[1]Sudarshan Balasaheb Babar, Assistant Professor, Marketing Management Department, Lotus Business School, Pune, Maharashtra India, sudarshanbabar04@gmail.com

[2]S. Sudhakar Reddy, Professor, Department of Mathematics, Sri Venkateswara College of Engineering (Autonomous), Tirupati, Andhra Pradesh, India, drsudhakarreddy.s@svcolleges.edu.in

Abstract

This chapter explores the intersection of personalized learning and Outcome-Based Education (OBE), emphasizing the integration of innovative curriculum design strategies, assessment models, and technological tools to foster learner-centric environments. The chapter delves into the conceptualization of personalized learning pathways, highlighting the importance of aligning learning outcomes with individualized competency goals and designing curricula that cater to diverse learner needs. Through the adoption of interest-based learning clusters, learning contracts, and student-driven goal setting, educational systems can empower learners to take ownership of their educational journey while ensuring the alignment with institutional learning outcomes. The chapter addresses the role of gamification and interactive platforms in enhancing engagement and motivation, making learning experiences more interactive and adaptive to individual preferences. The development of differentiated rubrics and the use of micro-credentials further contribute to accurate, fair, and transparent outcome measurement, supporting the dynamic evaluation of student progress. By incorporating these strategies, educational institutions can optimize the delivery of personalized learning within OBE frameworks, ensuring that all learners are equipped with the skills and competencies necessary for success in the contemporary academic and professional landscapes.

Keywords: Personalized Learning, Outcome-Based Education, Curriculum Design, Competency Mapping, Gamification, Micro-Credentials.

Introduction

The landscape of education is continuously evolving, with an increasing emphasis on tailoring learning experiences to meet the unique needs of individual students [1]. This shift is particularly pronounced in the context of Outcome-Based Education (OBE), where the focus is on clearly defined learning outcomes and competencies that learners must achieve by the end of a course or program [2]. Personalized learning, as a method that customizes the educational experience to align with individual interests, abilities, and learning preferences, has become a central strategy in modern educational paradigms [3]. This chapter explores the intersection of personalized learning and OBE, highlighting how curriculum design and competency mapping can be optimized to support diverse learner pathways, ensuring that each student can meet the required learning outcomes in a way that is most effective for them [4].

Curriculum design plays a critical role in the success of personalized learning initiatives [5]. Traditional curriculum models often adopt a one-size-fits-all approach, where the same content is delivered to all students regardless of their prior knowledge, interests, or learning styles [6]. Personalized learning requires a more flexible and adaptive approach, where the curriculum is designed to cater to individual learner needs [7]. By incorporating strategies such as interest-based learning clusters, learning contracts, and student-driven goal setting, curriculum developers can create learning experiences that are engaging, relevant, and tailored to the specific competencies that learners need to develop [8]. This personalized approach not only fosters greater student engagement but also enables students to take ownership of their learning, thereby enhancing motivation and improving learning outcomes [9].

Competency mapping is another essential aspect of personalized learning within an OBE framework [10]. In an OBE system, the primary focus is on achieving specific, measurable learning outcomes that reflect the development of particular skills and competencies [11]. Competency mapping involves the systematic identification, definition, and alignment of these competencies with curriculum content, assessment methods, and learning activities [12]. For personalized learning to be effective, it is crucial that competencies are mapped to reflect the diverse learning paths that students may take [13]. This allows learners to progress at their own pace and demonstrates mastery of competencies through various forms of assessment, rather than adhering to a rigid, uniform timeline [14]. Effective competency mapping ensures that the educational experience is both rigorous and flexible, allowing students to achieve the same outcomes, albeit through different routes [15].

Technological integration has become an indispensable element in the delivery of personalized learning [16]. The advent of digital platforms, learning management systems (LMS), and interactive technologies has significantly transformed the way curriculum content is delivered and how assessments are conducted [17]. Gamification, in particular, has emerged as a powerful tool for engaging learners by incorporating elements of game design, such as points, badges, and leaderboards, into the learning process [18]. These elements not only make learning more engaging but also provide immediate feedback, allowing students to monitor their progress and stay motivated throughout their educational journey. Interactive platforms, which enable students to access a wide range of resources, participate in simulations, and collaborate with peers, further enhance the personalized learning experience. These technological tools, when integrated effectively, offer an adaptable, flexible environment where students can learn at their own pace, revisit content as needed, and engage in real-time interactions that promote deeper understanding [19].