Developing an Innovative Curriculum through the Block System and Outcome-Based Education:A Thematic Approach to Higher Education

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Abstract. This research aims to develop an innovative curriculum for the Business Education Study Program, Faculty of Economics, State University of Medan (FE Unimed) in response to the challenges of the Industrial Revolution 4.0 and the demands of the Society 5.0 era. Adopting Hannafin and Peck's development model, the curriculum is systematically designed by integrating three main approaches: the Block System, Outcome Based Education (OBE), and the Thematic Approach. The results of the study show the design of a comprehensive curriculum structure, where courses are grouped into cohesive thematic blocks, such as Foundations of Business and Digital Entrepreneurship and Startup Development and Sustainable Business. This structure not only ensures in-depth and focused learning, but also explicitly maps Course Learning Outcomes (CPMK) on Graduate Learning Outcomes (CPL) that are relevant to industry needs. The implementation of this curriculum is recommended to equip graduates with the essential competencies, digital literacy, and entrepreneurial spirit to compete in the global market.

Keywords: Curriculum Development, Block System, Outcome Based Education (OBE), Thematic Approach, Business Education

1 Introduction

Higher education in the era of the industrial revolution 4.0 and Society 5.0 is faced with the challenge of adapting in curriculum development. The rapid digital transformation is driving educational institutions to not only update content, but also revise their teaching philosophy and methodology and curriculum. This is necessary to prepare graduates who are able to compete and adapt to the changing needs of the job market. Research shows that the development of digital competencies and more interactive learning methodologies are key in creating relevant learning experiences [1], [2]. In addition, the engagement of the learning environment with the right technology contributes to success in innovative curriculum integration [3], [4]. During the

pandemic, the need for flexible education is increasingly urgent, where digitalization provides an opportunity to create more inclusive and effective learning methods [5], [6], [7].

The development of innovative curricula in higher education is crucial in responding to challenges that have not been fully addressed by conventional methods. In the context of the industrial revolution 4.0 and Society 5.0, where change is happening quickly and profoundly, educational institutions must create a curriculum that is not only appropriate but also proactive in the face of contemporary dynamics. A dynamic curriculum, able to adapt to the latest developments, is key to producing relevant and competitive graduates in the global job market. In this process, there are several important characteristics of innovations that must be considered, such as their testability, suitability with the recipient's values and needs, complexity, ability to be tested, and observability[8], [9].

The sustainability of innovative curriculum is characterized by the existence of integrated mechanisms for continuous improvement and adaptation, rather than just static end products. This suggests that curriculum development should be an ongoing process, where evaluation and revision are carried out regularly to make the curriculum a living and evolving entity [10], [11], [12]. As shown in research on curriculum development, educators need to be involved in curriculum development to ensure that teaching materials are relevant to current educational needs and social developments [13], [14].

In the context of higher education in Indonesia, the application of the concepts of "Merdeka Belajar" and "Kampus Merdeka" provides an opportunity to develop a more responsive and adaptive curriculum. The concept emphasizes student-centered learning, where students have more freedom in choosing and designing their own learning experiences [14], [15]. It supports the development of important aspects of an innovative curriculum that are expected to improve the learning experience and overall educational outcomes [16], [17]. However, the implementation of innovative curriculum also faces major challenges, including conventional learning habits and traditions that may be difficult to change. A managerial approach that supports collaborative learning and good communication between teachers and students is needed to achieve the desired outcomes [15], [18], [19]. In addition, it is also important to involve other stakeholders, such as entrepreneurs and government agencies, in curriculum development to ensure alignment between education and industry needs [18], [19], [20].

In order to ensure the relevance and success of innovative curriculums, it is important to conduct an ongoing evaluation of their implementation. Effective feedback mechanisms should be implemented to identify strengths and weaknesses in the existing curriculum. Student participation in this evaluation process can provide valuable perspective on how the curriculum meets their needs and how the learning experience can be improved [15], [21], [22]. Going forward, the relevance of higher education will depend on its ability to continue to innovate and respond to the demands of the times in a substantial way. The application of concepts such as Education for Sustainable Development and the internationalization of the curriculum can help in creating a curriculum that is not only relevant but also contributes to skills that will prepare students for an uncertain future [23], [24], [25]. This creates new challenges for educators and curriculum managers in an effort to support an effective learning process in an ever-changing environment.

In the development of the curriculum of higher education in Indonesia, it is important to comply with the Indonesian National Qualifications Framework (KKNI) and the National Standards for

Higher Education (SN DIKTI). This compliance is crucial to ensure the quality and relevance of graduates in an increasingly competitive job market. The Graduate Learning Outcomes (CPL) for the Business Education study program include various essential competencies, including piety to God Almighty, humanity, responsibility, the spirit of independence, entrepreneurship, as well as professionalism and openness [26], [27]. The KKNI provides a clear structure to the qualifications required for educational programs, and encourages the development of a curriculum that is in line with the needs of industry and society [28], [29]. This creates a curriculum that focuses not only on the mastery of knowledge, but also on the development of relevant attitudes and skills [28], [29]. As some studies suggest, integration between theory and practice in teaching can improve graduates' readiness to enter the workforce [26], [28].

The Business Education Study Program must prioritize experiential learning and real applications, especially in the context of the Industrial Revolution 4.0. Graduate Learning Outcomes (CPLs) include mastery of practical skills, ethics, and entrepreneurial spirit, demonstrating the fundamental need to integrate "digital-based skills" and "information and communication technology" in every element of the curriculum [30], [31], [32]. The focus on fields such as "Digital Business" and "Digital Marketing" is an indication that digital literacy is not just an optional subject, but a fundamental competency that every graduate must possess [12], [33].

The development of an innovative curriculum model for the FE Unimed Business Education Study Program through the integration of the Block System, Outcome-Based Education (OBE), and Thematic Approach is very important to produce graduates who have solid theoretical knowledge as well as applicative and adaptive competencies. The emphasis on practical skills, ethics, and an entrepreneurial spirit not only makes graduates ready to compete on a global level, but also relevant to the demands of the digital age and Society 5.0 [34], [35]. The integration of OBEs in the curriculum supports the achievement of specific and measurable learning outcomes, replacing traditional methods that tend to focus on lecture-based teaching [34], [36]. This is important so that students not only understand the theory, but also be able to apply it in real-world situations through project-focused learning experiences and collaborations [37], [38]. Research shows that approaches like these, including Project-Based Learning (PjBL), can strengthen the understanding and skills needed in the world of work [34], [38] . As such, the proposed curriculum should cover both digital and applicative aspects of each thematic block, making it relevant and adaptive to the ever-changing needs of the industry and global demands [35], [39], [40] . Digital skills such as information and communication technology must be thoroughly integrated so that graduates can adapt well in the increasingly technology-based business arena [39], [40].

2 Method

The development of a curriculum that integrates the Block System, Outcome-Based Education (OBE), and Thematic Approach will follow the Hannafin and Peck model, which consists of four main phases: Needs Assessment, Design, Development, and Implementation [41].
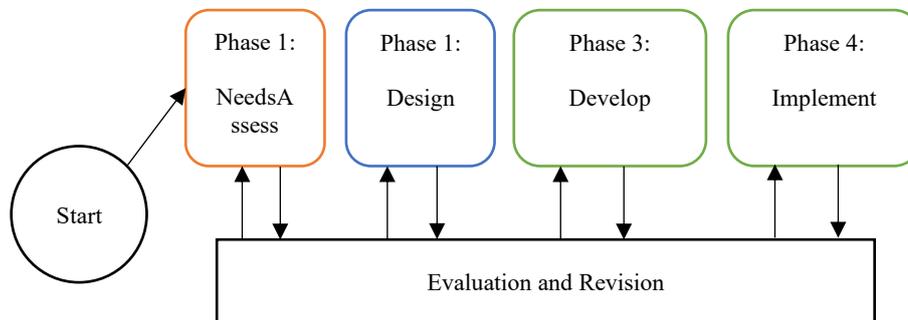
Figure 1. Hannafin and Peck Design Model

The Hannafin and Peck model is a systematic framework for curriculum development that ensures each stage is interconnected and supports the end goal [41]. This process begins with the Needs Phase, where the development team, in collaboration with industry representatives and alumni, identifies gaps between the competencies of current graduates and the demands of the workforce, resulting in a clear Graduate Learning Outcomes (CPL) as a guide. Furthermore, in the Design Phase, a block system model curriculum framework is designed, including the determination of a central theme, the mapping of CPL to Course Learning Outcomes (CPMK), as well as the selection of innovative learning and assessment strategies. After the design is completed, the Development Phase begins by realizing these ideas into concrete materials and instruments, such as syllabus, digital teaching materials, and assessment rubrics, accompanied by comprehensive training for lecturers. Finally, the curriculum enters the Implementation Phase, where learning is implemented in the classroom in an active and continuous method. This phase also includes formative evaluations to gather feedback from students and lecturers, which serves as the basis for rapid improvement and ensures the curriculum remains relevant and effective on an ongoing basis.

Table 1. Curriculum Development Process (Hannafin and Peck Model)

Hannafin and Peck Model Phases	Parties Involved (Example)	Key Process
1. Needs Assessment	Curriculum Development Team, Industry/DUDI, Alumni, Study Program/Faculty Leaders.	Analysis of job market needs and graduates; Identify curriculum gaps; Determination of measurable Graduate Learning Outcomes (CPL); Assessment of resources and constraints.
2. Design	Curriculum Development Team, Curriculum Experts, Lecturers, Study Program/Faculty Leaders.	Design of a formal block system curriculum framework; Identification of study materials and competency areas; Design of central themes per block; CPL mapping to Course Learning Outcomes (CPMK) and determination of courses per block; Determination of innovative learning strategies and assessments.

3. Development	Course Teaching Lecturer, Teaching Material Development Team, Learning Media Expert, Quality Assurance Team, Lecturer Training Team.	Development of syllabus and Semester Learning Plan (RPS); Creation/adaptation of teaching materials (including digital); Design of performance-based assessment instruments; Preparation of comprehensive training modules for lecturers.
4. Implementation	Lecturers, Students, Heads of Study Programs/Faculties, Professional Staff, Quality Assurance Team, Curriculum Development Team.	Implementation of learning with active methods and digital technology; Continuous training and mentoring for lecturers; Providing support for facilities/infrastructure; Formative evaluations and regular feedback collection for quick improvements.

3 Results and Discussion

This section presents the results of the innovative curriculum design for the FE Unimed Business Education Study Program, which integrates the principles of Outcome-Based Education (OBE), the structure of the Block System, and the Thematic Approach.

Table 2. Themes per Block with a Collection of Courses That Are Similar

Semester	Theme Block	Learning Focus	Integrated Courses
Semester 1	Foundations of Business and Digital Entrepreneurship	Building the foundation of business, economy, and digital literacy as a foundation for prospective educators and practitioners.	Introduction to Business, Micro and Macroeconomics, Digital Literacy and Information Technology, Introduction to Entrepreneurship, Business Ethics and Professionalism
Semester 2	Marketing and Digital Product Innovation	Develop an understanding of modern marketing strategies, market research, and digital product/service innovation processes.	Digital Marketing, Marketing Research, New Product Development and Innovation, Design Thinking for Sustainable Business, Customer Insights and Business Models
Semester 3	Financial and Operational Management	Equip students with financial management, accounting, and business operations optimization skills.	Financial Accounting, Financial Management, Financial Technology (FinTech), Operations and Supply Chain Management, Business Intelligence Systems and Data Analytics
Semester 4	Startup Development and Sustainable Business	Guiding students in the design, development, and management of startups, with an emphasis on sustainability and legal aspects.	Startup Management, Business Feasibility Study, Aspects of Business Law and IPR, Human Resource Management in Business, Technology-Based Entrepreneurship (Technopreneurship)

Semester	Theme Block	Learning Focus	Integrated Courses
Semester 5	Business Pedagogy and Curriculum Development	Equip students with pedagogical competencies to teach business, including curriculum development and learning strategies.	Business Education Curriculum Development, Innovative Learning Strategies in Business, Business Learning Evaluation, Business Teaching Practices (Simulation/Micro Teaching), Educational Psychology
Semester 6	Business Research and Community Service	Develop students' research skills and encourage real contributions through community service projects.	Business Research Methods, Business Statistics, Business-Based Community Service, Research Proposal Seminars, Technology and Development Entrepreneurial Dynamics
Holidays 7 & 8	Internship and Capstone Project	Provide practical experience in the industry and the opportunity to apply knowledge comprehensively.	Industrial Internship/Field Work Practice, Thesis/Final Project, Concentration Elective Courses (e.g.: Digital Business, Financial Technology, Digital Marketing, Retail Management, HR Management, Marketing Management)

The cuculum proposed in table 2. for the development of the Business Education study program, FE Unimed follows a comprehensive and integrated approach with the aim of producing graduates who are ready to adapt in a dynamic business environment. The learning process is divided into eight semesters, where each semester is designed to build students' fundamental abilities and practical skills gradually. In Semester 1, students examine the basics of economics and business as well as digital literacy which are very important in the current era. By focusing on developing an entrepreneurial mindset and understanding of ethics, students' motivation to achieve success in the business world will be further increased. According to research, a well-designed curriculum can effectively foster creativity and innovation, which is essential for entrepreneurs [42].

In Semester 2, the emphasis shifts to digital product marketing and innovation, allowing students to understand how businesses reach the market through effective digital marketing strategies. The learning here will include audience research and campaign development. This is important because product innovation that focuses on customer needs can increase the relevance and success of products in the market [43]. Semester 3 leads to financial and operational management, where students will be trained to handle financial statements, cash flow, and supply chain. The introduction of the financial technology (FinTech) aspect this semester is very relevant, considering the changes in the global financial ecosystem that are increasingly digital and complex. A review states that a good understanding of financial management as well as cash flow can help in smarter business decision-making [44].

In Semester 4, the focus of learning shifts to startup and sustainable business development, where students will be encouraged to design and test startup ideas. This practical learning not only covers aspects of business law, but also sustainability principles that encourage students to think critically and creatively in carrying out responsible innovations. Skills in running an

innovative and sustainable business are becoming important in an increasingly demanding social context [45]. Semester 5 is a unique phase in which students are honed as business educators. They will learn to design a suitable curriculum and choose innovative methods of teaching business. Understanding pedagogy and curriculum development is important to prepare an intelligent generation that is able to teach [46]. A thematic approach in learning will be applied, where inter-disciplinary integration is key [47].

Semester 6 prioritizes business research and community service, where students are taught about research methodologies and statistical analysis. These skills are crucial for identifying and solving real business problems, including through community service projects that have a positive impact on society [48]. Finally, Semesters 7 & 8 serve as the pinnacle of learning. Through internships and final projects, students will apply all the knowledge and skills they have acquired to solve complex problems. Hands-on experience in the industry provides students with in-depth insights into the dynamics of the world of work and the challenges at hand, while creating hands-on interaction with practitioners in the field [49].

Table 3. Comparison of OBE Key Principles, Block Systems, and Thematic Approaches

Pendekatan	Core Principles/Main Focus	Impact on Learning
Outcome-Based Education (OBE)	Focus on clear and measurable learning outcomes (CPL/CPMK), not just content.	Produce graduates who are more competent, adaptive, and ready to compete in the job market. Increase accountability and encourage continuous improvement.
Block System	The grouping of the same topics or studies from several courses into a thematic lecture unit. The duration of the semester is 16 weeks.	Allows for longer and focused face-to-face time, facilitating varied learning strategies (e.g., PBL, case studies). Supports deep and focused learning.
Thematic Approach	The use of a central theme to integrate various subjects or concepts.	Create learning that is more meaningful and relevant to the real world. Increase student motivation and develop holistic skills (critical, creative, communication, collaboration).

The three approaches consisting of Outcome-Based Education (OBE), Block Systems, and Thematic Approaches are essential in the development of innovative results-oriented curricula in educational environments. OBE focuses on measurable learning outcomes, supporting graduates to become more competent and ready to face challenges in the job market, and improving the accountability of educational institutions. With OBE, it is hoped that there will be continuous improvement in educational processes and outcomes, creating graduates who not only have the knowledge, but also the skills needed in today's world of work [50], [51].

The Block System approach, which groups topics from several subjects into a single thematic unit of lectures, serves to create longer and more focused face-to-face time. This approach allows for the implementation of varied learning strategies such as Problem-Based Learning (PBL) and case studies, which can improve students' in-depth understanding of concepts [52], [53]. Through the need to consider larger themes, students learn not only the facts, but also how to think critically and creatively in applying their knowledge [54], [55].

Meanwhile, the Thematic Approach contributes to the integration of various subjects under a central theme that is relevant to real life. This makes learning more meaningful and engaging

for students, thereby increasing their motivation [56], [57]. In this context, the thematic approach aims to develop students' holistic skills such as critical thinking, creativity, communication, and collaboration, all of which are essential for success in the 21st century [58], [59] . The integration of various disciplines in this approach supports more in-depth and interdisciplinary learning, and facilitates a cohesive and targeted learning experience [60], [61].

Thus, the synergy of these three approaches, namely OBE, Block System, and Thematic Approach, plays an important role in developing an innovative and effective, results-oriented, and competitive curriculum for graduates in this era of globalization. Success in the implementation of these three approaches also depends on the readiness and skills of teachers as learning process managers who can provide an optimal learning experience [62].

Based on the results of the research and curriculum analysis that has been developed, the following are the main recommendations for the FE Unimed Business Education Study Program. To ensure the successful implementation and sustainability of this innovative curriculum, the FE Unimed Business Education Study Program needs to prioritize several strategic steps. First, the development and legalization of the Formal Block System Model Curriculum should be the main focus, with a careful redesign process to explicitly integrate OBE principles and thematic approaches. After that, detailed CPL and CPMK mapping needs to be done to ensure that each course in the thematic block contributes clearly and measurably to learning outcomes. The next step is investment in the professional development of lecturers through ongoing workshops and training, focusing on OBE pedagogy and innovative teaching methods (such as PBL, case studies, and simulations) in a block format. It is also important to encourage dynamic and technology-based learning design by integrating blended learning and digital tools to maintain student engagement. Finally, the establishment of an ongoing evaluation system that involves feedback from students and industry will be crucial to ensure the curriculum remains relevant and supports a culture of continuous improvement.

4 Conclusion

With this effectively integrated curriculum structure, it can be concluded that the development of an Outcome-Based Education (OBE)-based curriculum for the FE Unimed Business Education Study Program that integrates a block system and thematic approach offers high relevance and innovation. OBE serves as a philosophical foundation that emphasizes clear and measurable learning outcomes, driving the transition from teaching to tangible outcome-oriented learning. The block system supports innovative pedagogy through a longer time allocation to a specific topic, allowing the use of varied learning strategies such as Project-Based Learning and case studies, which are beneficial in material mastery. Thematic approaches play a crucial role in increasing student relevance and learning motivation by connecting different disciplines in meaningful practical contexts. The integration of these three approaches leads to a curriculum model that is adaptive to the needs of the world of work, with an emphasis on practical skills, ethics, entrepreneurship, and digital literacy that are essential in today's business context. Thus, this effectively integrated curriculum is expected to produce graduates who are not only academically competent but also ready to face challenges in the digital era.

Acknowledgments

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