JTE HCM-UTE
ISSN: 2615-9740

JOURNAL OF TECHNICAL EDUCATION SCIENCE
Ho Chi Minh City University of Technology and Engineering
Website: https://jte.edu.vn
Email: jte@hcmute.edu.vn

Rethinking Design Skill Formation in Fashion Design Curricula Under Outcome-Based Education: A Document Analysis Approach

Thi Luyen Nguyen
Ho Chi Minh City University of Technology and Engineering, Vietnam

*Corresponding author. Email: luyennt@hcmute.edu.vn

ARTICLE INFO

Received: 18/04/2026
Revised: 05/06/2026
Accepted: 25/08/2026
Online First: 11/11/2026
Published:

KEYWORDS

Fashion design;
Outcome-based education;
Design thinking;
Competency development;
Curriculum analysis.

ABSTRACT

Outcome-based education increasingly requires fashion design programs to demonstrate how professional competencies are developed and assessed. This study examines the 2025 Bachelor of Fashion Design curriculum at Ho Chi Minh City University of Technology and Engineering, Vietnam, to investigate the distribution, integration, and formal documentation of professional competencies. A qualitative document analysis was conducted using the curriculum framework, program learning outcomes, course learning outcomes, course syllabi, outcome mapping matrices, and quality assurance documents from the 2021–2025 review cycle. A deductive framework was used to analyze three domains: Design Thinking, Technical–Technological Competency, and Professional Practice. Technical–Technological Competency represents 48.1% of the 131 curriculum credits, followed by Professional Practice at 27.5% and Design Thinking at 24.4%. Design Thinking is integrated into 42 of 65 courses (64.6%), but is less consistently articulated in written course learning outcomes, particularly in technical courses. The findings identify an Outcome-Based Education Documentation Gap between competencies described in documented learning activities and those explicitly represented in formal outcome mapping and assessment. The study proposes a competency-oriented framework for improving outcome articulation, competency progression, assessment, and curriculum alignment while preserving the iterative and creative nature of fashion design education.

DOI: https://doi.org/10.54644/jte.2026.2360

Copyright © JTE. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution-NonCommercial 4.0 International License which permits unrestricted use, distribution, and reproduction in any medium for non-commercial purpose, provided the original work is properly cited.

1. Introduction

In recent years, Outcome-Based Education (OBE) has become an important approach to curriculum design in higher education, emphasizing alignment among intended learning outcomes, teaching and learning activities, assessment methods, and graduate competencies [1], [2]. Within this framework, educational quality depends not only on the content delivered but also on how clearly professional competencies are defined, developed across the curriculum, and assessed through measurable learning outcomes [1]–[3].

The implementation of OBE presents particular challenges for Fashion Design education because the discipline combines creative design, technical production, and professional practice. Unlike many disciplines in which learning outcomes can be described through relatively linear knowledge progression, fashion design involves iterative processes of exploration, experimentation, prototyping, and refinement. Students are expected not only to master technical skills but also to generate creative solutions, respond to user and market needs, and communicate their ideas in professional contexts [4], [5]. Consequently, competency development in fashion design should be understood as a multidimensional and process-oriented construct that integrates creativity, technical capability, and professional performance rather than as the acquisition of isolated technical skills alone.

The literature on design education recognizes Design Thinking (DT) as a human-centered and iterative approach to solving design problems through exploration, idea generation, prototyping, testing,

and reflection [4], [6]. In fashion design education, DT supports the development of creative concepts and informed design decisions throughout the design process. In contrast, Technical–Technological Competency (TT) refers to the technical knowledge and practical skills required to transform design concepts into manufacturable products, including patternmaking, garment construction, textile technology, and digital fashion applications [5]. Professional Practice (PP) encompasses the professional capabilities needed for effective participation in the fashion industry, such as communication, teamwork, project management, merchandising, and ethical responsibility [5], [7]. Although these three competency domains are widely recognized as complementary in professional practice, limited research has examined how they are represented, distributed, and aligned within formal curriculum documentation under OBE. Together, these three domains provide the analytical framework for investigating how competencies are represented, distributed, and aligned within curriculum documents.

This issue is particularly relevant in Vietnamese higher education, where OBE has been adopted as a foundation for program quality assurance and accreditation under the Ministry of Education and Training (MOET) quality assurance framework, as reflected in Circular No. 04/2016/TT-BGDĐT and its successor, Circular No. 04/2025/TT-BGDĐT [8], [14]. Against this background, this study examines the 2025 Bachelor of Fashion Design curriculum at Ho Chi Minh City University of Technology and Engineering (HCM-UTE), a 131-credit outcome-based program [9]. Using the three competency domains of DT, TT, and PP as an analytical framework, the study investigates how these competencies are represented, distributed, and aligned within formal curriculum documentation. Accordingly, the study addresses the following research questions:

- RQ1: How are DT, TT, and PP distributed across the curriculum structure?
- RQ2: How is DT represented and aligned within the written CLO–PLO mapping matrix system?
- RQ3: To what extent do curriculum documents and quality assurance evidence demonstrate structural support for competency development within the program?

By analyzing competency development within an established technical university, this study applies a three-domain analytical framework (DT, TT, and PP) to curriculum documents and proposes a competency-oriented curriculum optimization framework for fashion design education. It provides empirical evidence to bridge the OBE Documentation Gap between classroom teaching and formal quality assurance records.

2. Materials and Methods

2.1. Research Design and Context

This study employs a qualitative document analysis approach, a systematic procedure for reviewing and evaluating electronic or printed documents to uncover meaning, gain understanding, and develop empirical knowledge in curriculum research [2], [3]. Document analysis is particularly suited for investigating curriculum coherence, as it allows for the objective tracking of alignment between high-level institutional promises (PLOs) and granular classroom execution (CLOs) [2]. This study does not measure student learning outcomes directly but focuses on curriculum documentation and formal representations of intended learning outcomes.

The research context is the 2025 Bachelor of Fashion Design curriculum at HCM-UTE, Vietnam [9]. The program represents a critical case study of an established university of technology adapting a creative arts curriculum within the national quality assurance and accreditation context relevant to the 2025 curriculum and accreditation cycle, as reflected in Circular No. 04/2016/TT-BGDĐT [8] and its successor, Circular No. 04/2025/TT-BGDĐT [14], alongside institutional quality assurance records [10]. The total volume of the curriculum consists of 131 credits spanning 65 distinct courses across two specialized pathways: Technology-Oriented and Creative Art-Oriented Fashion Design [9].

2.2. Data Sources

To ensure data triangulation and contextual validity, the document corpus analyzed includes both current curriculum blueprints and historical quality assurance metrics:

- The official 2025 HCM-UTE Bachelor of Fashion Design Curriculum Framework document [9].
- The statement of Program Learning Outcomes (PLOs), detailing 12 core competency standards [11].
- Full Course Syllabi and Course Learning Outcomes (CLOs) for all 65 included courses [12].
- The institutional CLO–PLO Mapping Matrix [11].
- Institutional Self-Assessment Reports (SAR), internal audit files, and Performance Indicator (PI) attainment logs from the 2021–2025 quality assurance cycles, which provide empirical data on how previous cohorts performed against the stated competencies [10].

2.3. Competency Framework and Coding Scheme

To examine how professional competencies are represented within the curriculum, this study adopted a deductive coding framework informed by the literature on DT, professional competence, and reflective practice [4]–[7], [13]. The framework conceptualizes professional competence in fashion design through three complementary domains: DT, TT, and PP. These domains were selected because they collectively represent the creative, technical, and professional dimensions commonly described in the literature as essential for fashion design graduates. Based on these conceptual definitions, a coding scheme was developed to identify and classify competency-related evidence across curriculum documents.

- **DT:** In this study, DT is defined as a human-centered and iterative design process involving problem identification, idea generation, prototyping, testing, and reflective refinement [4], [6]. Indicators included evidence of consumer trend research, user-centered problem identification, design concept and mood-board development, visual exploration, creative experimentation, design problem-solving, iterative sketching, prototyping, and reflective refinement.
- **TT:** TT refers to the technical knowledge and practical skills required to transform design concepts into manufacturable fashion products [5]. Indicators included evidence of flat patternmaking, 3D draping, technical fashion illustration, garment construction, textile science, apparel manufacturing technologies, and digital CAD/3D fashion simulation applications.
- **PP:** PP refers to the professional capabilities required for effective participation in the fashion industry, including communication, teamwork, project management, merchandising, ethical responsibility, and industry engagement [5], [7]. Indicators included evidence of fashion merchandising, apparel marketing, project portfolio development, teamwork, interdisciplinary collaboration, professional ethics, corporate internships, and the industry-facing capstone graduation defense.

To enhance interpretive trustworthiness, coding decisions were subjected to multiple rounds of review and cross-checking, while documentary triangulation was used to compare findings across curriculum documents, course syllabi, and institutional quality assurance records. This process helped ensure consistency in the interpretation and classification of documented curriculum content.

For analytical purposes, DT evidence in course learning outcomes (CLOs) was classified into three categories. Explicit DT evidence refers to CLOs that directly specify design-thinking activities or processes, such as user-centered problem identification, ideation, prototyping, testing, or iterative refinement. Implicit DT evidence refers to CLOs that describe activities potentially associated with design thinking but do not explicitly identify design-thinking processes, such as creative problem-solving, design development, or concept exploration. No evidence of DT refers to CLOs that contain no identifiable learning outcomes or activities related to design thinking based on the operational indicators used in this study.

3. Results and Discussions

3.1. Distribution of Credits Across Competency Domains (RQ1)

The distribution of credits across the three competency domains provides an overview of the curriculum's structural emphasis on professional competency development. Credit allocations were

aggregated according to the primary competency domain assigned to each of the 65 courses to examine how DT, TT, and PP are represented within the curriculum.

***Table 1**. Distribution of Credits Across Primary Competency Domains.*

Competency Domain	Number of Courses	Total Credits	Percentage (%)
Technical–Technological Competency (TT)	32	63	48.1
Professional Practice (PP)	15	36	27.5
Design Thinking (DT)	18	32	24.4
Total	**65**	**131**	**100.0**

As shown in Table 1, TT represents the largest proportion of the curriculum, accounting for 63 of the 131 credits (48.1%), followed by PP with 36 credits (27.5%), and DT with 32 credits (24.4%). This distribution indicates that the curriculum is structurally oriented toward developing technical capability while also supporting professional practice and creative design through dedicated curricular components.

The predominance of TT is consistent with the historical orientation of HCMUTE as a technology-based university, where technical preparation in patternmaking, garment construction, manufacturing technologies, and digital fashion applications forms a major component of professional training. At the same time, the substantial allocation to PP demonstrates the program's commitment to preparing students for industry practice through internships, management-related courses, and other professionally oriented learning experiences.

Although DT accounts for the smallest share of credits as a primary competency domain, this result should not be interpreted as indicating limited attention to creativity within the curriculum. Credit distribution reflects only the primary instructional focus assigned to each course and does not capture competencies that are integrated across multiple learning contexts. Consequently, evaluating credit allocation alone may underestimate the extent to which DT is embedded throughout the curriculum. This limitation is addressed in the following section by examining the integration of DT as a secondary competency domain across different course categories.

3.2. Integration of DT Across Course Categories (RQ1 & RQ2)

To further examine how DT is embedded within the curriculum, all 65 courses were analyzed for evidence of DT as a secondary competency domain based on course learning activities, assessment tasks, and documented instructional requirements [12]. This analysis complements the credit distribution analysis by examining the extent to which DT is integrated beyond courses where it serves as the primary instructional focus.

***Table 2.** Integration of DT Across Course Categories.*

Course Category	Total Courses	Courses Integrating DT	Integration Percentage (%)
Design Studios	18	18	100.0
Technical Courses	32	20	62.5
Foundation and General Education	15	4	26.7
Total Curriculum	**65**	**42**	**64.6**

As shown in Table 2, DT is integrated into 42 of the 65 courses (64.6%) [12], indicating that creative competency development extends well beyond dedicated design studio subjects. As expected, all Design Studio courses (100%) explicitly incorporate DT [12]. More importantly, 20 of the 32 TT courses (62.5%) also demonstrate evidence of DT integration, suggesting that creative problem-solving is

embedded within a substantial proportion of technical learning experiences rather than being confined to design-oriented courses [12].

Analysis of course syllabi [12] further indicates that this integration occurs through learning activities requiring students to interpret design concepts, generate alternative solutions, revise prototypes, and adapt technical processes to meet aesthetic and functional requirements. For example, courses such as Advanced Pattern Making and Fashion Design on Dress Form require students not only to apply technical procedures but also to engage in iterative experimentation, evaluation, and refinement throughout the design process [12]. These activities correspond closely to the DT indicators defined in the coding framework presented in Section 2.3 [4], [6].

Collectively, these findings suggest that DT functions as a cross-cutting competency embedded throughout the curriculum rather than as an isolated capability developed exclusively in design studios. Although these courses are primarily classified within the TT domain, many require students to integrate creative reasoning with technical execution as part of the learning process [12]. This observation provides important context for the subsequent analysis of written CLOs, where the formal representation of these design-thinking processes is examined.

3.3. Representation of DT in Written CLOs: The OBE Documentation Gap (RQ2)

To investigate whether documented learning outcomes reflect the integration of DT across the curriculum, all 255 CLO statements from the 65 course syllabi were analyzed using the coding framework described in Section 2.3. Each CLO was classified as containing explicit, implicit, or no evidence of DT according to the operational definitions given in Section 2.3.

Table 3. *Quantitative Distribution and Representation of Design Thinking within Written CLOs.*

Course Category	Total Courses (N=65)	Total Analyzed CLOs	Explicit DT CLOs	Implicit DT CLOs	No DT Evidence
Design Studios	18	76	52 (68.4%)	20 (26.3%)	4 (5.3%)
Technical Courses	32	124	12 (9.7%)	78 (62.9%)	34 (27.4%)
Foundation & Gen Ed	15	55	6 (10.9%)	8 (14.5%)	41 (74.5%)
Total CLO Statements	**65**	**255**	**70 (27.5%)**	**106 (41.6%)**	**79 (31.0%)**

Percentages may not sum to 100.0% due to rounding.

As shown in Table 3, the textual analysis reveals a clear difference between the documented representation of DT and its broader integration within curriculum activities. Of the 255 CLO statements, only 70 (27.5%) explicitly describe DT, whereas 106 (41.6%) imply DT-related processes without directly articulating them, and 79 (31.0%) contain no identifiable DT evidence [12]. This pattern indicates that DT is more frequently embedded in documented learning activities than explicitly articulated in formal learning outcome statements [12].

The discrepancy is particularly evident within the TT courses. Although the analysis presented in Section 3.2 demonstrated that many technical courses incorporate DT through iterative experimentation and creative problem-solving, only 12 of the 124 CLO statements (9.7%) explicitly reference these processes, while 78 CLOs (62.9%) express them only implicitly [12]. Consequently, much of the design-thinking activity required during teaching and learning is not directly visible within the formal outcome documentation [12].

This pattern is illustrated by a typical CLO from the Advanced Pattern Making syllabus [12]:

"Students must accurately construct a set of industrial blocks for a five-piece collection."

Although this learning outcome appropriately specifies the expected technical product, it does not explicitly acknowledge the iterative design reasoning, alternative solution development, prototype refinement, or reflective decision-making required to achieve that outcome. These activities are evident in the associated learning tasks but remain only indirectly represented in the formal CLO statement [12].

Collectively, these findings reveal a mismatch between the competencies developed through documented learning activities and those explicitly articulated within the formal outcome-based assessment framework. Importantly, this mismatch should not be interpreted as evidence that DT is absent from the curriculum. Rather, it indicates that DT is actively cultivated through teaching and learning activities but is only partially reflected in formal CLOs and assessment documentation. In this study, this phenomenon is conceptualized as the OBE Documentation Gap, referring to the discrepancy between curriculum practices as documented in syllabi and their explicit representation in official outcome documentation. From an OBE perspective, such a gap may reduce the transparency of competency progression and limit the extent to which creative problem-solving competencies can be systematically demonstrated, assessed, and monitored across the curriculum [1], [2].

3.4. Institutional Evidence of the OBE Documentation Gap (RQ2 & RQ3)

Table 4. *Mapping Disconnect Between Documented Course Requirements and Institutional PLO Allocation.*

Syllabus Code	Course Title	Documented Studio/Lab Activity (per syllabus)	Current Written CLO	Mapped PI	Evidence of the OBE Documentation Gap
FDDF331952	Fashion Design on Dress Form	Students repeatedly experiment with draping, pinning, reshaping, and evaluating fabric behavior on the dress form to generate and refine design solutions.	CLO1: "Experiment with draping and 3D techniques." CLO2: "Apply creative draping to develop innovative garments."	PI2.1, PI8.2, PI4.3	The formal assessment emphasizes the completed garment. The iterative design reasoning, experimentation cycles, and reflective decision-making are not explicitly assessed.
ADPM241652	Advanced Pattern Making	Students continuously modify, test, and revise patterns to transform abstract design concepts into manufacturable garment structures.	CLO3: "Experiment with advanced garment pattern development, prototyping, and product development."	PI2.1	The written assessment criteria emphasize technical accuracy and final pattern quality, while evidence of the creative problem-solving process is less explicitly documented.
BSPM241252	Basic Pattern Making	Students engage in trial-and-error pattern drafting, fitting adjustments, and prototype revisions to understand garment construction principles.	CLO3: "Experiment with designing basic garments for specific users."	PI2.1	Studio activities require iterative exploration; however, assessment mainly measures the final drafting outcome, providing limited evidence of students' design thinking development.
AASP333552	Advanced Apparel Sewing Practice	Students troubleshoot construction problems, test alternative sewing methods, and refine garment assembly through repeated experimentation.	CLO1: "Experiment and explore pattern making and sewing knowledge."	PI2.1	The learning process involves substantial experimentation, but grading is largely based on finished garment quality rather than documenting decision-making and iterative improvement.

To examine whether the pattern identified at the course level is also reflected within the institutional quality assurance system, the analyzed course syllabi were cross-examined against the official CLO–PLO mapping matrix and institutional quality assurance documents [10], [11]. This analysis extends the course-level findings by examining how competency development is represented within the institutional CLO–PLO mapping system and related quality assurance documentation.

As illustrated in Table 4, all four representative technical courses require students to engage in iterative experimentation, design refinement, and reflective decision-making as integral components of studio learning [12]. However, these processes are only partially represented in the corresponding CLOs and mapped PIs, which continue to emphasize technical execution and final artefacts [11], [12]. This pattern suggests that the formal CLO–PLO mapping matrix adequately documents technical competency attainment but provides comparatively limited visibility of iterative design-thinking processes [11], [12]. Consequently, the mapping system documents learning products more consistently than the iterative design processes through which they are developed [11], [12].

This interpretation is further corroborated by institutional quality assurance evidence. Analysis of SAR, CLO attainment summaries, and Continuous Quality Improvement (CQI) documentation consistently indicates that technical competencies are systematically documented through measurable attainment indicators, whereas evidence of iterative design-thinking processes is more commonly presented in qualitative curriculum reviews and improvement discussions [10].

Table 5. *Illustrative Evidence from QA Documentation.*

Competency Component	Evidence from QA Documentation	Observed Pattern
Technical Execution	CLO attainment reports and assessment rubrics	Frequently supported by explicit CLOs and rubric criteria
Creative Design Synthesis	Curriculum review records and CQI discussions	More frequently discussed in qualitative reviews than in formal attainment reports

Table 5 shows that while technical execution is routinely measured through explicit CLO attainment reports and assessment rubrics, creative design synthesis is more commonly discussed in qualitative curriculum reviews and CQI records [10]. This pattern is consistent with the findings in Sections 3.2 and 3.3, suggesting that the quality assurance system recognizes DT but does not consistently track it through measurable outcome indicators. Taken together, the evidence from course syllabi, CLO–PLO mapping, and institutional quality assurance records suggests that the main challenge lies less in whether DT is present in curriculum documents than in how it is represented and measured. These findings provide the rationale for the competency-oriented curriculum optimization framework proposed in this study.

4. Implications and Proposed Framework

The findings in Section 3 show that DT is already present in the curriculum. The main issue is that its development and assessment are not fully reflected in the formal OBE documentation. Building upon these findings, this study proposes a competency-oriented curriculum optimization framework to strengthen how these competencies are defined, developed, and assessed [1], [2]. The framework focuses on four dimensions where the OBE Documentation Gap is most prominent: CLO articulation, competency progression, assessment orientation, and CLO–PLO alignment. Table 6 summarizes the proposed competency-oriented curriculum optimization framework across these four dimensions.

Resolving the Aesthetic Assessment Dilemma

The findings of this study also highlight a broader challenge in design education: how creative processes can be assessed within an OBE framework without reducing artistic expression to rigid technical criteria. To address this challenge, the proposed framework emphasizes that although the final aesthetic quality of a fashion collection inevitably contains subjective elements, the underlying creative

design process is observable, documentable, and can therefore be systematically assessed within an OBE framework.

Accordingly, the framework prioritizes the assessment of observable design processes—including ideation, iterative experimentation, reflective refinement, and design justification—rather than subjective aesthetic preferences. This approach enables creative competency to be documented in ways that remain compatible with quality assurance requirements while preserving artistic autonomy [1], [4], [8]. Rather than prescribing a universal curriculum model, this framework offers an evidence-informed reference that institutions may adapt to strengthen the documentation and assessment of cross-cutting competencies within outcome-based fashion design curricula.

Table 6. *Competency-Oriented Curriculum Optimization Framework.*

Dimension	Identified OBE Documentation Gaps	Proposed Strategic Framework	Operationalization Example / Parameters
CLO Articulation	High rate of implicit representation (62.9%) in technical courses, obscuring active design processes.	Reformulate technical course CLOs using dual-domain action verbs that unite technical execution with design synthesis.	Revised Patternmaking CLO: "Analyze and adapt complex geometric flat patterns to synthesize structural shapes that realize the aesthetic intent of a creative design concept."
Skill Progression	Fragmented progression across studio tiers; identical mapping to high-level PLOs without depth scale.	Adopt a staged competency progression through a three-tier taxonomy: Foundational (Imitative), Intermediate (Adaptive), and Advanced (Autonomous).	Tier 1 (Sophomore): Replicate standard silhouettes with given specs. Tier 2 (Junior): Modify existing blocks to fit creative mood boards. Tier 3 (Senior): Engineer novel, autonomous structural forms for experimental collections.
Assessment Orientation	Heavy skew towards product-based evaluation (final garment aesthetics or technical compliance).	Incorporate milestone-based portfolio assessments and process logs that explicitly grade ideation, failure recovery, and iterative prototyping.	Illustrative process rubric component: documented iterative cycles, design problem-solving logs, and justification for material adjustments.
CLO–PLO Alignment	Formal but superficial alignment; cross-cutting domains lack deep integration in the mapping system.	Strengthen CLO–PLO mapping practices to recognize both primary and secondary competency contributions, thereby validating the cross-cutting function of DT.	Revise institutional CLO–PLO mapping practices to formally recognize both primary and secondary competency contributions.

5. Conclusions, Limitations, and Future Directions

This study examined how DT, TT, and PP are represented within the 2025 Bachelor of Fashion Design curriculum at HCMUTE using a qualitative document analysis approach grounded in OBE. Three principal findings emerged. First, although TT constitutes the largest proportion of the curriculum, DT is broadly integrated across studio and technical courses rather than being confined to design-oriented subjects. Second, despite this widespread integration, DT is only partially articulated within formal CLOs and CLO–PLO mapping documentation, resulting in what this study conceptualizes as the OBE Documentation Gap. Third, institutional quality assurance evidence indicates that this gap extends beyond individual course documentation to the program-level competency mapping system, reducing the visibility of iterative design processes within outcome-based quality assurance.

Building upon these findings, this study proposes a competency-oriented curriculum optimization framework that strengthens the articulation, progression, assessment, and mapping of cross-cutting competencies in fashion design education. Rather than prescribing a universal curriculum model, the

framework provides an evidence-informed reference that may assist institutions in improving competency documentation while preserving the creative, iterative, and reflective nature of design education.

Limitations

This study is limited by its exclusive reliance on curriculum documents, institutional CLO–PLO mapping matrices, and historical quality assurance records [10]. Consequently, the findings reflect the documented curriculum rather than actual classroom implementation or student learning experiences. The study does not incorporate classroom observations, instructor perspectives, student experiences, or employer feedback, all of which may provide additional insights into how competencies are enacted in practice.

Future Research

Future investigations should expand upon these findings by:

- Conducting empirical investigations involving faculty, students, and industry partners to compare documented competencies with classroom practice and professional expectations.
- Comparing competency representation across fashion design curricula at different higher education institutions, particularly within the ASEAN region, to establish broader benchmarks for OBE implementation.
- Developing and validating longitudinal assessment models and digital portfolio systems capable of documenting the progression of creative and technical competencies throughout students' academic development.

Acknowledgments

The author would like to express sincere gratitude to HCM-UTE and colleagues in the Department of Fashion Design for their support and facilitation throughout the development of this study.

Conflict of Interest

The author declares that there is no conflict of interest.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work, I used ChatGPT for English language editing. I reviewed and edited the content as needed and took full responsibility for the final manuscript.

Data Availability Statement

The data that support the findings of this study are not publicly available due to institutional restrictions but are available from the corresponding author upon reasonable request. Additional details and the complete coding datasets are provided as Supplementary Material.

REFERENCES

[1] W. G. Spady, *Outcome-Based Education: Critical Issues and Answers*. Arlington, VA, USA: American Association of School Administrators, 1994.
[2] R. M. Harden, "Outcome-based education: The future is today," *Med. Teach.*, vol. 29, no. 7, pp. 625–629, 2007.
[3] S. Adam, *Using Learning Outcomes: A Consideration of the Nature, Role, Application and Implications*. London, U.K.: University of Westminster, 2004.
[4] N. Cross, *Design Thinking: Understanding How Designers Think and Work*. Oxford, U.K.: Berg, 2011.
[5] M. Mulder, "Competence Theory and Research: A Synthesis," in *Competence-based Vocational and Professional Education: Bridging the Worlds of Work and Education*, M. Mulder, Ed. Cham, Switzerland: Springer, 2017, pp. 1071–1106.
[6] R. Oxman, "Thinking difference: Theories and models of parametric design thinking," *Design Stud.*, vol. 52, pp. 4–39, 2017.
[7] R. Barnett, *The Limits of Competence: Knowledge, Higher Education and Society*. Buckingham, U.K.: SRHE and Open University Press, 1994.
[8] Ministry of Education and Training (MOET), *Circular No. 04/2016/TT-BGDĐT Promulgating Regulations on Standards for Quality Assessment of Higher Education Programs*. Hanoi, Vietnam, Mar. 14, 2016.
[9] Ho Chi Minh City University of Technology and Engineering (HCM-UTE), *Bachelor of Fashion Design Curriculum Framework*, internal institutional document, 2025.
[10] Ho Chi Minh City University of Technology and Engineering (HCM-UTE), *Self-Assessment Reports, External Review Preparation Documents, Continuous Quality Improvement Reports, CLO–PLO Attainment Reports, and Accreditation Evidence Files of the Bachelor of Fashion Design Program*, internal quality assurance documentation, 2021–2025.
[11] Ho Chi Minh City University of Technology and Engineering (HCM-UTE), *Program Learning Outcomes and CLO–PLO Mapping Matrix of the Bachelor of Fashion Design Program*, internal quality assurance document, 2025.

[12] Ho Chi Minh City University of Technology and Engineering (HCM-UTE), Course Syllabi of the Bachelor of Fashion Design Program, internal academic documentation, 2025.
[13] D. A. Schön, *The Reflective Practitioner: How Professionals Think in Action*. New York, NY, USA: Basic Books, 1983.
[14] Ministry of Education and Training (MOET), *Circular Regarding Accreditation of Training Programs at Different Levels of Higher Education*, No. 04/2025/TT-BGDĐT. Hanoi, Vietnam, Feb. 17, 2025.

Thi Luyen Nguyen is a lecturer in the Department of Fashion Design, Faculty of Graphic Arts & Media, Ho Chi Minh City University of Technology and Engineering (HCM-UTE), Vietnam. The author earned a bachelor's degree in Industrial Garment Technology from HCM-UTE in 2003 and a master's degree in Textile and Garment Technology from Hanoi University of Science and Technology, Vietnam, in 2008. The author also completed professional training in Fashion Design through the Korea International Cooperation Agency, Soongsil University, and Quang Trung Software City in 2013, as well as professional development programs in pedagogical practice and higher-education teaching. The author has worked in the field of fashion design education since 2004 and has held teaching and academic management positions in the Fashion Design program. The research interests include patternmaking, traditional Vietnamese costume, fashion materials, textile manipulation techniques such as smocking and pleating, knitted fabric elasticity, historical fashion reconstruction, and the development of teaching tools and methods for fashion design education. The author has published textbooks on Vietnamese Ethnic Costumes and Basic Patternmaking and has conducted research on contemporary patternmaking methods for the Vietnamese ao dai, textile manipulation techniques, knitted fabric elasticity, and the reconstruction of Western fashion from the 1920s and 1960s.

Email: luyennt@hcmute.edu.vn. ORCID: https://orcid.org/0009-0006-0468-1335.