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Designing a Digital Platform-Based Career Experiential Learning Module for Lower Secondary Students to Enhance Career Guidance Quality: A Case Study in Hanoi

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Abstract

Amid Vietnam's education digital transformation, lower secondary schools need scalable approaches to strengthen career guidance and support post-lower secondary streaming decisions, particularly for Grade 9 learners in Hanoi where school conditions vary. This study reports the design of a digital platform (LMS)-based career experiential learning module that enables students to "try out" occupations through structured learning experiences. Grounded in experiential learning and developmental psychology (Piaget & Erikson), the module integrates the Grade 9 Experiential Activities and Local Education frameworks into microlearning units (30–45 minutes). These units combine: (i) concise occupation overviews reflecting local industries, (ii) simulation of specific 'small vocational skills' through guided multimedia tasks and interactive self-assessment, and (iii) implementation conditions covering infrastructure, LMS functions (SCORM/H5P compliance), and human support. Based on document analysis and synthesis of curriculum requirements, the study proposes a feasible instructional architecture aligned with e-learning quality principles (OSCQR rubric). The resulting design offers a replicable template for developing modular career lessons, strengthening school–TVET linkages, and improving the accessibility of career guidance for students in Hanoi

Keywords: Career guidance; Experiential learning; learning management system (LMS); secondary education; Hanoi.

1. Introduction

In the context of Vietnam's national digital transformation strategy for education, developing digitized curricula—specifically career experiential programs for lower secondary students—has become more urgent than ever. In Hanoi, this objective is concretized through Plan No. 219/KH-UBND to implement the national streaming scheme, setting a specific target that 40% of lower secondary graduates should transition into vocational education and training (VET) institutions. However, practical implementation reveals that career guidance activities in many secondary schools remain largely formalistic, lacking synchronization and a clear digital structure suitable for modern learning environments.

According to the 2018 General Education Curriculum (Circular No. 32/2018/TT-BGDĐT), career orientation is institutionalized through two compulsory components: Experiential Activities – Career Guidance (HĐTN-HN) and Local Education (GDĐP). While HĐTN-HN focuses on personal competencies and self-orientation, GDĐP provides specialized knowledge regarding local economic strengths, traditional craft villages, and socio-economic characteristics. This research identifies a significant "gap" in practice: Hanoi's secondary schools lack digitized learning materials capable of seamlessly integrating these two components on Learning Management Systems (LMS) to support student decision-making.

From a behavioral science perspective, Grade 9 students (aged 14–15) are at a pivotal "decision point" in their identity formation. According to Jean Piaget's theory of cognitive development, learners at this age enter the "formal operational stage," enabling abstract reasoning and logical analysis for rational future planning. Simultaneously, following Erik Erikson's psychosocial theory, this stage represents "Identity vs. Role Confusion," where students require concrete experiences to establish a clear social self. Applying experiential learning theories from John Dewey and David Kolb through digital vocational simulations allows students to "test" professional skills in a safe environment before making actual career choices.

In response to these requirements, this study focuses on designing a digital platform-based career experiential program structure specifically for Grade 9 students in Hanoi, comprising a 10-period core module implemented in Semester II. The program adopts a "scaffolding" model, sequencing content into four stages: Warm-up, Exploration, Simulation Practice, and Reflection. The structure integrates three core pillars: (1) Self-exploration and career orientation; (2) Understanding local occupational realities (including Hanoi's industrial zones and traditional craft villages); and (3) Simulating representative vocational "mini-skills" (such as Information Technology) via interactive LMS scenarios.

This article will sequentially present the design basis for the program structure, digitized lesson templates, and the necessary implementation conditions—including technical infrastructure (LMS, SCORM/H5P standards) and human support. The research findings are expected to provide a modern, feasible career guidance model that enhances streaming effectiveness and supports the development of future human resources for the capital city in the digital era.

2. Literature review and theoretical framework

2.1. Core concepts

Experience and Experiential Learning: The concept of experience is analyzed primarily from an educational perspective. According to John Dewey (1938), experience is the core foundation of the learning process, which should be organized as a continuous and connected series of positive experiences rather than a mere transmission of knowledge. In the Vietnamese educational context, "experience" is distinguished into four levels: perception (cảm nghiệm), testing (thử nghiệm), accumulated experience (kinh nghiệm), and experiential learning (trải nghiệm)—where knowledge is applied to real-world situations to form value attitudes. David Kolb (1984) further conceptualized this as a four-stage cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation.

Career Experience: Career experience is the process through which individuals interact with social and professional environments to develop knowledge, skills, and career orientation. It plays a vital role in helping learners evaluate their capabilities and make informed career decisions. A clear distinction exists between "vocational training" and "career experiential learning": while vocational training aims to meet professional standards for immediate labor market entry, career experiential learning focuses on exploring interests,

understanding work environments, and developing soft skills such as problem-solving, communication, and decision-making.

Digital Platforms and Digital-Based Career Experiential Programs: A digital platform (LMS) is a technological system built to provide services, products, or solutions through digital technologies, allowing connection and interaction in an online environment. A digital-based career experiential program is an educational activity that applies information technology to support teaching and learning in online or blended environments, enabling students to explore various occupations through digital simulations and interactive resources.

2.2. Theoretical foundations

This study focuses on Grade 9 students (aged 14–15), a pivotal stage in personality development and career consciousness. (i) Cognitive Development Theory (Piaget, 1972): Students at this age enter the formal operational stage, allowing them to engage in abstract reasoning, logical analysis, and rational decision-making; (ii) Psychosocial Development Theory (Erikson, 1968): This stage corresponds to the crisis of "Identity vs. Role Confusion," where students explore their social roles and seek a sense of self. Career experiences are essential to help students avoid ambiguity regarding their future roles in society; (iii) Experiential Learning Theory: By utilizing digital simulations, students can "test" skills in a safe environment, facilitating the transition from observation to conceptualization as proposed by Kolb.

2.3. Policy framework and practical gaps in Vietnam

Career guidance in Vietnam has been institutionalized through the Education Law (2019), Resolution No. 29-NQ/TW, and the 2018 General Education Curriculum (Circular 32/2018/TT-BGDĐT). Under this curriculum, Experiential Activities – Career Guidance (HĐTN-HN) and Local Education (GDĐP) are compulsory components. However, several gaps remain in practice:

(1) Career guidance activities are often formalistic and lack technological support or interactive digital materials.

(2) There is a lack of integration between HĐTN-HN (personal skills) and GDĐP (local knowledge).

(3) Hanoi faces a significant "streaming" challenge, with the goal of directing 40% of lower secondary graduates toward vocational education.

2.4. Modern digital instructional design models

To ensure the quality of digital career programs, this research incorporates international standards:

(1) Scaffolding Model: Jing Sun (2022) emphasizes dividing content into small steps—warm-up, guided learning, self-practice, and feedback—to prevent cognitive overload for secondary students.

(2) OSCQR Rubric (SUNY): Establishes quality criteria for online courses, including clear learning objectives, interactivity, integrated assessment, and automated feedback.

(3) Digital Vocational Simulations: According to the CE-E VET (2023) project, students should be allowed to try professional skills in a safe, simulated digital environment before engaging in real-world practice.

3. Research methodology

This study aims to develop and standardize a digital platform-based career experiential program structure that aligns with digital transformation requirements and post-secondary streaming objectives in the specific context of Hanoi.

3.1. Research design and rationale

Given the practical need for scalable digital career guidance in Hanoi and the current lack of standardized LMS-ready lesson structures, the research follows a document-driven instructional design logic: (i) analyze governing curriculum and policy documents to extract mandatory requirements and constraints; (ii) synthesize relevant international design guidance and quality rubrics for online learning; and (iii) translate these requirements into a structured module blueprint and lesson template that can be deployed on common LMS platforms.

3.2. Data sources

Three categories of documents were analyzed. First, national and local policy/curriculum documents were used to define the compulsory framework for career guidance and local education integration. Second, design-oriented references on digital vocational experience and scaffolding-based lesson organization were used to derive pedagogical sequencing principles, including the scaffolding model reported by Sun (2022) and the recommended structure for digital vocational lessons from CE-E VET (2023). Third, online course quality criteria were incorporated to ensure instructional and technical readiness, particularly the OSCQR rubric (SUNY) emphasizing clear objectives, interaction, assessment, and feedback within online modules.

3.3. Analytical procedure

The analysis proceeded in four steps.

(1) Requirement extraction: Policy and curriculum documents were coded to identify required learning components (career guidance and local education linkages), delivery constraints (time allocation, learner age), and expected outputs (e.g., orientation products such as learning journals/portfolios).

(2) Design principle mapping: Pedagogical principles were extracted and mapped into a lesson-flow schema. In particular, scaffolding-based sequencing and micro-steps were used to reduce cognitive overload and support guided practice, consistent with Sun (2022).

(3) LMS feasibility specification: Technical requirements were derived from CE-E VET guidance and OSCQR/SUNY criteria to ensure that the proposed lesson template is compatible with typical LMS features and interactive standards (e.g., SCORM/H5P).

(4) Design synthesis: The coded requirements and mapped principles were consolidated into two design artifacts: (i) a 10-period module roadmap for Grade 9 learners; and (ii) a standardized digital lesson template (30–45 minutes) consisting of warm-up, exploration, simulation practice, and reflection/feedback stages.

3.4. Trustworthiness and design validation

To enhance trustworthiness in the absence of field testing, the study maintained an audit trail of document sources and coding decisions, and performed cross-checking of the proposed module structure against OSCQR criteria and CE-E VET recommendations to ensure internal coherence and LMS deployability.

3.5. Outputs

The methodology results in a proposed program/module structure, a lesson-level instructional template, and a set of minimum implementation conditions (infrastructure, LMS functions, digital resources, and human support). These outputs are reported in Section 4 (Results).

4. Results

4.1. Proposed integrated program structure for digital career experience

This study proposes an integrated program structure by aligning two compulsory components in Vietnam's 2018 General Education Curriculum: Experiential Activities – Career Guidance (EA-CG) and Local Education of Ha Noi (LEHN). The proposed integration is intended to (i) support students' self-orientation and career awareness through competency-based experiential tasks, while (ii) situating career exploration within Hanoi's local socio-economic and cultural context as represented in LEHN.

Table 1: Differentiation and integration of EA-CG and LEHN (proposed mapping)

Aspect	Experiential Activities (EA-CG)	Local Education (LEHN)	Digital Integration Potential
Focus	Skills and personal career orientation	Knowledge of the local community/context	Digital portfolios, career maps
Grade 9 Goal	Career exploration and portfolio building	Socio-economic roles and local responsibilities	Virtual tours of local industries
Pedagogy	Project-based, active learning	Field trips and local investigations	Digital simulations, podcasts

Rather than claiming direct learning gains, this mapping articulates design affordances for how LMS-based activities (e.g., portfolios, structured reflections, virtual tours) may connect the two curriculum strands in a coherent digital lesson flow.

Table 2: Proposed integrated content for digital platforms

Component	Intersection of EA-CG & LEHN	Digital Elements
Self-Identification	Understanding self within local development	Online tests, digital journals
Career Research	Identifying traditional and new local occupations	Occupational videos, virtual tours
Real-world Interaction	Connecting with local workers/experts	Livestreams, video interviews
Simulation	Practicing skills in local economic models	Interaction scripts, digital design

4.2. A 10-period roadmap for Grade 9

Based on curriculum time allocation and the need to schedule career guidance before transition decisions, the study recommends a 10-period specialized module to be implemented primarily in Grade 9 Semester II. This roadmap should be interpreted as a design blueprint (not an evaluation result).

Table 3: Roadmap of the proposed 10-period digital career experience program

Period	Lesson Title	Core Content
1	Self-Exploration and Dreams	Identifying strengths/weaknesses; starting a "Digital journal"
2	Post-Secondary Pathways	Overview of High School, Continuing Education, and VET
4	Vocational Education Pathway	Benefits of VET; Hanoi's 40% streaming goal
6	Economy and Jobs in Hanoi	Traditional villages and industrial zones
7	Personal Training Plan	Setting learning goals for chosen career groups
8	Consultation & Decision Making	Seeking advice from teachers/family; final decision
10	Micro-skill Experience	Simulation of a specific skill (e.g., IT) on the LMS

4.3. Lesson scripting using a scaffolding flow

To reduce cognitive overload in online environments, each lesson is structured using a four-stage scaffolding flow (warm-up → exploration → practice/application → reflection/feedback). In this study, scaffolding is treated as a design principle guiding content chunking and sequencing, rather than a validated learning outcome.

- (1) Warm-up (5–10 mins): short triggers (mini-quizzes, short videos) to activate prior knowledge and interest.
- (2) Exploration (20–30 mins): multimedia content (infographics, guided interviews, virtual tours).
- (3) Practice/Application (15–20 mins): interactive tasks (forms, discussion prompts, guided simulation).
- (4) Reflection/Feedback (5–10 mins): summary, self-check, and reflective entries in digital journals.

4.4. Proposed assessment approach

Instead of high-stakes grading, the design emphasizes process-oriented qualitative assessment embedded in the LMS, primarily to support reflection and guidance conversations. This assessment approach is presented as an implementation option aligned with online course quality principles.

Table 4: Roadmap of the proposed 10-period digital career experience program

Assessment type	Objective	Implementation on LMS
Self-Assessment	Student self-reflection on skills/interests Support student reflection on interests/skills	Surveys, qualitative feedback scales
Teacher evaluation	Monitoring progress and participation	Rubrics, feedback on digital artifacts
Learning products	Measuring outcomes via specific tasks Capture outputs of tasks	Mind maps, short videos, simulation logs

4.5. Implementation conditions

To support adoption across schools with varying conditions, the study specifies indicative minimum requirements for implementation. These conditions should be interpreted as design constraints rather than confirmed feasibility in all school contexts.

Table 5: Indicative implementation conditions

Category	Specific Requirements
Infrastructure	Devices (PC/tablets) with stable internet (e.g., ≥ 3 Mbps as a practical baseline)
LMS Platform	Platforms supporting SCORM/H5P (or equivalent interactive standards)
Digital Resources	Short occupation videos, infographics, interaction scripts
Human Resources	Guidance teachers for coordination; technical staff for LMS support

6. Conclusion

In the context of educational digital transformation, developing an LMS-based career experiential module for lower secondary students appears timely, particularly for Grade 9 learners who are approaching a major educational transition point. This study does not evaluate effectiveness; instead, it proposes and documents a design-oriented module structure for Hanoi by integrating two compulsory curriculum components—Experiential Activities–Career Guidance (HĐTN-HN) and Local Education (GDĐP)—into a coherent set of microlearning units and lesson scripts. The proposed architecture organizes learning into three interconnected strands: (1) self-exploration and career orientation, (2) understanding local occupational realities relevant to Hanoi, and (3) practicing a representative “micro-skill” through LMS-based guided simulation. Lessons follow a scaffolding flow (warm-up, exploration, practice, reflection/feedback) and incorporate course-quality considerations (e.g., clarity of learning objectives, learner interaction, and feedback mechanisms). The study also outlines indicative implementation conditions, including baseline infrastructure, LMS functional requirements (e.g., support for interactive content standards), and human support roles. These conditions are presented as practical design constraints that schools may adapt based on their local resources.

Overall, the contribution of this work is a replicable design template for digitizing career experiential learning in lower secondary education. Future work should validate the design through pilot implementation and empirical evaluation (e.g., usability, learner engagement, guidance outcomes, and decision-making confidence) across diverse school settings in Hanoi.

Declaration of Conflicting Interests

The authors declare that there is no conflict of interest.

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