An Integrated Competency Framework for Educational Technologists: Synthesizing Thailand Standards and International Standards Across Three-Degree Levels

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***Abstract*— The rapid advancement of digital technologies, artificial intelligence (AI), and data-driven learning ecosystems has significantly expanded the professional roles of educational technologists, rendering many existing competency frameworks insufficient for contemporary practice. This study proposes an integrated competency framework that synthesizes established Thai competency models with internationally recognized standards to support competency-based curriculum design and professional development across higher education. A structured document-synthesis methodology was employed to analyze and integrate six competency frameworks, using the statistically validated Thai framework developed by Inkaew (2019) as the structural foundation. Comparative analysis was conducted to identify conceptual gaps and incorporate complementary competencies derived from international professional, occupational, and policy standards. The resulting framework comprises eight specialized competency domains supported by six transversal competencies, together with a tri-level progression model aligned with bachelor's, master's, and doctoral education. The proposed framework extends previous models by explicitly incorporating competencies related to educational technology policy and governance, AI and data ethics, strategic stakeholder communication, and educational entrepreneurship, while preserving the empirical strengths of the existing Thai framework. This integrated model provides a comprehensive conceptual foundation for curriculum development, competency assessment, and workforce preparation in educational technology. It also establishes the basis for the future development and empirical validation of a national competency assessment instrument for educational technologists in Thailand.**

Keywords*— *Educational Technology, Competency Framework, Competency-Based Education, Curriculum Development, AI Competencies, Educational Technologists

I. Introduction

Educational technology as a field of professional practice is being reshaped at a pace that few existing competency standards anticipated. Artificial intelligence, generative media, cloud-based learning platforms, and large-scale learning-analytics systems have shifted what it means to design, manage, and evaluate learning experiences, while simultaneously introducing new obligations around data ethics, algorithmic transparency, and institutional policy that earlier standards did not need to address [8].

In the Thai context, two frameworks have anchored professional and academic understanding of the educational technologist role. Thammetar (2003) [7] produced a set of 84 practice-based performance indicators organized around four functional areas, academic, production, service, and administrative work, that closely reflect day-to-day professional duties. Inkaew (2019) [3] subsequently developed a five-competency, fourteen-indicator model that was confirmed through confirmatory factor analysis (CFA) on a sample of 985 practitioners, giving it a degree of statistical validity that is uncommon among competency frameworks developed for this profession in Thailand. Both frameworks, however, were developed before recent shifts in the field became salient, and neither explicitly addresses technology policy and governance, data-ethics risk management, stakeholder-facing strategic communication, or entrepreneurial competencies related to educational-technology start-ups.

International frameworks offer partial remedies to these gaps but each has limitations of its own for direct adoption in Thailand. The AECT Standards [1] define the field comprehensively at the level of professional accreditation but are pitched at a level of generality that makes them difficult to operationalize into measurable indicators. ESCO and O*NET provide labor-market taxonomies that usefully separate occupation-specific skills from transversal, cross-functional skills, but they were not built around the educational-technology profession specifically. The ibstpi Instructional Designer Competencies [5] contribute an unusually detailed set of 22 competencies and 105 performance statements organized into a three-tier (Essential, Advanced, Managerial) structure, but their focus is narrower than the full scope of educational technology practice. The UNESCO ICT Competency Framework for Teachers, Version 3 [8] contributes a policy-and-systems perspective, organized around a three-level progression from Knowledge Acquisition to Knowledge Deepening to Knowledge Creation, that neither Thai framework nor the other international standards fully capture.

This paper addresses the following question: can a single, coherent competency framework be synthesized that (a) retains the statistical grounding of the strongest available Thai model, (b) closes the content gaps identified through comparison with international standards, and (c) supports a defensible three-level progression suitable for bachelor's, master's, and doctoral curriculum design? We report the synthesis method used to develop such a framework and present the resulting model, which comprises eight specialized competency domains, a six-component transversal competency layer, and a tri-scale progression alignment. The framework is intended, in subsequent work, to underpin a validated national assessment instrument; the present paper reports the conceptual synthesis stage only.

II. Related Competency Frameworks

This section reviews the six source frameworks in more depth, organized into three groups: the two Thai frameworks that anchor the model, the four international professional and labor-market frameworks that informed content elaboration, and the international policy framework that contributed the model's policy and governance perspective. A summary comparison is provided in Table 1 at the end of this section.

A. Thai Competency Frameworks

Thammetar (2003) [7]. This framework offers 84 practice-based performance indicators derived from an analysis of the day-to-day duties of practicing educational technologists in Thai educational institutions. The indicators are organized into four functional areas: academic work (e.g., instructional analysis and curriculum support), production work (media and material development), service work (equipment and consultation services provided to end users), and administrative work (unit-level planning and resource management). Because it was built from observed job tasks rather than from a theoretical competency taxonomy, this framework contributes strong ecological validity at the level of routine professional practice, and its four functional areas map closely onto CD3 (Design, Development & Production), CD4 (Utilization, Evaluation & Service), and CD5 (Leadership & Management) in the integrated model.

Inkaew (2019) [3]. This framework was developed specifically to identify measurable competency indicators for Thai educational technologists and was validated through confirmatory factor analysis (CFA) using a sample of 985 practitioners, a considerably larger and more rigorously analyzed sample than is typical for competency-model development in this field in Thailand. The model organizes competence into five broad areas: professional and content knowledge; professional characteristics and ethics; practice skills spanning both design/production and utilization/evaluation; leadership, management, and administration; and professional development and research. These five areas are further specified through fourteen indicators, each rated on a five-level behavioral scale. Because it is the only framework among the six with confirmed statistical structure at the individual-practitioner level in a Thai sample, it was adopted as the structural backbone of the integrated model (Section 3), with CD1, CD2, CD3, CD4, CD5, and CD8 tracing directly to its five competency areas.

B. International Professional and Labor-Market Frameworks

AECT Standards (2012) [1]. Published by the Association for Educational Communications and Technology following a five-year development and vetting process, the AECT Standards operationalize the field's 2008 consensus definition of educational technology into five accreditation-level standards: Content Knowledge, Content Pedagogy, Learning Environments, Professional Knowledge and Skills, and Research [1].The standards are widely used in North America to accredit graduate programs in instructional design and educational technology. Their principal contribution to the present synthesis was as a content-completeness checklist (Section 3, Stage 3): each of the five AECT standards was cross-mapped against the Thai backbone to verify that no major content area was entirely absent, which in turn helped justify the subsequent elaboration of the professional-knowledge and research components (CD1 and CD8).

ESCO [2]. The European Skills, Competences, Qualifications and Occupations classification, maintained by the European Commission, organizes European labor-market information around three interlinked pillars, occupations, skills/competences, and qualifications. Of particular relevance to this synthesis is ESCO's explicit separation of a transversal skills and competences pillar, covering skills and attitudes relevant across many occupations, from an occupation-specific skills pillar. This distinction directly motivated the addition of the six-component Transversal Competency (TC) layer in the integrated model (Section 4.2), since neither Thai framework maintained an equivalent separation.

O*NET [6]. Sponsored by the United States Department of Labor's Employment and Training Administration, O*NET OnLine provides detailed occupational profiles built around a content model that spans worker characteristics, worker requirements, experience requirements, and occupational requirements. Two O*NET occupational profiles were consulted directly for their relevance to educational technology: 25-9031.00 (Instructional Coordinators) and 13-1151.00 (Training and Development Specialists). O*NET's cross-functional skills category, covering basic skills, social skills, complex problem solving, resource management, systems skills, and technical skills, reinforced, alongside ESCO, the case for a dedicated transversal layer and directly informed the content of TC1 through TC6.

ibstpi Instructional Designer Competencies (ibstpi, 2012; Koszalka et al., 2013) [4],[5]. Developed by the International Board of Standards for Training, Performance and Instruction through a multi-year international validation process involving feedback from over 1,000 practitioners and scholars across the Americas, Europe, Asia, Australia/New Zealand, and Africa, this framework specifies 22 competencies and 105 performance statements across five domains, organized into three proficiency tiers, Essential, Advanced, and Managerial, that reflect career progression from novice to senior instructional-design roles. Its Design and Development, Evaluation and Implementation, and Management domains contributed detailed performance-statement language used to elaborate CD3, CD4, and CD5 respectively, and its three-tier structure forms one leg of the tri-scale progression alignment reported in Section 4.3.

C. International Policy Framework

UNESCO ICT Competency Framework for Teachers, Version 3 [8]. Developed by UNESCO in consultation with industry partners including Cisco, Intel, ISTE, and Microsoft, and building on earlier 2008 and 2011 editions, ICT-CFT v.3 specifies 18 competencies across six dimensions, understanding ICT in education policy, curriculum and assessment, pedagogy, application of digital skills, organization and administration, and teacher professional learning, each addressed at three progressively sophisticated levels: Knowledge Acquisition, Knowledge Deepening, and Knowledge Creation. Although designed primarily for classroom teachers, its policy dimension and three-level proficiency structure were the two elements most directly absent from both Thai frameworks. The policy dimension motivated the addition of CD6 (EdTech Policy & Governance) as an entirely new domain, and its three-level structure forms the second leg of the tri-scale progression alignment reported in Section 4.3. Table 1 summarizes the origin, scope, and specific contribution of each of the six frameworks reviewed above.

III. Methodology: A Structured Framework-Synthesis Approach

The framework was developed through a structured document-synthesis procedure comprising five stages, analogous to a conceptual scoping review with an explicit gap-analysis step. The synthesis followed five sequential stages, analogous to a conceptual scoping review with an explicit gap-analysis step.

Stage 1: Selection of source frameworks. Six frameworks were selected on the basis of (a) empirical/statistical validity (Inkaew, 2019), (b) professional consensus standing (AECT; ibstpi), (c) labor-market taxonomic breadth (ESCO; O*NET), and (d) policy relevance (UNESCO ICT-CFT). Frameworks lacking any of these four properties, or overlapping substantially with an already-selected framework, were excluded at this stage.

Stage 2: Adoption of a structural backbone. Inkaew's (2019) five-competency, fourteen-indicator model was adopted as the structural core because it is, to our knowledge, the only framework in the set that has been confirmed statistically at the level of the individual practitioner using a large Thai sample (N = 985). Adopting an already-validated structure as the backbone, rather than building a new structure from the international frameworks outward, was intended to preserve local statistical grounding while still allowing systematic enrichment from international sources.

Stage 3: Content-completeness check. The backbone was cross-mapped, domain by domain, against the five AECT Standards (2012), content knowledge, content pedagogy, learning environments, professional knowledge and skills, and research, to verify that no AECT domain was entirely unrepresented in the Thai structure. No domain was found completely absent, but the professional-knowledge and research domains were judged under-elaborated relative to AECT's specification, informing the later elaboration of CD1 and CD8.

Table 1. Foundational Frameworks and Standards Informing the Synthesis of the Educational Technology Competency Framework

Framework	Origin / Scope	Contribution to This Synthesis
Thammetar (2003)	Thai / organizational practice standards	84 practice-level performance indicators across four functional areas (academic, production, service, administrative)
Inkaew (2019)	Thai / individual competency, CFA-confirmed (N = 985)	Structural backbone: 5 competencies, 14 indicators, 5-level rating scale
AECT Standards (2012)	International / professional accreditation	5 standards used to verify content completeness (content knowledge, pedagogy, learning environments, professional knowledge, research)
ESCO	International / EU labor-market taxonomy	Occupation-Skills-Qualification structure; transversal-skills hierarchy
O*NET	International / US labor-market taxonomy	Detailed occupational profiles (25-9031.00; 13-1151.00) and cross-functional skills categories
ibstpi (Koszalka et al., 2013)	International / instructional-design profession	22 competencies, 105 performance statements, 3-tier structure (Essential/Advanced/Managerial)
UNESCO ICT-CFT v.3 (2018)	International / education policy	18 competencies across 6 dimensions x 3 levels (Acquisition-Deepening-Creation); policy and data-ethics content

Stage 4: Gap identification against international standards. Systematic comparison against ESCO, O*NET, ibstpi, and UNESCO ICT-CFT identified four areas present in one or more international frameworks but not explicitly represented in either Thai framework: (i) technology-policy literacy and governance (present in UNESCO ICT-CFT but absent from both Thai frameworks); (ii) data-ethics and cybersecurity risk management (implicit in UNESCO's ethics dimension but not operationalized in Inkaew's ethics indicators); (iii) stakeholder-facing strategic communication, identified by ibstpi-based research as one of the most market-demanded competencies for instructional designers, yet only loosely embedded within an existing Thai indicator; and (iv) entrepreneurial and business-feasibility competencies relevant to the growing EdTech start-up sector, which none of the six frameworks addressed in isolation but which repeated informal curriculum-committee discussion identified as a priority.

Stage 5: Model integration and progression alignment. New content addressing the four gaps was integrated either by extending existing domains (data ethics into the ethics domain; entrepreneurship into the professional-development domain) or by adding new domains (policy and governance; elevating stakeholder communication to a full domain), and a transversal competency layer was appended following the ESCO/O*NET precedent of separating occupation-specific from universal, cross-functional competencies. Finally, three published progression scales, Inkaew's five levels, UNESCO's three levels, and ibstpi's three tiers, were triangulated to examine whether they converged on a common number of developmental stages suitable for anchoring a three-level (bachelor's-master's-doctoral) curriculum structure.

3.1 Use of AI Assistance in the Synthesis Process

This research made use of Claude (Anthropic), a large language model-based AI assistant, as a synthesis aid throughout Stages 3-5 above: specifically, to support cross-mapping of the six source frameworks against one another, to help identify candidate content gaps for expert review, and to assist in drafting the resulting framework descriptions and this manuscript. The AI assistant was not used to generate, select, or validate the source frameworks themselves, nor to perform any statistical analysis; all framework-selection decisions, gap-analysis judgments, and the final integrated model were reviewed, verified, and approved by the human author(s), who take full responsibility for the accuracy, originality, and integrity of the work. This disclosure is provided in the interest of transparency and in line with emerging academic norms for reporting AI-assisted research and writing.

IV. The Proposed Integrated Competency Framework

4.1 Eight Specialized Competency Domains

Table 2 presents the eight specialized competency domains (CD1-CD8) that resulted from the synthesis. Three of the eight domains required substantive addition relative to the original Thai backbone: CD6 is an entirely new domain; CD7 was elevated in emphasis; and CD8 was extended to include entrepreneurial competencies.

Code	Domain	Primary Source(s)
CD1	Professional & Content Knowledge	Inkaew; AECT St.1; ESCO
CD2	Characteristics & Professional Ethics	Inkaew; UNESCO (ethics, privacy)
CD3	Design, Development & Production Skills	Inkaew; ibstpi (Design & Development); AECT St.2; Thammetar
CD4	Utilization, Evaluation & Service Skills	Inkaew; ibstpi (Evaluation); AECT St.3; Thammetar
CD5	Leadership, Management & Learning Environment	Inkaew; ibstpi (Management); UNESCO (Organization/Administration)
CD6	EdTech Policy & Governance	UNESCO (“Understanding ICT in Education Policy”)
CD7	Strategic Communication & Stakeholder Collaboration	Curriculum focus; ibstpi market-demand finding
CD8	Professional Development, Research & Entrepreneurship	Inkaew; AECT St.5 (Research)

Table 2. Mapping of Educational Technology Competency Domains to Their Primary Source Frameworks

CD1: Professional Knowledge in Educational Technology

Degree Level	Expected Competency
Bachelor’s	Explain the foundational theories and the five domains of the AECT framework—Design, Development, Utilization, Management, and Evaluation—and
	demonstrate foundational knowledge of computing and digital media, including Artificial Intelligence (AI), Big Data, Cloud Computing, and the Internet of Things (IoT).
Master’s	Analyze and integrate interdisciplinary knowledge from fields such as psychology, sociology, and communication to design and develop complex projects.
Doctoral	Generate new knowledge by integrating emerging technologies with learning theories and disseminate scholarly contributions through international academic forums.

CD2: Professional Attributes and Ethics

Degree Level	Expected Competency
Bachelor’s	Demonstrate systematic analytical thinking, adhere to professional codes of ethics, and understand the fundamental principles of personal data protection, including the Personal Data Protection Act (PDPA).
Master’s	Make decisions and address complex systemic problems, while assessing ethical risks related to data governance and cybersecurity in projects under their responsibility.
Doctoral	Serve as a role model for professional ethics at the national level and formulate institutional- or national-level frameworks for digital data ethics in education.

CD3: Media and Innovation Design and Development Skills

Degree Level	Expected Competency
Bachelor’s	Produce various types of media—including graphics, print materials, video, audio, and computer-based media

Degree Level	Expected Competency
	—in accordance with established quality standards, and design instruction based on the ADDIE model.
Master's	Design complex learning systems across multiple platforms, manage media production teams, and apply AI-generated media.
Doctoral	Conduct research and develop innovative solutions or novel prototype platforms for which established standards do not yet exist.

CD4: Utilization, Evaluation, and Service Delivery Skills

Degree Level	Expected Competency
Bachelor's	Utilize and evaluate media and innovations with target groups, and provide consultation and media/audiovisual equipment services that appropriately address users' needs, achieving a user satisfaction rate of at least 80%.
Master's	Design organization-wide internal and external evaluation systems and revise instructional solutions based on empirical data, in accordance with the IBSTPI competency framework.
Doctoral	Develop new evaluation models or methodologies that address the demands and complexities of digital contexts.

CD5: Leadership, Management, and Learning Environment

Degree Level	Expected Competency
Bachelor's	Demonstrate an understanding of the organization's strategic plans and design and manage learning environments at the classroom or project level.
Master's	Provide leadership in educational technology at the project or organizational level and formulate strategic plans, consistent with the professional responsibilities of an educational supervisor.
Doctoral	Play a leadership role in devising a technology strategy for the institution (UNESCO, Knowledge Creation level) and formulate institutional- or national-level policies for the educational technology ecosystem.

CD6: Educational Technology Policy and Governance

Degree Level	Expected Competency
Bachelor's	Demonstrate an understanding of national educational technology policies, such as Chapter 9 of the National Education Act, and their implications for professional practice.
Master's	Analyze institutional-level policies and formulate recommendations for their improvement, corresponding to the "Policy Application" level in the UNESCO framework.
Doctoral	Critically evaluate national-level policies, formulate recommendations for policy improvement, and design innovative educational technology policies, corresponding to the "Policy Innovation" level—the highest level in the UNESCO framework.

CD7: Strategic Communication and Stakeholder Collaboration

Degree Level	Expected Competency
Bachelor's	Communicate effectively, produce public relations materials, and coordinate with service users and multidisciplinary teams.
Master's	Develop organizational communication strategies and manage relationships with multiple stakeholder groups, including administrators, teachers, parents, and funders.
Doctoral	Develop organizational communication strategies and manage relationships with multiple stakeholder groups, including administrators, teachers, parents, and funders.

CD8: Professional Development, Research, Innovation, and Entrepreneurship

Degree Level	Expected Competency
Bachelor's	Plan personal professional development, establish foundational professional networks, and demonstrate an understanding of fundamental concepts related to EdTech businesses and startups.
Master's	Conduct applied research to improve professional practice, expand professional networks at the national level, and evaluate the business feasibility of educational innovations.
Doctoral	Produce original research and innovative prototypes for international publication using an R&D methodology comparable to the approaches described by Thammetar (2003) and Inkaew (2019), or establish and/or provide consultancy to an EdTech startup.

4.2 The Transversal Competency Layer

CD1-CD8 are all occupation-specific to educational technology. Both ESCO (whose structure separates a transversal-skills pillar from occupation-specific skills) and

O*NET (whose cross-functional skills category covers basic skills, social skills, complex problem solving, resource management, systems, and technical skills) suggest that a specialized competency model of this kind is incomplete without a parallel, universal baseline layer. We therefore added six transversal competencies (TC1-TC6): Digital & AI Literacy, Communication & Interpersonal Collaboration, Critical Thinking & Complex Problem Solving, Adaptability & Growth Mindset, Global & Cultural Competence, and Self-Management & Well-being. Each was deliberately worded to avoid overlap with the specialized domains, for example, TC1 (general digital/AI literacy expected of any working adult) is distinct from CD1 (deep, profession-specific technical knowledge), and TC2 (everyday interpersonal communication) is distinct from CD7 (organizational-level strategic communication strategy). We recommend that TC1-TC6 be delivered as a common core across all degree tracks rather than embedded within track-specific coursework, functioning as a connective layer across the specialized domains and across the range of career destinations associated with the field.

	Transversal Competency Group	Definition / Behavioral Examples	Rationale for Non-Overlap with Existing CDs
TC1	Digital & AI Literacy (General)	The ability to use contemporary digital and AI tools critically and appropriately in everyday life and work.	Distinct from CD1, which represents in-depth, specialized knowledge of educational technology. TC1 refers to foundational digital competencies that all citizens should possess.
TC2	Communication & Interpersonal Collaboration (General)	The ability to communicate and collaborate effectively with individuals from diverse backgrounds in everyday and workplace contexts.	Distinct from CD7, which focuses on professional and organizational communication strategies. TC2 represents foundational interpersonal communication and collaboration skills.
TC3	Critical Thinking & Complex Problem Solving	The ability to analyze problems that lack predetermined solutions and make informed decisions under conditions of incomplete or uncertain information across contexts.	Distinct from CD2, which is specifically anchored in the professional context of educational technology.
TC4	Adaptability & Growth Mindset	The ability to adapt to change and independently acquire new knowledge and skills through continuous lifelong learning.	Distinct from CD8, which concerns systematic professional development through professional networks, research, and entrepreneurial activities. TC4 represents a foundational mindset for adaptation and continuous learning.
TC5	Global & Cultural Competence	The ability to work effectively across cultures and understand diverse social, cultural, and contextual perspectives.	This competency is not explicitly represented in any of the existing CD competencies and therefore addresses a distinct competency gap.
TC6	Self-Management & Well-Being	The ability to manage time, regulate stress, and maintain personal well-being to support sustainable performance and long-term effectiveness at work.	This competency is not explicitly represented in any of the existing CD competencies and therefore addresses a distinct competency gap.

Table 3. The Transversal Competency Layer: Definitions and Distinctions from Specialized Educational Technology Competencies

4.3 Tri-Scale Progression Alignment for Degree-Level Design

A notable finding of the synthesis is that three independently developed progression scales converge on three developmental stages, providing convergent justification for a bachelor's-master's-doctoral curriculum structure (Table 4).

This convergence across a Thailand-specific, individually validated scale, an international policy-oriented scale, and an international professional-role scale offers a form of triangulated evidence, albeit conceptual rather than statistical at this stage, that a three-level curriculum structure is a defensible design choice for educational-technology programs spanning bachelor's to doctoral level.

Degree Level	Inkaew (Thai, 5 levels)	UNESCO ICT-CFT (3 levels)	ibstpi (3 tiers)
Bachelor's	Levels 1-2: Understanding + Application	Knowledge Acquisition	Essential
Master's	Levels 3-4: Analysis +	Knowledge Deepening	Advanced

Degree Level	Inkaew (Thai, 5 levels)	UNESCO ICT-CFT (3 levels)	ibstpi (3 tiers)
	Integration		
Doctoral	Level 5: New-knowledge creation + dissemination	Knowledge Creation	Managerial

Table 4. Crosswalk of Degree-Level Expectations and Competency Proficiency Levels Across Reference Frameworks

4.4 Illustrative Application: Career-Competency Alignment

To demonstrate the framework's practical utility for curriculum and career-guidance purposes, each competency domain was rated for its relative emphasis (●●● high, ●● moderate, ● basic) against ten career destinations commonly associated with educational-technology graduates. Table 4 presents a condensed excerpt of this alignment matrix; the transversal layer (TC) is rated uniformly high across all careers by design, since it represents a mandatory baseline rather than a differentiating factor.

Career	CD 1	CD 2	CD 3	CD 4	CD 5	CD 6	CD 7	CD 8	TC
Audiovisual Education Specialist	●	●●	●●	●●	●	●	●	●	●●
Learning Technology Specialist / Instructional Designer	●●	●●	●●	●●	●	●	●	●●	●●
Education Supervisor and Instructional Coach	●●	●●	●	●●	●●	●●	●	●●	●●
Educational Specialist / Curriculum Developer	●●	●●	●●	●●	●●	●●	●	●●	●●
Learning Experience Designer	●●	●●	●●	●●	●	●	●●	●●	●●
AI in Education Specialist	●●	●●	●●	●●	●	●●	●	●●	●●
Education Data Analyst	●●	●	●	●●	●	●●	●	●●	●●
EdTech Consultant / Product Manager	●●	●●	●●	●●	●●	●●	●●	●●	●●
Public Relations Specialist / Content Creator	●	●●	●●	●	●	●	●●	●	●●
Training & Development Specialist	●●	●●	●	●●	●●	●	●●	●●	●●

Table 5. Occupational Competency Profiles Across Educational Technology Careers

The full ten-career matrix across all fourteen constructs is available from the authors on request and is intended, in a subsequent institutional report, to inform elective-track design within the curriculum.

V. Discussion

The framework presented here makes two contributions. Theoretically, it is, to our knowledge, among the first attempts to integrate a statistically validated Thai competency model with four international standards spanning professional, labor-market, and policy perspectives, while explicitly separating occupation-specific competencies from a transversal baseline layer. This separation addresses a structural weakness noted in earlier versions of the Thai model, in which universal competencies (present in an early iteration) had been dropped during subsequent revisions and were not distinguished from profession-specific ones.

Practically, the framework offers two immediate applications. First, it provides a blueprint for competency-based curriculum design (for example, the Thai TQF/HEd "Mor Kor Or 2" course-specification documents), including a career-competency alignment matrix (omitted here for space) that maps the relative emphasis of each domain against ten representative career destinations, from instructional designer to EdTech product manager. Second, it provides the conceptual basis for a 70-item self-report assessment instrument, currently under development, intended to support the collection of a national sample and the derivation of Thai competency norms.

A further implication concerns research ethics and data governance. Because the forthcoming instrument relies on self-report data collected at national scale, any resulting study will need institutional ethics review, informed consent, and compliance with Thailand's Personal Data Protection Act (PDPA) throughout data collection and storage, a requirement that is itself consistent with the data-ethics content newly incorporated into CD2.

Several limitations should be noted. First, the framework is a conceptual synthesis; it has not yet been subjected to exploratory or confirmatory factor analysis, and the eight-domain, fourteen-construct structure proposed here is therefore a hypothesis to be tested rather than an empirically confirmed structure. Second, the Thai source frameworks [7], [3] were themselves developed prior to recent generative-AI-driven shifts in practice, so some indicators within the retained domains may still warrant updating even though the domain-level structure appears robust. Third, cross-cultural adaptation of items derived from ESCO, O*NET, ibstpi, and UNESCO ICT-CFT will require careful back-translation and content-validity review by Thai subject-matter experts before any instrument based on this framework can be considered valid for use in Thailand.

VI. Conclusion and Future Work

This paper reported the synthesis of an integrated competency framework for educational technologists that combines two Thai frameworks with four international standards, resulting in eight specialized competency domains, a six-component transversal layer, and a tri-scale progression alignment supporting bachelor's-to-doctoral curriculum design. The framework is intended as the conceptual foundation for a forthcoming assessment instrument and national norming study. Future work will (a) empirically test the proposed factor structure through exploratory and confirmatory factor analysis on a national sample stratified by region, institution type, and respondent status (student vs. working professional), (b) establish measurement invariance across respondent groups prior to any norm comparison, and (c) derive percentile- and T-score-based national norms suitable for both individual feedback and program-level evaluation. We invite collaboration from educational-technology programs and professional associations in Thailand and the wider region interested in contributing data toward this norming effort

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