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DESIGNING A COMPETENCY MODEL FOR DIGITAL PRODUCT DESIGNERS: A NON-FORMAL EDUCATION PERSPECTIVE

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The rapid evolution of digital technologies has created a sustained demand for professionals who can design user-centered digital products and services. Digital product designers occupy a unique position at the intersection of technology, business, and human behavior, requiring a complex set of competencies that spans technical skills, research methods, systems thinking, and communication abilities [1]. While formal higher education institutions have begun offering programs in this domain, a significant proportion of practicing professionals acquire their competencies through non-formal education pathways, including bootcamps, professional certifications, workshops, mentorship programs, and self-directed learning communities [2].

This creates a fundamental challenge: despite the growing role of non-formal education in shaping the digital design workforce, there is no systematically developed competency model that accounts for the specific conditions and mechanisms of professional competency formation outside formal educational settings. Existing competency frameworks, such as those proposed by the Nielsen Norman Group or the Interaction Design Foundation, are primarily practitioner-oriented and lack the methodological rigor required for educational program design [1].

The purpose of this paper is to outline a theoretical framework for developing a competency model for digital product designers that specifically addresses the conditions and mechanisms of non-formal education.

The competency-based approach has been extensively studied as a methodological foundation for professional education. In the Ukrainian context, foundational work by N. Bibik and O. Ovcharuk [3] established the conceptual framework for competency-based education, while L. Lukyanova and O. Anishchenko [4] have examined the theoretical and methodological foundations of adult education, including the role of non-formal learning. Internationally, M. Knowles, E. Holton, and R. Swanson [5] provided the andragogical framework that underpins much of non-formal adult education practice.

However, the intersection of competency-based design and non-formal education remains underexplored, particularly for emerging professions such as digital product design. Unlike established fields where professional standards are codified through regulatory bodies, digital product design lacks a unified competency standard, making the design of educational programs methodologically challenging [6].

We propose a three-layered framework for constructing a competency model in non-formal education contexts. The first layer involves *competency identification* through analysis of professional activity. Unlike formal education, where competencies are derived from educational standards, non-formal education must rely on direct analysis of professional practice. This requires a mixed-methods approach combining expert interviews, job posting analysis, and observation of professional communities [1; 6].

The second layer addresses *competency structuring*, organizing identified competencies into a hierarchical model that distinguishes between core competencies (applicable across roles), specialized competencies (role-specific), and meta-competencies (learning-to-learn capabilities). This distinction is particularly important in non-formal education, where learners often need to develop self-regulation and continuous learning abilities alongside domain-specific skills [5].

The third layer concerns *competency operationalization* – translating the model into observable, assessable outcomes that can guide program design. In non-formal education, this involves developing performance criteria that are practice-oriented and contextually authentic, moving beyond traditional knowledge-testing approaches toward portfolio-based and project-based assessment methods [3; 4].

The proposed research employs a sequential mixed-methods design. Phase 1 involves qualitative analysis: semi-structured interviews with 15–20 practicing digital product designers and educators to identify the competency landscape. Phase 2 uses quantitative methods: a survey of 150+ professionals to validate and prioritize identified competencies. Phase 3 synthesizes findings into a structured competency model and validates it through expert review panels comprising both practitioners and educational researchers.

The research is expected to produce: 1. a validated competency model for digital product designers structured for non-formal education program design; 2. a set of methodological recommendations for competency-based program design in non-formal education settings; 3. criteria for assessing competency formation outcomes in non-formal education contexts.

The competency-based approach provides a viable methodological foundation for designing professional training programs in non-formal education. However, its effective application requires adaptation to the specific conditions of non-formal learning: the absence of standardized curricula, the practice-oriented nature of learning activities, and the need for alternative assessment mechanisms. The proposed three-layered framework offers a systematic approach to constructing competency models that bridge the gap between professional practice requirements and educational program design in non-formal education settings.

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