

ACADEMIC STAFF TRAINING FOR ACADEMIC ENTREPRENEURSHIP IN THE UNIVERSITY'S PROFESSIONAL DEVELOPMENT SYSTEM: METHODOLOGICAL APPROACHES

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Annotation. The article presents methodological approaches that form the basis of training academic staff for academic entrepreneurship in the university system of professional development. As a result of a theoretical analysis of scientific and pedagogical literature and a generalisation of the results of previous studies, the feasibility of using systemic, synergistic, structural-functional and integrative methodological approaches in training academic staff for academic entrepreneurship is substantiated. Each of the above approaches performs a specific function within a holistic methodological framework that ensures the effectiveness of professional development in the conditions of transformation of the university environment. The systemic approach allows us to consider training for academic entrepreneurship as a multidimensional, hierarchically ordered system with clearly defined components, connections and expected results. It ensures the integrity, coherence, flexibility and openness of the educational process, as well as the result-oriented nature of training. The synergistic approach actualises the openness, nonlinearity and ability of the system to self-organise. It promotes the integration of interdisciplinary knowledge, creative design of individual trajectories of professional development, adaptability and coherence of educational processes. Academic entrepreneurship is considered as a synergistic system that forms an innovative environment of the university. The structural-functional approach provides the logic of interaction between the components of the professional development system, formalises readiness for academic entrepreneurship through motivational, cognitive, activity and personal components. It allows to synchronize the professional roles of teachers with the expected results, integrates formal, non-formal and informal learning, as well as ensure the sustainability and functionality of the academic environment. The integrative approach is implemented at the theoretical, methodological, content and organisational-pragmatic levels. It provides interdisciplinary integration of knowledge, harmonisation of the training content with professional functions, synchronisation of interlevel interaction and combination of theory and practice. This approach contributes to the formation of an innovative, collegial, project-based educational environment. The application of these approaches in combination allows us to form a methodologically sound model of academic staff training for academic entrepreneurship, which meets the challenges of modern educational policy, the needs of the knowledge economy, and the demands of society.

Keywords: academic staff; academic entrepreneurship; university; professional development system; training for academic entrepreneurship; systemic approach; synergistic approach; structural-functional approach; integrative approach.

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Підготовка науково-педагогічних працівників до академічного підприємництва у системі професійного розвитку університету: методологічні підходи

Анотація. У статті представлено методологічні підходи, покладені в основу підготовки науково-педагогічних працівників до академічного підприємництва у системі професійного розвитку університету. У результаті теоретичного аналізу науково-педагогічної літератури та узагальнення результатів попередніх досліджень обґрунтовано доцільність застосування системного, синергетичного, структурно-функціонального та інтегративного методологічних підходів у підготовці науково-педагогічних працівників до академічного підприємництва. Кожен із зазначених підходів виконує специфічну функцію в межах цілісної методологічної рамки, що забезпечує ефективність професійного розвитку в умовах трансформації університетського середовища. Системний підхід дозволяє розглядати підготовку до академічного підприємництва як багатовимірну, ієрархічно впорядковану систему з чітко визначеними компонентами, зв'язками та очікуваними результатами. Він забезпечує цілісність, узгодженість, гнучкість і відкритість освітнього процесу, а також результато-орієнтованість підготовки. Синергетичний підхід актуалізує відкритість, нелінійність і здатність системи до самоорганізації. Він сприяє інтеграції міждисциплінарних знань, творчому проектуванню індивідуальних траєкторій професійного розвитку, адаптивності та когерентності освітніх процесів. Академічне підприємництво розглядається як синергетична система, що формує інноваційне середовище університету. Структурно-функціональний підхід забезпечує логіку взаємодії між компонентами системи професійного розвитку, формалізує готовність до академічного підприємництва через мотиваційний, когнітивний, діяльнісний та особистісний компоненти. Він дозволяє синхронізувати професійні ролі викладачів із очікуваними результатами, інтегрувати формальне, неформальне та інформальне навчання, а також забезпечити сталість і функціональність академічного середовища. Інтегративний підхід реалізується на теоретичному, методологічному, змістовому та організаційно-прагматичному рівнях. Він забезпечує міждисциплінарну інтеграцію знань, гармонізацію змісту підготовки з професійними функціями, синхронізацію міжрівневої взаємодії та поєднання теорії з практикою. Такий підхід сприяє формуванню інноваційного, колегіального, проектного освітнього середовища. Застосування зазначених підходів у комплексі дозволяє сформувати методологічно обґрунтовану модель підготовки науково-педагогічних працівників до академічного підприємництва, що відповідає викликам сучасної освітньої політики, потребам економіки знань та запитам суспільства.

Ключові слова: науково-педагогічні працівники; академічне підприємництво; університет; система професійного розвитку; підготовка до академічного підприємництва; системний підхід; синергетичний підхід; структурно-функціональний підхід; інтегративний підхід.

Introduction

Universities are increasingly positioning themselves as pivotal agents of innovation, integrating educational, research, and entrepreneurial activities within their institutional missions. In this context, academic entrepreneurship is acquiring strategic significance, reshaping the traditional roles of academic staff and imposing new demands on their professional competencies. However, the effective integration of entrepreneurial dimensions into the academic environment is unattainable without the deliberate training of personnel capable of operating at the intersection of science, education, and business.

Despite growing interest in academic entrepreneurship, the methodological foundations underpinning the training of academic staff within university professional development systems remain insufficiently explored. Existing practices are often fragmented, intuitive, or borrowed from adjacent domains, which complicates their adaptation to the specificities of higher education. The absence of clearly defined methodological orientations constrains the systematic development of entrepreneurial readiness among educators, diminishes the efficacy of educational interventions, and impedes the assessment of their outcomes.

Accordingly, there is an urgent need to investigate and conceptualise methodological approaches that may serve as a foundation for constructing a coherent model of academic staff training for entrepreneurial engagement. Such analysis will not only delineate the theoretical underpinnings of this training but also ensure its practical relevance, institutional alignment, and strategic direction. The study of methodological approaches is thus critically important for shaping an effective system of professional development capable of sustaining the university's innovative potential amid global transformations.

A substantial body of scholarly work has been devoted to the investigation of methodological approaches and their application in the professional development of educators, including the integrative [1, 7, 12, 14], synergetic [4, 9, 13, 18, 19], structural-functional [2, 5, 16, 20], and systemic [8, 10, 11, 15] approaches.

The formulation of the article's purpose. The purpose of this article is to substantiate the methodological approaches underpinning the training of academic staff for engagement in academic entrepreneurship within the university's professional development system.

Results

A thorough analysis of scholarly literature in the field of pedagogy, dedicated to the study of professional development and the training of educators from the perspective of lifelong learning, reveals that researchers advocate for a diverse range of methodological approaches to address this issue. Based on a synthesis of research findings, Lynova and Bulvinska identify three methodological levels and their corresponding approaches to the professional development of academic staff. Specifically, at the philosophical level, they distinguish cognitive, anthropological, axiological, systemic, synergistic, and anthropocentric approaches; at the pedagogical level, approaches related to lifelong learning, humanisation, andragogy, competency-based, and learner-centred paradigms; and at the psychological level, activity-based, creative, and personal development approaches [20]. In our view, this classification requires refinement, as it conflates methodological approaches with principles of professional development, thereby obscuring the conceptual boundaries between them.

According to Kotvitska, Olkhovska, and Kaidalova, the professional development of academic staff should be grounded in the application of methodological approaches such as the systemic, andragogical, acmeological, personal, integrative, activity-based, competency-based, and cultural approaches [10, p. 76]. In his doctoral thesis, Zahura emphasises the relevance of anthropocentric, andragogical, interdisciplinary, paradigmatic, systemic, synergistic, competency-based, acmeological, axiological, cultural, activity-based, and learner-centred approaches [8, p. 106].

Drawing upon the contributions of both theorists and practitioners in the field of education, and in alignment with the focus of this study, we substantiate the application of the following methodological approaches: systemic, synergistic, structural-functional, and integrative.

The systemic approach and its application in the professional training and development of educators have been extensively explored in scholarly literature. This approach is understood as "a direction in research methodology that involves the study of an object as a holistic set of elements within a network of relationships and interconnections, i.e., the consideration of the object as a system" [15, p. 14]. A system, in turn, is defined as "a set of elements that are interrelated and interconnected, forming a certain integrity and unity" [15, p. 14].

Based on the analysis of previous research findings, it appears logical to conceptualise the training of academic staff for engagement in academic entrepreneurship, which is inherently multidimensional and interdisciplinary, as a system characterised by the following features:

- holism: the presence of structural components and interrelations among them, the functional purpose of which is directed towards achieving the overarching goal, namely, the formation of academic staff readiness for entrepreneurial activity;
- integrativity: the comprehensive integration of educational, research, innovation, entrepreneurial, infrastructural, and administrative components, alongside continuous improvement through monitoring, reflective practice, and feedback mechanisms;
- process alignment: the synchronisation of readiness formation through modular learning, the use of pedagogical tools, and diverse learning formats;
- flexibility and openness: the utilisation of both internal (academic) and external environmental resources within which the university operates, including legislative and regulatory frameworks, national economic demands, labour market requirements, and societal expectations; as well as the incorporation of formal, non-formal, and informal learning modalities;
- outcome orientation: the identification of expected learning outcomes and clear evaluation criteria, grounded in the application of insights from various domains of scholarly knowledge.

The legitimacy of our reasoning is corroborated by a publication which asserts that, “...when examining an organisation as a socio-economic system, the following system-forming factors and properties may be distinguished: the organisation as a holistic system; the presence of distinct subsystems constituting the organisation; a shared overarching goal uniting all elements and subsystems; the subordination of individual goals to the system’s common objective and the awareness of each actor of their tasks and the overall purpose; the fulfilment of functions by each element in accordance with assigned tasks; relations of subordination and coordination among elements and subsystems (i.e., the hierarchical principle of structure and governance); the existence of feedback between the controlling and controlled subsystems; and a significant dependence on the external environment” [11, p. 18].

We concur with the researcher’s view that “the systemic approach enables the identification of integrative systemic properties and qualitative characteristics. That is, the study of pedagogical regularities in teacher training is conducted through the development of a holistic integrative model, which examines systems of objects and allows for the delineation of various essential functions, elements, components, their interrelations and connections, system-forming factors, and key conditions for the functioning of diverse pedagogical systems in both static and dynamic dimensions” [6, p. 73].

At the same time, we acknowledge the significance of the synergistic approach within our study, which has gained considerable traction in the training of contemporary educators [18, 19]. Scholarly works emphasise that “the growing popularity of synergetics today is attributable to its emergence as a language of interdisciplinary communication, intelligible to specialists in mathematics, physics, chemistry, biology, psychology, and other fields, although each interprets synergetic models in their own way” [18, p. 417].

Kyrychenko and Prosina highlight “the synergistic nature of education and the influence of synergetics on the functioning of its individual components” [9, p. 16] and further substantiate the application of the synergistic approach, which “enables the transformation of a static system of postgraduate education into an active, dynamic, and continuously evolving system of formal and non-formal teacher education, grounded in principles of self-organisation, non-linear thinking, creative design of individual professional development, and the construction of diverse trajectories following personal needs, with a focus on the individual and their professional role within social systems” [9, p. 25].

Given that “education, as a social system and societal institution, exhibits openness and self-organisation, since any social system is inherently a non-linear open system which, under external influences, may qualitatively transform its internal structure and evolve in a particular direction, an idea reflected in the domain of pedagogical reflection” [4, p. 113], we substantiate

the application of the synergistic approach in training academic staff for engagement in academic entrepreneurship, based on the following considerations:

- the academic environment of the contemporary university, and, by extension, the professional development system embedded within it, constitutes a complex, open, and non-linear system, continuously evolving under the influence of internal and external factors, societal demands, and the imperatives of the knowledge economy;
- academic entrepreneurship, by its very nature, represents a synergistic system that relies on the capacity of academic staff for self-organisation, adaptability, creative potential, and scientific-creative thinking;
- the organisation of academic staff training for entrepreneurial activity necessitates the application of synergetics and the integration of interdisciplinary knowledge and innovation, alongside the dynamic renewal of content and coherence in both the use of organisational forms and teaching methods, and the synchronisation of professional activities in pursuit of collective goals.

In this context, “academic entrepreneurship is a synthesis of scientific research, educational technologies, innovation, and the entrepreneurial environment, generating a synergistic effect for the development of an innovation-driven economy” [13, p. 345].

The scholarly literature in pedagogy highlights the effectiveness of the structural-functional approach, particularly in the initial professional training of educators [5], as well as in their postgraduate education and continuing professional development [12]. Within the context of this study, we argue for the relevance of applying the structural-functional approach, as it is closely aligned with the systemic approach. Its principal value lies in its capacity to elucidate the logic of interaction among the components of the university’s professional development system, within which the training of academic staff for academic entrepreneurship is implemented. Specifically, this approach enables:

- the structuring and formalisation of academic staff readiness for academic entrepreneurship, encompassing motivational, cognitive, activity-based, and personal components; synchronisation with professional roles and functions, expected outcomes, and hierarchical ordering (lecturer – department – faculty/institute – university – national education system – international higher education space);
- the interrelation of formal, non-formal, and informal learning as integral dimensions of academic staff training for entrepreneurial engagement;
- the interdependence and functional coherence of content, organisational forms and teaching methods, resource provision, and institutional mechanisms underpinning the training of academic staff for academic entrepreneurship;
- the assurance of continuity and reproducibility of the educational, research-innovation, and administrative components of the university’s academic environment in which the training is carried out.

Our reasoning is supported by the work of domestic scholars who assert that the structural-functional approach is grounded in “the ideas of integrity, structure, and functionality” [2, p. 33], and in “the principle of identifying “units” as structurally segmented wholes, wherein each structural element possesses a specific functional purpose. The whole is thereby decomposed into “units” that encapsulate the essential properties characteristic of the whole itself” [16, p. 34].

This study places particular emphasis on the application of the integrative approach in training academic staff for engagement in academic entrepreneurship. The integrative approach has been widely examined in the context of educators’ professional training [14], the development of their readiness to perform professional functions [1], and their continuing professional development [17].

We are particularly aligned with the conclusions drawn by Dubasenuk and Vozniuk, who advocate for the consideration of the professional and personal development of the modern

educator through the lens of the integrative approach. They identify several core conceptual foundations of this approach: “civilisational foundations, which are shaped by the societal demand for competent professionals in contemporary contexts; activity-based and personal foundations, which reflect humanity’s transition into the information age; systemic-scientific and methodological foundations, which are informed by the current critical phase in the development of science as both a form of social consciousness and an applied domain of life transformation” [7, p. 19]; “developmental and profesiological foundations, which are grounded in general scientific patterns of human development, whereby professional growth is realised through the continuous formation of the educator as a professional; paradigmatic foundations, which are determined by the aforementioned profound civilisational transformation of modern life, marked by a crisis in the current educational system and situated within the broader context of global civilisational disruption [7, p. 20].

These foundations collectively underscore the relevance of the integrative approach as a methodological basis for training academic staff to navigate the complex, interdisciplinary, and innovation-driven demands of academic entrepreneurship.

Considering that “an entrepreneurial academic environment fosters the transformation of traditional universities into scientific-educational hubs capable of integrating research and educational achievements into practical domains” [3, p. 125], and in light of prior scholarly investigations, we argue the integrative approach to be the most appropriate strategy for training academic staff for academic entrepreneurship. This approach is operationalised across four interrelated levels:

- theoretical level: this involves interdisciplinary integration of theories and concepts from diverse fields of knowledge, including philosophy, economics, sociology, psychology, and pedagogy;
- methodological level: at this level, a holistic system for training academic staff for academic entrepreneurship is constructed, grounded in a range of methodological approaches, namely, systemic, structural-functional, integrative, synergistic;
- content level: this entails the design of a coherent body of knowledge for academic entrepreneurship training, structured around interconnected components. It ensures the systemic nature of knowledge through the development of a flexible knowledge system characterised by qualitatively novel features, and aligns this system with the professional functions of academic staff;
- organisational-pragmatic level: this level ensures the linkage between theory and practice in academic entrepreneurship training. It involves synchronising multi-level interactions (individual, departmental, faculty, institutional), and implementing organisational forms and teaching methods that foster innovative, collegial, and project-based collaboration among academic staff.

Conclusions

As a result of a theoretical analysis of scholarly literature in the field of education and the synthesis of prior research findings, the relevance of applying systemic, synergetic, structural-functional, and integrative methodological approaches to the training of academic staff for engagement in academic entrepreneurship has been substantiated. Each of these approaches fulfils a distinct function within a coherent methodological framework that ensures the effectiveness of professional development amid the transformation of the university environment.

The systemic approach enables the conceptualisation of academic entrepreneurship training as a multidimensional, hierarchically structured system with clearly defined components, interrelations, and anticipated outcomes. It ensures the integrity, coherence, flexibility, and openness of the educational process, as well as its orientation towards measurable results. The synergistic approach foregrounds openness, non-linearity, and the

system's capacity for self-organisation. It facilitates the integration of interdisciplinary knowledge, the creative design of individual professional development trajectories, adaptability, and the coherence of educational processes. Academic entrepreneurship is thus understood as a synergistic system that fosters an innovative university environment.

The structural-functional approach provides a logical framework for the interaction between components of the professional development system. It formalises readiness for academic entrepreneurship through motivational, cognitive, activity-based, and personal components. This approach enables the synchronisation of academic roles with expected outcomes, the integration of formal, non-formal, and informal learning, and the sustainability and functionality of the academic environment.

The integrative approach is implemented across theoretical, methodological, content-related, and organisational-pragmatic levels. It supports interdisciplinary knowledge integration, harmonisation of training content with professional roles, synchronisation of multi-level interactions, and the alignment of theory with practice. This approach contributes to the development of an innovative, collegial, and project-oriented educational environment.

The combined application of these approaches allows for the construction of a methodologically grounded model for training academic staff for academic entrepreneurship, one that responds to the challenges of contemporary educational policy, the demands of the knowledge economy, and the expectations of society.

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