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Interdisciplinary Approach in Educational Management Science: Theoretical Foundations and Comparative Analysis of the Educational Management Program at the National Academy of Education Management, Vietnam

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Abstract---This study examines the interdisciplinary foundations of educational management science through a qualitative analysis of the undergraduate, master's, and doctoral programs in Educational Management at the National Academy of Education Management (NAEM), Vietnam. Drawing from both international theoretical frameworks and official curricula from 2024 to 2025, the research investigates how interdisciplinary integration is structured across academic levels and how it supports leadership, innovation, and sustainable development in education. The findings reveal that NAEM's programs form a coherent vertical system based on seven thematic domains: management and leadership, systems science, economics and policy, sociology and organizational culture, improvement science, educational technology and data analytics, and global and transdisciplinary perspectives. The study shows that interdisciplinarity serves as both a theoretical foundation and a strategic framework linking theory, research, and practice in the professional development of educational leaders. The discussion emphasizes that the programs exemplify Mode 2 Knowledge Production (Gibbons et al., 1994), where knowledge emerges through the interaction of academic inquiry, professional practice, and policy contexts. The study concludes with recommendations to strengthen theoretical frameworks, promote interdisciplinary research networks, and expand international collaboration to enhance the global standing of Vietnam's educational management science.

Keywords---Educational management science, Interdisciplinary curriculum, Systems thinking, Leadership for learning, Data-driven governance, Improvement science, National Academy of Education Management, Vietnam.

Introduction

Educational management has gradually evolved from a practice-oriented administrative function into a distinct academic field that integrates theory, policy, and leadership for systemic educational improvement. During the late

twentieth and early twenty-first centuries, scholars began to view educational management not simply as the application of organizational principles to schools but as a complex and context-dependent field of inquiry that draws upon economics, sociology, systems science, and educational theory (Bush, 2007; Lunenburg & Ornstein, 2021). This transition has marked the emergence of what may be described as **educational management science**, where interdisciplinary inquiry becomes a defining characteristic rather than a methodological choice. In this sense, the study of educational management requires the synthesis of multiple domains of knowledge to respond effectively to the increasingly dynamic, data-informed, and innovation-driven nature of education in the twenty-first century (Fullan, 2020; Hallinger, 2011).

The concept of **interdisciplinarity** provides the theoretical foundation for this transformation. According to Klein (1990), interdisciplinarity represents the systematic integration of insights from distinct disciplines to generate new frameworks that transcend traditional academic boundaries. Nicolescu (2002) further expands this idea through the notion of *transdisciplinarity*, emphasizing the fusion of scientific, social, and humanistic dimensions in addressing complex problems. Educational management, positioned at the intersection of leadership, pedagogy, and organizational theory, exemplifies this integrative approach. It draws simultaneously from systems thinking (Meadows, 2008), organizational culture (Schein, 2010), learning organizations (Senge, 2000), and communities of practice (Wenger, 1998), each contributing to the holistic understanding of how education systems evolve, adapt, and sustain improvement.

Gibbons et al. (1994) describe this mode of knowledge creation as **Mode 2 Knowledge Production**, where knowledge emerges in the context of application through interactions among academia, practitioners, and policy makers. This orientation challenges the traditional “Mode 1” model of disciplinary and theoretical research by embedding inquiry within real-world contexts of practice. In educational management, this implies that the field is no longer confined to theoretical administration but becomes a site for co-production of knowledge across institutional, technological, and cultural dimensions (Bryk et al., 2015; Tsalko et al., 2024). The interdisciplinary character of educational management thus provides both the epistemological foundation and the methodological pathway for linking leadership, policy, and innovation to educational improvement.

Within the Vietnamese context, this perspective gains renewed relevance. As the education system undergoes reform toward autonomy, accountability, and digital transformation, there is an urgent need to reconceptualize the training and professional development of educational leaders and managers. The **NAEM** plays a central role in this process through its programs in educational management at undergraduate, master’s, and doctoral levels (National Academy of Education Management, 2024, 2025). These programs reflect a growing awareness that managerial competence must extend beyond administrative skills to include analytical, systemic, and ethical dimensions aligned with the interdisciplinary nature of modern educational governance.

However, despite these advances, the field still lacks a comprehensive framework that systematically defines and operationalizes interdisciplinarity within educational management curricula in Vietnam. Most existing studies have focused on leadership or administrative aspects, leaving the epistemological structure of educational management science underexplored. Moreover, comparative analyses between Vietnamese programs and international standards, such as those established by the **Organisation for Economic Co-operation and Development (OECD, 2023)** and **UNESCO**, remain limited. Therefore, this study aims to establish a theoretical foundation for the interdisciplinary approach in educational management science and to conduct a comparative analysis of the NAEM’s curricula. By doing so, it seeks to contribute to the ongoing effort to position educational management as an integrative scientific discipline that supports sustainable educational innovation and leadership development in Vietnam and beyond.

Theoretical Framework

Concept and Nature of the Interdisciplinary Approach

The interdisciplinary approach represents a paradigm shift in the way knowledge is generated and applied in contemporary educational management. Rather than confining inquiry within the boundaries of a single discipline, interdisciplinarity seeks to integrate concepts, theories, and methods from diverse fields to address complex and multifaceted problems in education. Klein (1990) describes interdisciplinarity as both a philosophy and a method of inquiry that transcends disciplinary fragmentation, fostering the synthesis of perspectives across fields such as management science, education, psychology, economics, sociology, and technology. Within educational management, this approach allows for a more holistic understanding of how schools, institutions, and systems operate within broader social and technological contexts (Martins et al., 2019).

From a theoretical standpoint, the interdisciplinary approach is closely aligned with the model of Mode 2 Knowledge Production proposed by Gibbons et al. (1994). This model contrasts with the traditional “Mode 1”

paradigm of disciplinary research by emphasizing knowledge that is contextualized, collaborative, and application-oriented. Knowledge is not produced in isolation but emerges from interaction between academia, professional practice, and policy-making communities. Within educational management, such an approach encourages dynamic dialogue between theory and practice, allowing managerial decisions to be informed by empirical evidence, systems thinking, and social understanding. It positions educational management as a living science that continuously evolves through reflexive learning and innovation.

The interdisciplinary approach also builds upon the principles of systems science, which views educational organizations as complex adaptive systems characterized by interconnectedness and continuous feedback (Meadows, 2008; Senge, 2000). This perspective broadens the scope of educational management by emphasizing relationships among leadership, culture, data, and technology. As Fullan (2020) argues, effective educational change requires system-wide thinking that bridges leadership theory, policy reform, and organizational learning. By integrating these dimensions, interdisciplinarity enables educational managers to develop sustainable strategies for improvement and transformation.

In addition, interdisciplinarity encourages educational institutions to foster *communities of practice* where shared learning, collaboration, and innovation are cultivated (Wenger, 1998). Such communities blur the lines between disciplines and roles, facilitating knowledge exchange across academic, administrative, and policy contexts. This participatory form of knowledge creation aligns with the notion of *learning organizations* (Senge, 2000), where continuous learning becomes the foundation for institutional development.

In the Vietnamese context, the interdisciplinary perspective has become increasingly relevant to educational management training and reform. The National Academy of Education Management (2024, 2025) has explicitly incorporated interdisciplinary structures into its undergraduate, master's, and doctoral programs in Educational Management. These programs integrate management theory, educational leadership, policy analysis, data science, and systems thinking, reflecting a national effort to align higher education with the demands of digital transformation and sustainable development. This evolution demonstrates how interdisciplinarity serves as both a conceptual foundation and a strategic framework for cultivating educational leaders who can navigate complexity, make evidence-informed decisions, and lead innovation in a rapidly changing educational environment.

Ultimately, the interdisciplinary approach embodies the convergence of theory, practice, and context. It connects the analytical precision of management science with the human-centered orientation of education, the empirical rigor of economics and data analytics with the reflective depth of philosophy and ethics. Through this synthesis, educational management emerges not merely as an administrative practice but as a transformative science aimed at improving the quality, equity, and adaptability of education systems in the twenty-first century (Daniëls et al., 2019).

Major Academic Schools within Interdisciplinary Educational Management Science

Management and Educational Leadership. This school examines how leadership shapes learning, organizational direction, and professional culture. Contemporary work moves from authority-centered models toward learning centered leadership, emphasizing shared purpose, distributed influence, and instructional improvement (Bush, 2007; Hallinger, 2011; MacBeath, 2006; Lunenburg & Ornstein, 2021). Within this perspective, effective educational management aligns strategy, people, and pedagogy so that managerial decisions directly support teaching and learning.

Systems Science and Organizational Learning. Systems thinking views educational institutions as complex adaptive systems characterized by interaction, feedback, and non-linear change. Foundational ideas highlight leverage points, collective inquiry, and continuous reflection as drivers of improvement across classrooms, schools, and systems (Senge, 2000; Meadows, 2008). Building on this view, research on system change argues that sustainable reform depends on coherence among structure, culture, and purpose at multiple levels of governance (Fullan, 2020).

Economics and Public Policy. This school connects educational management with economic reasoning and policy design. It investigates efficiency, equity, and returns on investment, and it advances the use of comparative indicators and rigorous evaluation for decision-making (OECD, 2023). Canonical contributions in the economics of education inform cost-effectiveness analysis and human capital approaches, while policy studies provide tools for agenda setting, implementation, and accountability in diverse contexts (Hanushek & Woessmann, 2011; Ladd, 2007; Hallinger, 2013; Hallinger & Kovačević, 2019).

Sociology and Communities of Practice. Sociological perspectives illuminate how norms, identities, and relationships shape organizational life. Communities of practice explain professional learning as participation in shared activities that construct meaning and expertise over time (Wenger, 1998). Complementary work on organizational culture shows how underlying assumptions and values guide behavior and mediate change efforts in

schools and universities (Schein, 2010). Together, these frameworks position management as the cultivation of culture and collaboration rather than only supervision and control.

Improvement Science. Improvement science links research and practice through iterative cycles that test ideas, study variation, and spread effective solutions across contexts. Networked improvement communities formalize collaboration among practitioners, researchers, and policy actors to address persistent problems of practice with disciplined inquiry (Bryk et al., 2015). Within educational management, this school provides design principles for evidence-guided change that are sensitive to local conditions and system-level constraints.

Educational Technology, Data, and Analytics. This school investigates how digital tools and data ecosystems support leadership, planning, and quality assurance. International reviews emphasize data literacy, dashboard use, and analytic capability as core competencies for contemporary educational managers (OECD, 2023). Recent scholarship demonstrates that applications of data science can enhance diagnosis, prediction, and evaluation while requiring strong ethical frameworks and professional judgement (Tsalko et al., 2024).

Interdisciplinary, Transdisciplinary, and Global Perspectives. This school provides the integrative frame for the field. Interdisciplinarity synthesizes concepts and methods across domains to create new knowledge structures, while transdisciplinarity links academic inquiry with societal needs and stakeholder knowledge (Klein, 1990; Nicolescu, 2002). The Mode Two view of knowledge production conceptualizes research as context-driven and collaborative, connecting universities with practice and policy communities to address complex educational challenges in diverse cultural settings (Gibbons et al., 1994; Hallinger, 2020).

Synthesis for curriculum and program design

Together, these seven schools establish educational management as a science that integrates leadership, systems thinking, economics, sociology, improvement methodology, and data-informed technology within a global and transdisciplinary frame. This synthesis offers a coherent foundation for designing curricula and learning outcomes across undergraduate, master's, and doctoral programs at the National Academy of Education Management, ensuring alignment between theory, evidence, and professional practice (National Academy of Education Management, 2024, 2025).

The Three-Layer Structure of Interdisciplinary Knowledge in Educational Management

The interdisciplinary nature of educational management can be conceptualized through a three-layer framework that reflects the depth and integration of knowledge within the discipline. This structure, grounded in both theory and practice, emphasizes the progressive synthesis of ideas from foundational disciplines toward applied and ethical dimensions of leadership and innovation in education (Thoyib et al., 2021).

The foundational layer establishes the core intellectual base of educational management. It draws from management science, education, and systems theory, providing the theoretical tools necessary to understand organizations as purposeful, adaptive, and learning-oriented systems. At this level, management principles are combined with pedagogical theories to address fundamental questions about how educational institutions function, make decisions, and pursue improvement. Systems thinking (Senge, 2000; Meadows, 2008) plays a crucial role in this layer by fostering an understanding of interdependence and feedback mechanisms across educational ecosystems.

The intermediate layer extends this foundation by integrating policy studies, economics, and sociology, thereby linking educational management to broader social and institutional contexts. Economics introduces the concepts of efficiency, equity, and human capital, guiding resource allocation and strategic investment in education (Hanushek & Woessmann, 2011; OECD, 2023). Policy studies, meanwhile, provide frameworks for governance, accountability, and reform, ensuring that management practices are aligned with national and international education priorities. Sociology contributes by illuminating the cultural and organizational dimensions of schools and universities, as well as the dynamics of collaboration, motivation, and professional identity (Wenger, 1998; Schein, 2010). Together, these disciplines equip educational managers with the capacity to analyze complex systems of policy, finance, and social interaction.

The integrative layer represents the highest level of interdisciplinary synthesis, where knowledge from technology, data analytics, ethics, and sustainable development converges. Educational management at this stage becomes an evidence-informed and socially responsible practice. The rise of educational technology and data science has enabled more precise decision-making through predictive analytics and real-time monitoring (Tsalko et al., 2024; OECD, 2023). However, these advancements must be guided by ethical principles and sustainability goals to ensure

that innovation serves equity, inclusion, and long-term institutional resilience. This layer, therefore, embeds ethical reasoning and sustainability literacy as essential competencies for educational leaders navigating the challenges of digital transformation and global change (Fullan, 2020; Nicolescu, 2002).

The three layers are not hierarchical but interactive and recursive. Foundational theories inform policy and practice, while empirical data and ethical reflection refine theoretical understanding. Such a model embodies Gibbons et al.'s (1994) concept of Mode 2 Knowledge Production, where knowledge emerges through collaboration among academia, policy makers, and practitioners. Within this framework, educational management evolves from a technical function into an integrative science that unites management, systems thinking, and social responsibility for continuous improvement and innovation.

Table 1
The Three-Layer Structure of Interdisciplinary Knowledge in Educational Management

Knowledge Layer	Core Domains	Integrative Focus	Representative Theorists
Foundational Layer	Management science, education, systems theory	Establishing the conceptual and methodological base for understanding educational organizations as dynamic systems	Senge (2000); Meadows (2008); Bush (2007)
Intermediate Layer	Policy, economics, sociology	Connecting management with policy, governance, economic efficiency, and social interaction	Hanushek & Woessmann (2011); Wenger (1998); Schein (2010)
Integrative Layer	Technology, data, ethics, and sustainable development	Synthesizing data-driven decision making with ethical leadership and sustainability principles	Tsalko et al. (2024); OECD (2023); Nicolescu (2002); Fullan (2020)

Methodology

This study adopts a qualitative research design that combines document analysis and content analysis to examine how the interdisciplinary approach is conceptualized and operationalized in educational management programs at the NAEM. The methodological framework aligns with the *Mode 2 Knowledge Production* perspective (Gibbons et al., 1994), emphasizing contextualized and practice-oriented inquiry.

Research Design

The research is qualitative in nature, aiming to explore patterns, meanings, and theoretical connections rather than statistical generalization. Through the examination of documents and texts, the study identifies how interdisciplinary knowledge structures are embedded in the design, content, and outcomes of educational management curricula.

Data Sources

Two categories of data inform the analysis:

International Theoretical Literature, including foundational and contemporary works by Bush (2007), Senge (2000), Fullan (2020), Klein (1990), Nicolescu (2002), and OECD (2023). These sources provide the conceptual base for understanding interdisciplinarity in educational management and its academic evolution.

Official NAEM Curricula (2024–2025), encompassing undergraduate, master's, and proposed doctoral programs in Educational Management (Codes 7140114, 8140114, and 9140114). These institutional documents serve as the empirical foundation for evaluating how interdisciplinary principles are reflected in Vietnam's higher education context.

Analytical Methods

The study employs two complementary analytical techniques:

Content Analysis: Used to identify interdisciplinary elements such as cross-domain concepts, theoretical integration, and the relationship between management, education, policy, and technology. This method helps map the intellectual structure of educational management science within both literature and curricula.

Comparative Curriculum Analysis: Used to compare and align program objectives, structures, and learning outcomes across the three academic levels (bachelor's, master's, and doctoral). This analysis examines the vertical coherence

of interdisciplinary competencies and how each level contributes to the cumulative development of professional and research capacities.

Comparison Criteria

To ensure analytical consistency, the comparative process applies five main criteria, summarized in Table 2 below.

Table 2
Comparison Criteria for Interdisciplinary Curriculum Analysis

Criterion	Analytical Focus
<i>Program Structure</i>	Organization of the curriculum, distribution of credits, and coherence between theoretical and applied components.
<i>Program Objectives</i>	The explicit articulation of interdisciplinary goals and leadership competencies.
<i>Learning Modules</i>	The thematic scope of core and elective courses and their integration of management, education, policy, and technology.
<i>Learning Outcomes</i>	Knowledge, skills, and attitudes that reflect interdisciplinary synthesis and professional readiness.
<i>Extent of Interdisciplinary Integration</i>	Degree of conceptual, methodological, and practical connection among disciplines in the curriculum design.

Methodological Rationale

This methodological approach allows for a nuanced interpretation of how educational management functions as an interdisciplinary science rather than a single-domain discipline. By combining document analysis with curriculum comparison, the research uncovers both the theoretical underpinnings and applied expressions of interdisciplinarity within NAEM's programs.

Moreover, this method facilitates a dialogue between global theoretical frameworks and the Vietnamese higher education context. It highlights how NAEM's interdisciplinary curriculum reflects international trends in leadership, data-driven management, and digital transformation (OECD, 2023; Fullan, 2020) while retaining contextual relevance.

Research at the Educational Management Program at the National Academy of Education Management, Vietnam

Integrated Three-Tier Curriculum Structure: Bachelor – Master – Doctorate

The Educational Management program at the NAEM is designed as an integrated three-tier academic system that links undergraduate, master's, and doctoral training. This vertical integration ensures continuity in knowledge development, professional competence, and research capability. The structure follows the model of an "Integrated Three-Layer System", in which each academic tier plays a distinct yet complementary role.

Foundational Layer (Bachelor's Level): Provides a broad interdisciplinary foundation covering Education, Psychology, Management Science, Sociology, Economics, and Information Technology. The aim is to cultivate the conceptual and analytical bases for understanding educational organizations as dynamic systems.

Development Layer (Master's Level): Deepens specialized domains including Public Policy, Quality Management, Leadership and Organizational Development, Educational Technology, and Project Management. The focus is on applied leadership, systemic analysis, and decision-making in complex educational environments.

Research Layer (Doctoral Level): Advances high-level integrative knowledge that combines Management, Policy, Education, Systems Science, Behavioral Science, Technology, and Professional Ethics. Doctoral research emphasizes theoretical innovation, interdisciplinary synthesis, and practical application to educational governance.

This cumulative system reflects the principle of "Mode 2 Knowledge Production" (Gibbons et al., 1994), in which educational management knowledge emerges through the interaction between academic research, professional practice, and policy contexts. The curriculum's multi-level structure operationalizes the interdisciplinary philosophy of educational management science by connecting theory, research, and practice.

Table 3
Interdisciplinary Axes Across Three Academic Levels at NAEM

Academic Level	Major Interdisciplinary Axes	Representative Courses
Bachelor's Program	Education – Management – Psychology – Sociology – Technology	General Psychology; Economics of Education; Systems Theory; Educational Marketing
Master's Program	Management – Policy – Culture – Technology	Public–Private Partnership in Education; Digital Technology Applications in Education; Educational Quality Evaluation
Doctoral Program	Management – Policy – Technology – Data – Philosophy	Educational Policy Analysis; Models of Quality Management; Philosophy of Education

The interdisciplinary nature of NAEM's programs is manifested through six interconnected pillars of knowledge: Education, Management, Society, Economy, Technology, and Culture. These pillars provide a multidimensional analytical framework for understanding educational organizations. Program learning outcomes indicate that learners develop integrated competencies that combine leadership, analytical reasoning, innovative thinking, and practical problem-solving, aligning theory with the realities of educational reform and digital transformation in Vietnam. The Bachelor of Educational Management program at NAEM is a regular four-year degree (137 credits) designed to develop comprehensive competence in management, leadership, research, and educational innovation.

Training Objectives

The program aims to equip students with:

Foundational interdisciplinary knowledge across education, management, economics, psychology, sociology, systems science, and information technology;
Professional skills in organization, supervision, evaluation, decision-making, leadership, and research;
Integrated competencies for effective performance in educational institutions, management agencies, and research organizations, as well as readiness for graduate studies.

Learning Outcomes

Graduates are expected to:

Apply theoretical foundations of psychology, education, systems science, economics, and sociology to management practice;
Analyze educational policies, laws, and development strategies;
Manage quality assurance, finance, human resources, and teaching-learning processes;
Utilize interdisciplinary knowledge and digital data for educational research and innovation.

Career Opportunities

Graduates can serve as officers and specialists in departments and bureaus of education and training, administrators in schools and training centers, education consultants, quality assurance specialists, or human resource officers in educational enterprises. They are also qualified to pursue postgraduate studies in Educational Management at master's or doctoral levels.

Analysis of the Interdisciplinary Approach in the Educational Management Curriculum Curriculum Design Logic and Interdisciplinary Orientation

The curriculum of the Educational Management program at the NAEM demonstrates a clear interdisciplinary design logic. The program structure integrates knowledge across multiple scientific domains, including management science, education, economics, sociology, information technology, and public policy.

This integration embodies the interdisciplinary approach in higher education, combining academic theory with professional practice and linking management, leadership, systems thinking, data analytics, and organizational culture. The curriculum is therefore not merely a collection of disciplinary modules but an interdependent framework where theory and practice continuously interact.

Core Interdisciplinary Axes

The interdisciplinary character of the program is expressed through seven principal knowledge and practice axes, each represented by core modules and corresponding theoretical–applied meanings.

Table 4
Principal Interdisciplinary Axes in the Educational Management Curriculum

Axis	Representative Courses	Scholarly and Applied Meaning
(1) Educational Management and Leadership	Fundamentals of Management Science; School Management; Change Management; Psychology of Management	Reflects the theories of leadership for learning (Hallinger, 2011; Bush, 2007) and distributed leadership (Spillane, 2006; Harris, 2016), fostering capacities for learning-centered leadership and organizational management in education.
(2) Systems Science and Learning Organization	Systems Theory; Forecasting Science; Quality Management; Change Management	Embodies systems thinking (Senge, 2000; Meadows, 2008), viewing the school as a complex adaptive system requiring modeling, monitoring, and continuous improvement.
(3) Economics, Policy, and Public Management	Economics of Education; State Management of Education; Educational Planning	Builds on Hanushek & Woessmann (2011) and Ladd (2007), emphasizing cost-effectiveness, investment efficiency, and evidence-based educational policy.
(4) Sociology and Organizational Culture	General Sociology; Gender Equality; Public Relations; Management of Educational Activities	Links to OECD (2023) perspectives on data-driven management, promoting data-informed decision-making and performance dashboards for quality monitoring.
(5) Technology, Data, and Systems Analytics	Information Systems in Educational Management; Basic Informatics; Educational Quality Assurance	Reflects Bryk et al. (2015) on Networked Improvement Communities, fostering cross-disciplinary collaboration and continuous innovation through digital analytics.
(6) Improvement Science and Action Research	Research Methods in Educational Management; Educational Inspection; Evaluation Management	Strengthens methodological competence in inquiry and iterative improvement cycles, enabling students to diagnose and enhance educational systems.
(7) Comparative, International, and Equity Studies	Comparative Education; Gender Equality in Education	Encourages global and comparative thinking, consistent with transdisciplinary education frameworks (Nicolescu, 2002), and supports the integration of equity and inclusion in educational leadership.

Evidence of Interdisciplinarity in Learning Outcomes

The interdisciplinary design of the NAEM curriculum is substantiated through its learning outcome framework, which connects knowledge, skills, and values across multiple domains:

Knowledge (KT3 – KT5): Integration of management science, psychology, sociology, economics, and political studies to interpret and address complex educational problems.

Skills (KN5 – KN7): Research, analytical, and problem-solving abilities grounded in interdisciplinary and evidence-based approaches.

Values (PC3 – PC4): Cultural awareness, humanistic orientation, and sustainability-driven thinking within educational management practice.

These dimensions correspond to the *UNESCO (2021)* and *OECD (2023)* recommendations on developing interdisciplinary competencies for educational leaders in the digital-transformation era. The emphasis on systems

thinking, data-driven governance, and ethical responsibility situates the NAEM program within the broader international discourse on twenty-first-century educational leadership.

Interdisciplinary Model and Academic Identity

The Bachelor of Educational Management program at NAEM exemplifies a pioneering interdisciplinary model in Vietnamese higher education. It converges seven foundational knowledge domains that collectively define the modern identity of educational management science: Educational Management and Leadership; Systems Science; Economics and Public Policy; Organizational Sociology; Improvement Science; Data Analytics and Educational Technology; Interdisciplinary and Global Perspectives

Through this framework, the program not only cultivates competent educational managers, leaders, researchers, and improvement specialists but also affirms the academic identity of *Educational Management Science* as an integrative, modern, and sustainable field of study. The curriculum's emphasis on connectivity between leadership, evidence, culture, and innovation ensures that graduates are equipped to lead change and contribute to the continual renewal of Vietnam's education system.

Overview of the Educational Management Program (Master's Level – Research Orientation)

Degree: Master of Education in Educational Management (Research-oriented)

Institution: National Academy of Education Management (NAEM)

Total Credits: 60, including 7 general credits, 29 foundational and specialized credits, 12 research seminar credits, and 12 thesis credits.

1. Program Objectives

The program aims to develop highly qualified human resources in educational management who possess the capacity for analysis, planning, organization, leadership, and scientific research within the national education system. It particularly emphasizes:

Systemic thinking and evidence-based decision-making;

Leadership, organizational capacity, and the ability to develop educational institutions with an innovation-oriented vision;

Competence in research, publication, and knowledge creation in educational management science;

Application of digital technologies and modern management methods in the context of autonomy, digital transformation, and international integration.

2. Program Learning Outcomes (PLOs)

The program defines **15 learning outcomes** that clearly demonstrate interdisciplinary integration and knowledge synthesis:

PLO1–PLO4: Ability to apply theories of management, leadership, policy, economics, and educational psychology to problem solving.

PLO5–PLO8: Competence in analyzing global trends, applying information technology, managing educational data, conducting research, and fostering managerial innovation.

PLO9–PLO15: Skills in team leadership, scholarly publication, building a culture of quality, and promoting sustainable improvement in educational institutions.

3. Curriculum Structure

The curriculum is organized in a logical sequence from foundational to advanced, research, and applied levels, reflecting a coherent interdisciplinary mindset.

Table 5
Structure of the Master's Program in Educational Management

Knowledge Block	Representative Courses	Interdisciplinary Characteristics
General Knowledge	Philosophy, Academic English	Provides philosophical grounding and academic language proficiency while linking management, leadership, policy, economics, and psychology.
Disciplinary Foundations	Psychology of Leadership; School Management and Leadership; Educational Policy; Economics of Education	Combines systems theory, organizational sociology, and improvement science.

Knowledge Block	Representative Courses	Interdisciplinary Characteristics
Specialized Knowledge	Program Management; Quality Management; Human Resource and Financial Management; Change Management; School Culture	Encourages practical research following the learning organization model (Senge, 2000).
Research Seminars	Strategic Governance; Modern Management Models; Educational Evaluation and Inspection	Enhances applied research capacity and interdisciplinary integration.
Master's Thesis	Interdisciplinary research addressing real-world management problems	Synthesizes insights from research, policy, technology, and sociology.

Interdisciplinary Analysis of the Program

Management and Leadership Axis: The courses School Management and Leadership and Psychology of Leadership reflect the theoretical perspectives of leadership for learning (Hallinger, 2011) and distributed leadership (Harris, 2016; Spillane, 2006). These courses demonstrate the integration between organizational management and pedagogical leadership, forming an interdisciplinary model that connects behavioral science, organizational studies, and educational theory (Bush, 2007).

Systems Science and Learning Organization Axis: Courses such as Program Development Management, Quality Management, Change Management, and Educational Evaluation are grounded in the principles of the learning organization described by Senge (2000) and the concept of systems thinking proposed by Meadows (2008). This axis represents the approach of systems science that enables learners to develop complex reasoning and to identify the interconnections and multi-level relationships that exist within educational systems.

Interdisciplinary Research and Educational Science Axis: The course Research Methods in Educational Science (MAG8002) and the series of research seminars (MAG8019–8022) build learners' capacity in research design, evaluation, and continuous improvement in alignment with the model of improvement science (Bryk et al., 2015). This structure reflects the concept of "Mode 2 Knowledge Production" introduced by Gibbons and Nowotny (1994), emphasizing that knowledge emerges through collaboration among researchers, practitioners, and policymakers.

Policy and Educational Economics Axis: The courses Educational Policy and Economics of Education are informed by The Handbook of the Economics of Education (Hanushek et al., 2011) and the policy analysis model developed by Ladd (2011). Through these courses, learners acquire the ability to analyze, formulate, and evaluate educational policy using both theoretical reasoning and quantitative approaches that assess efficiency and cost-effectiveness.

Technology Data and Analytics Axis: The course Applications of Digital Technology in Education develops learners' competence in using management dashboards, analyzing large datasets, and making evidence-based decisions. This approach corresponds with the recommendations of the Organisation for Economic Co-operation and Development (OECD, 2023) and bridges educational technology, information management, and data analytics to enhance strategic decision-making in education management.

Organizational Sociology and Quality Culture Axis: Courses including Building School Culture, Human Resource Management, and Change Management are built on Wenger's (1998) theory of Communities of Practice. This axis integrates perspectives from sociology, management, and education, promoting a culture of organizational learning and continuous quality development in educational institutions.

Strategic Management and Sustainable Development Axis: The course Strategic Educational Management incorporates the ideas of system change introduced by Fullan (2020) and the theory of complexity in education developed by Morin (1999). Learners are trained to exercise strategic leadership that aligns educational innovation with the Sustainable Development Goals, specifically SDG 4 on Quality Education and SDG 17 on Partnerships for the Goals.

Interdisciplinary Orientation in the Master's and Doctoral Programs in Educational Management

The Master's Program in Educational Management at the National Academy of Education Management demonstrates a clear interdisciplinary curriculum design that integrates four foundational pillars: **Management and**

Leadership Theory; Systems Science and Learning Organization; Policy, Economics, and Educational Technology; Organizational Culture and Quality Improvement

This structure represents a model that links knowledge, competence, and practice. It establishes a continuum of interdisciplinary capacity development from the bachelor's level through the master's and doctoral levels, aligned with the goals of institutional autonomy, digital transformation, and sustainable educational development in Vietnam.

Overview of the Doctoral Program in Educational Management

The Doctoral Program in Educational Management (Code 9140114) at the National Academy of Education Management has been developed in accordance with the regulations of the Ministry of Education and Training (Circulars 18/2021, 17/2021, and 02/2021). The program aims to cultivate researchers, lecturers, and senior experts with a high level of academic and practical competence in the science of educational management.

Program Objectives

General Objective: To train doctoral graduates with advanced theoretical and applied expertise, capable of independent and creative research that identifies emerging issues and contributes new knowledge to the field of educational management science.

Specific Objectives:

To master contemporary theories in management, leadership, policy, and educational studies.

To identify, analyze, and address complex problems in educational management.

To conduct independent research, supervise scientific inquiry, and teach at the university and postgraduate levels.

To develop critical, creative, and technological skills for scholarly engagement in international contexts.

Program Structure

Total Credits: 90

The program includes core courses and elective modules that provide theoretical grounding and research capacity.

Core Courses: Philosophy and History of Education; Educational Policy Analysis; Modern Theories of Management in Education; Quality Management Models in Education

Elective Courses: Higher Education Management; School Management; Vocational Education Management; Educational Measurement and Evaluation

Program Learning Outcomes

Upon completion, doctoral candidates are expected to demonstrate interdisciplinary competencies at three levels:

Knowledge: Ability to synthesize knowledge from educational science, policy studies, economics, leadership theory, systems science, and educational technology.

Skills: Proficiency in designing, implementing, evaluating, and innovating management models; applying systems thinking and data-driven approaches for decision making.

Research Competence: Capability to conduct and supervise research in educational management, policy development, quality assurance, and digital transformation.

Interdisciplinary Orientation of the Doctoral Program

The Doctoral Program in Educational Management exemplifies an interdisciplinary doctoral design that integrates the following domains: educational science and learning theory, management and leadership studies, systems science and complexity theory, public policy and educational economics, organizational sociology and cultural studies, and data science and educational technology.

Table 6
Interdisciplinary Axes of the Doctoral Program

Interdisciplinary Axis	Core Courses	International Theoretical Perspectives
<i>Management and Leadership</i>	Modern Theories of Educational Management, School Governance, Leadership for Learning Seminar	Hallinger (2011), Bush (2007), Spillane (2006) – perspectives on distributed leadership and strategic governance
<i>Systems Science and Learning Organization</i>	Quality Management Models in Education, Policy Analysis	Senge (2000), Meadows (2008), Fullan (2020) – systems thinking and organizational learning

Interdisciplinary Axis	Core Courses	International Theoretical Perspectives
<i>Economics and Educational Policy</i>	Educational Policy Analysis, Economics of Education	for educational improvement Hanushek and Woessmann (2011), Ladd (2007), OECD (2023), cost efficiency, human capital, and accountability frameworks
<i>Organizational Sociology and Culture</i>	Philosophy and History of Education, Human Resource Management, School Culture	Wenger (1998), communities of practice and collaborative learning cultures
<i>Improvement and Innovation Science</i>	Educational Evaluation and Change Management	Bryk et al. (2015), networked improvement communities and continuous improvement models
<i>Data Analytics and Educational Technology</i>	Educational Measurement, Information Systems in Management	OECD (2023), data-informed decision-making and educational dashboards
<i>Global and Interdisciplinary Education</i>	Academic English, International Policy Analysis, Comparative Education	Klein (1990), Nicolescu (2002), Gibbons and Nowotny (1994), transdisciplinary and global knowledge production

The interdisciplinary outcomes of the doctoral program encompass the following key capacities: systems thinking and policy analysis, knowledge creation and innovation, transformational leadership, organizational learning and cultural development, and quality management and data-based accountability.

The Doctoral Program in Educational Management at the National Academy of Education Management represents an integrated academic framework that connects leadership, governance, systems thinking, data science, social analysis, and policy research. It contributes to the development of a new generation of Vietnamese educational leaders and scholars capable of addressing the complex challenges of the first century education through interdisciplinary and innovative scientific approaches.

Findings

The results of the qualitative document and content analysis demonstrate that the Educational Management programs at the NAEM constitute a coherent, vertically aligned, and progressively integrated model of interdisciplinary higher education. Across the bachelor's, master's, and doctoral levels, the programs are designed to nurture increasingly sophisticated layers of knowledge, competence, and research capacity, forming a seamless academic continuum.

At the undergraduate level, the curriculum provides a foundational understanding that bridges management science, educational theory, psychology, and systems thinking. It enables students to perceive education as an evolving, interconnected system that combines administrative, pedagogical, and social dimensions.

The master's program builds on this base by deepening students' analytical and leadership capabilities. It integrates economics, public policy, and technology, preparing learners to apply data-driven decision-making in educational governance, design institutional reforms, and lead quality assurance and innovation initiatives.

At the doctoral level, interdisciplinarity reaches its peak. The program synthesizes theoretical and empirical research with practical application, expanding the curriculum to include ethics, sustainable development, and advanced data analytics. Doctoral candidates are equipped to generate new knowledge, develop theoretical frameworks, and contribute to systemic reform through research, teaching, and policy innovation.

Across all academic levels, the programs share seven core interdisciplinary domains: educational leadership, systems science, economics and policy, sociology and organizational culture, improvement science, educational technology and data analytics, and global and transdisciplinary perspectives. These domains serve as the foundation for uniting theory, research, and practice, reflecting an epistemological framework that promotes academic coherence and applied relevance.

Learning outcomes across levels also reveal clear interdisciplinary integration. Knowledge outcomes combine insights from management, education, and policy; skill outcomes emphasize leadership, research, and innovation; and value outcomes highlight ethics, sustainability, and cultural awareness. This alignment enables a consistent trajectory from operational management to strategic leadership and scholarly contribution.

The analysis further identifies several strengths, including coherence among programs, integration of digital tools and data-based governance, and a focus on leadership for innovation and sustainability. However, certain challenges

remain, such as limited global collaboration, the need to strengthen faculty capacity for interdisciplinary research, and the insufficient inclusion of global citizenship and ethics in early training stages.

Discussion

The findings affirm that educational management at NAEM has evolved into an interdisciplinary scientific field that synthesizes diverse domains of knowledge to address complex educational realities. This progression reflects the *Mode 2 knowledge production* paradigm proposed by Gibbons et al. (1994), where knowledge emerges from interaction among theory, practice, and social context rather than within a single academic discipline.

The integration of management and leadership theory within the curriculum aligns with global scholarship on distributed and learning-centered leadership (Bush, 2007; Hallinger, 2011). The emphasis on systems thinking and continuous improvement resonates with Senge's (2000) concept of learning organizations and Fullan's (2020) advocacy for system-level change, showing that NAEM's approach mirrors global trends in adaptive and evidence-based educational management.

By embedding public policy and economics within the curriculum, NAEM situates educational management in a broader socio-economic and political context, consistent with OECD (2023) and Hanushek & Woessmann (2011), who emphasize efficiency, accountability, and sustainability in education systems. The incorporation of technology and data analysis, as reflected in the findings of Tsalko et al. (2024), further demonstrates responsiveness to digital transformation, positioning NAEM at the forefront of data-informed educational governance.

From a sociocultural perspective, the curriculum's attention to organizational culture and collaboration corresponds with Wenger's (1998) *Communities of Practice* and Schein's (2010) theories of organizational leadership and culture. This illustrates that NAEM's interdisciplinary design not only builds managerial and analytical competence but also cultivates ethical, social, and humanistic dimensions of educational leadership.

The analysis and comparative interpretation suggest several strategic directions to enhance the effectiveness and impact of NAEM's interdisciplinary approach:

First, NAEM should establish a comprehensive theoretical framework for interdisciplinary educational management science, integrating three foundational dimensions: (1) management and systems theory, emphasizing organizational learning and adaptive governance; (2) policy and economics, focusing on evidence-based and cost-effective policymaking; and (3) technology and society, emphasizing data analytics, ethics, and digital transformation. This tripartite framework can unify theory, practice, and innovation under a shared scientific structure.

Second, it is essential to develop interdisciplinary research networks that connect universities, research institutes, educational authorities, and enterprises. These collaborations can evolve into Educational Improvement Networks (Bryk et al., 2015), fostering co-production of knowledge between scholars and practitioners and strengthening Vietnam's educational innovation ecosystem.

Third, NAEM should innovate its curriculum toward openness and international integration by incorporating modules on digital governance, learning analytics, and sustainable development. Benchmarking its programs against OECD and UNESCO standards will reinforce global alignment and academic excellence.

Fourth, the academy should enhance faculty and researcher capacity through cross-disciplinary professional development programs, such as joint fields in Educational Management and Data Science or Educational Management and Public Policy. These initiatives would foster an academic workforce capable of conducting interdisciplinary research and driving educational reform.

Finally, NAEM should strengthen international collaboration and academic positioning by engaging actively with global research networks in Educational Leadership and Policy Studies under OECD and UNESCO. Such participation would elevate the international visibility of NAEM's doctoral programs and align Vietnam's education management research with global scholarly and policy trends.

Conclusion

Interdisciplinary approaches represent an inevitable trend in the development of modern educational management science. Through the comparative analysis of the Educational Management programs at the NAEM, this study affirms that the discipline has been systematically designed within an interdisciplinary curriculum framework that combines knowledge from management, education, sociology, policy, and technology. The articulation among bachelor's, master's, and doctoral programs reflects a developmental process of interdisciplinary competence that progresses from foundational understanding to integration and ultimately to the creation of new knowledge. This structure aligns with international trends in educational management and contributes to cultivating a new generation

of education leaders capable of governance, innovation, and sustainable development within the context of institutional autonomy and digital transformation.

The findings also demonstrate that NAEM's programs represent a comprehensive and forward-looking model of interdisciplinary higher education. By linking theory, practice, and policy across academic levels, NAEM has built a coherent system that nurtures leadership, analytical capacity, and research competence in an integrated manner. Interdisciplinarity serves as both the philosophical foundation and the methodological direction of the institution's educational vision. The programs integrate management science, systems thinking, economics, sociology, and educational technology to form a unified framework of educational management science that bridges theoretical inquiry with real-world practice. This approach is consistent with the Mode 2 knowledge production model proposed by Gibbons et al. (1994), emphasizing knowledge creation through collaboration among researchers, practitioners, and policy makers.

The programs highlight several key strengths. Their vertical coherence ensures the consistent development of interdisciplinary competence. The integration of digital tools, data analysis, and evidence-based management reflects responsiveness to Vietnam's national agenda for digital transformation. Ethical awareness, sustainability, and global engagement are emphasized, aligning with the Sustainable Development Goals, particularly SDG 4 on quality education and SDG 17 on global partnerships.

However, there remain areas for enhancement, including the need to strengthen faculty capacity in interdisciplinary research, expand international cooperation, and reinforce ethical and civic education at the undergraduate level. Addressing these issues will help NAEM realize its vision of becoming a leading institution in educational leadership, research, and innovation.

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