

DEVELOPING ENTERPRISE-BASED PRACTICUM AND INTERNSHIP PROGRAMS FOR ECONOMICS STUDENTS IN RESPONSE TO DIGITAL TRANSFORMATION AND INDUSTRY 4.0

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ABSTRACT

Internship and practical training programs play a crucial role in economics education by enabling students to apply theoretical knowledge to real-world contexts and enhance professional competencies. In the era of digital transformation and the Fourth Industrial Revolution (Industry 4.0), enterprises are undergoing profound structural and technological changes, requiring a workforce equipped with strong professional expertise, digital competencies, and adaptive capabilities.

This paper analyzes the current status of enterprise-based internship programs for economics students at higher education institutions and identifies major limitations in curriculum design, university–enterprise collaboration, and student preparedness. Based on this analysis, the study proposes comprehensive solutions to improve the quality and effectiveness of internship programs, ensuring that graduates can meet labor market demands in a rapidly digitalizing economy.

Keyword: *internship, economic training, digital transformation, digital skills, business cooperation.*

1. INTRODUCTION

Digital transformation has become increasingly prevalent with the rapid advancement of the Fourth Industrial Revolution. Emerging technologies such as artificial intelligence (AI), the Internet of Things (IoT), big data analytics, cloud computing, robotics, blockchain, nanotechnology, and advanced materials are reshaping economic structures and business models worldwide. These technologies blur the boundaries between physical, digital, and biological domains, fundamentally altering how organizations operate.

Digital transformation is not merely the application of technology to existing business models; rather, it involves comprehensive organizational change. It enhances collaboration, optimizes productivity, and generates greater value for institutions and consumers alike. As digital technologies increasingly penetrate management, production, and business processes, the requirements for economics graduates have evolved. Beyond disciplinary knowledge, they must possess digital literacy, innovation-oriented thinking, and adaptability.

Therefore, economics education programs must be redesigned, particularly enterprise-based internship components, to ensure alignment with real-world business practices and digital transformation trends

2. SIGNIFICANCE OF ENTERPRISE-BASED INTERNSHIP PROGRAMS

2.1 For Students

Internship programs provide substantial benefits, including:

- Bridging theory and practice
- Gaining experiential learning in real business environments
- Understanding corporate culture and workplace dynamics
- Clarifying future career orientation

Internships not only constitute an essential component of academic assessment but also help students identify competency gaps and necessary skill development for future employment.

2.2 For Enterprises

In the short term, hosting interns allows enterprises to supplement seasonal labor needs and reduce labor costs. Interns also represent a potential recruitment pool, reducing future training expenses.

In the long term, collaboration with universities enables enterprises to identify discrepancies between market requirements and training outcomes. This feedback supports curriculum improvement and enhances graduate employability. Furthermore, internship programs strengthen university–industry partnerships and contribute to balancing workforce supply and demand.

3. CURRENT STATUS OF INTERNSHIP PROGRAMS FOR ECONOMICS STUDENTS

Despite widespread implementation across higher education institutions, several limitations remain.

3.1 Institutional Limitations

First, internship duration is typically short (4–6 weeks), often scheduled in the final semester, which limits students' exposure to practical business operations.

Second, internship content has not been sufficiently updated to reflect digital transformation trends. Traditional areas such as accounting, finance, marketing, and human resource management dominate, while emerging fields such as e-commerce, AI applications in business, blockchain, and big data analytics are underrepresented.

Third, internship formats remain largely traditional, with limited integration of digital platforms or virtual internship models.

Fourth, programs lack personalization. Internship structures are generally standardized rather than tailored to students' competencies or career orientations.

3.2 Enterprise-Related Limitations

University–enterprise collaboration is often weak. Some enterprises accept interns formally but restrict access to operational data due to confidentiality concerns. Others do not assign structured tasks or qualified mentors, resulting in limited practical exposure.

3.3 Student-Related Limitations

Students frequently secure internships through personal networks, which may lead to superficial participation. Issues such as report duplication or inadequate supervision reduce internship quality.

Additionally, students often lack:

- Digital competencies (data analysis software, automation tools, e-commerce platforms)
- Soft skills (communication, teamwork in digital environments)
- Proactive learning attitudes and professional discipline

These deficiencies hinder their adaptation to digital workplaces.

4. PROPOSED SOLUTIONS FOR IMPROVING INTERNSHIP QUALITY

4.1 Updating Curriculum and Extending Internship Duration

- Integrate digital business modules into the curriculum.
- Incorporate AI, blockchain, big data analytics, and e-commerce into internship content.
- Provide hands-on experience with CRM systems, ERP software, and digital platforms.
- Extend internship duration to approximately 2.5–3 months to ensure meaningful engagement.

4.2 Strengthening University–Enterprise Collaboration

- Establish structured partnership models with joint training responsibilities.
- Organize regular industry seminars and dialogue sessions.
- Encourage enterprise participation in mentoring and performance evaluation.

4.3 Enhancing Students' Digital Competencies

- Offer training in programming fundamentals, data analytics, and AI applications in business.

- Promote innovation through real-world projects and digital entrepreneurship competitions.
- Encourage participation in hackathons and startup initiatives.

4.4 Improving Assessment Methods

- Develop joint evaluation systems between universities and enterprises.
- Assess students based on practical competencies, technological adaptability, and problem-solving abilities.
- Adopt innovative reporting formats such as digital presentations or project-based reports.

4.5 Developing KPI-Based Internship Evaluation Frameworks

Key performance indicators (KPIs) may include:

- **Work attitude:** discipline, proactiveness, adaptability, responsibility.
- **Professional skills:** task completion rate, quality of output, technology utilization, project involvement.
- **Soft skills:** communication, teamwork in digital environments, critical thinking, time management using digital tools.
- **Post-internship outcomes:** employer evaluation, retention rate, supervisor satisfaction, technological application level.

5. CONCLUSION

Developing enterprise-based internship programs aligned with digital transformation is essential for improving educational quality and producing a workforce capable of meeting contemporary labor market demands. Effective collaboration between universities and enterprises, combined with the integration of digital technologies into training and assessment, constitutes a strategic pathway toward sustainable development in economics education.

Achieving this objective requires coordinated efforts from educational institutions, enterprises, and students to optimize both learning and practical training processes in the digital era.

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