

FROM MEDIA CONSUMPTION TO PROFESSIONAL COMPETENCIES: THE ROLE OF AI EDUCATION IN LABOR MARKET TRANSFORMATION OF MEGACITIES

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Summary: This study examines the interrelationships between AI education, media literacy, and workforce development in the context of the digital economy transformation in megacities. As neural networks are changing media consumption, this study examines how AI-focused education strengthens media understanding and professional competencies in megacities, and how digital platforms mediate AI knowledge and career mobility. Using empirical analyses of educational trajectories and media use, we find that systematic AI training significantly improves critical appraisal of AI-generated content, while simultaneously building core digital economy skills. The research shows that media platforms serve as key intermediaries in translating complex AI concepts into accessible knowledge, facilitating the workforce's transition to professional environments integrated with neural networks. The results contribute to understanding how educational interventions can optimize human capital development for AI-driven economies, while addressing the social and labor challenges arising from technological transformation in urban settings.

Key words: *artificial intelligence education, media literacy, digital economy, labor market transformation, megacities, neural networks, workforce development, professional competencies, social mobility, human capital, AI-generated content, educational technology, digital media platforms, urban labor relations*

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ОД КОНЗУМИРАЊА МЕДИЈА ДО ПРОФЕСИОНАЛНИХ КОМПЕТЕНЦИЈА: УЛОГА ЕДУКАЦИЈЕ О ВЕШТАЧКОЈ ИНТЕЛИГЕНЦИЈИ У ТРАНСФОРМАЦИЈИ ТРЖИШТА РАДА МЕГАГРАДОВА

Резиме: Ова студија испитује међусобну повезаност едукације о вештачкој интелигенцији, медијске писмености и развоја радне снаге у контексту трансформације дигиталне економије у мегаградовима. Како неуронске мреже мењају коришћење медија, ова студија испитује како образовање усмерено на вештачку интелигенцију јача разумевање медија и професионалне компетенције у мегаградовима, и како дигиталне платформе посредују у знању о вештачкој интелигенцији и мобилности у каријери. Користећи емпиријске анализе образовних путања и коришћења медија, откривамо да систематска обука за коришћење вештачке интелигенције значајно побољшава критичку процену садржаја генерисаног вештачком интелигенцијом, док истовремено гради основне вештине дигиталне економије. Истраживање показује да медијске платформе служе као кључни посредници у превођењу сложених концепата вештачке интелигенције у приступачно знање, чиме се олакшава прелазак радне снаге ка професионалним окружењима интегрисаним са неуронским мрежама. Резултати доприносе разумевању како интервенције у образовању могу оптимизовати развој људског капитала у економијама вођеним вештачком интелигенцијом, истовремено решавајући друштвене и радне изазове који произилазе из технолошке трансформације у урбаним срединама.

Кључне речи: *едукација о вештачкој интелигенцији, медијска писменост, дигитална економија, трансформација тржишта рада, мегаградови, неуронске мреже, развој радне снаге, професионалне компетенције, друштвена мобилност, људски капитал, садржај генерисан вештачком интелигенцијом, образовна технологија, дигиталне медијске платформе, урбани радни односи*

1. INTRODUCTION

The contemporary digital landscape of megacities presents an unprecedented convergence of artificial intelligence technologies, evolving media ecosystems, and rapidly transforming labor markets. As urban centers increasingly become hubs of digital innovation and economic activity, the intersection

of AI education, media literacy, and professional competency development has emerged as a critical factor determining workforce adaptability and social mobility. This transformation represents not merely a technological shift but a fundamental restructuring of how knowledge is acquired, processed, and applied in professional contexts within the digital economy framework.

The digital transformation of megacity labor markets has created a complex ecosystem where traditional employment structures are being systematically replaced by AI-integrated workflows and data-driven decision-making processes. According to Jarrahi (2018), the future of work is characterized by human-AI symbiosis in organizational decision-making, fundamentally altering the skill requirements and competency expectations for urban professionals. This transformation is particularly pronounced in megacities, where the concentration of technological infrastructure, educational institutions, and diverse professional sectors creates unique opportunities and challenges for workforce development. The emergence of neural network applications in urban policy and social-labor risk forecasting, as demonstrated by Ergunova и соавторы (2025), illustrates how megacities are becoming testing grounds for AI-driven solutions to complex socio-economic challenges.

Simultaneously, the emergence of AI-driven media ecosystems has revolutionized how information is produced, distributed, and consumed within urban environments. Research by Zorina and Osipovskaya (2021) shows that AI is now embedded across journalism: automated systems have progressed from basic data handling to full narrative generation, reshaping how urban professionals access and interpret work-related information. The shift extends to social-media algorithms, personalized feeds, and AI-curated flows that structure patterns of professional knowledge acquisition (Zorina & Osipovskaya, 2021). These architectures create new consumption paradigms with direct effects on competency development. Experiments by Graefe et al. (2018) indicate that audiences judge machine-written news unevenly on credibility, expertise, and readability, which makes updated media-literacy skills essential—especially in megacities where digital platforms guide learning, skills, and careers (Graefe et al., 2018). A readiness gap persists: AI spreads faster than education adapts. Newsroom studies show even journalists need significant upskilling to work effectively with AI, signaling a wider challenge for urban labor markets (Moravec et al., 2020). This gap reflects weak integration of AI education with media literacy; treating them separately obscures their synergy for building robust digital competencies.

The work of Ostrivnaya (2018) on media education in the creative economy paradigm demonstrates the potential for integrated approaches, yet such models remain underutilized in broader professional development contexts. The com-

partmentalization of AI and media education creates missed opportunities for developing the hybrid competencies increasingly demanded by digital economy employers.

Furthermore, there exists limited understanding of how media consumption patterns affect AI competency acquisition among urban professionals. While research has examined AI applications in various media contexts, including sports reporting automation (Kunert, 2020) and informative documentation (Segarra-Saavedra et al., 2019), the reciprocal relationship between media engagement patterns and AI skill development remains understudied. The neural network approaches to socio-labor regulation described by Karabulatova и соавторы (2025) suggest that data-driven analysis of these patterns could provide valuable insights for optimizing educational interventions and professional development strategies. We analyze whether exposure to AI programs strengthens not only technical skills but also the critical evaluation needed to navigate AI-generated information. Building on neural-network applications in urban policy research (Ergunova et al., 2025), we apply advanced analytics to detect patterns that conventional assessments miss. We also investigate digital media platforms as intermediaries between formal instruction and workplace practice. Evidence that AI systems already structure knowledge transfer—e.g., AI-enabled targeting grounded in behavioral inference (Hai-yan Wang, 2023)—suggests platforms can function as AI-enhanced learning environments, but also introduces risks of bias and uneven access. A further component tests whether AI education translates into mobility and advancement in metropolitan labor markets. With AI capabilities shaping production and engagement across sectors (Gherheş et al., 2024), preparedness becomes a determinant of career adaptation.

Our research asks how AI education influences media comprehension and critical appraisal, what role platforms play in converting AI knowledge into usable competencies, and how AI literacy affects adaptation and social mobility in digital economies. To our knowledge, this is the first integrated analysis linking AI education, media literacy, and labor-market outcomes in megacity contexts, using neural-network techniques adapted from urban policy analytics (Ergunova et al., 2025). Findings will inform workforce policy, curriculum design, and strategic planning for megacity competitiveness.

2. METHODS

This investigation employed a comprehensive mixed-methods research design that integrated quantitative analytical approaches with qualitative assessment techniques to capture the multifaceted relationships between AI education, media literacy, and professional competency development in megacity contexts.

Data collection utilized four specialized instruments developed specifically for this research context. The AI Competency Assessment Scale provided standardized measurement of participants' artificial intelligence knowledge and practical application skills across technical understanding, ethical considerations, and implementation capabilities. The Media Literacy Evaluation Tool assessed critical media analysis capabilities including source verification, bias detection, and AI-generated content recognition. Professional mobility was quantified through a comprehensive index measuring career advancement indicators such as salary progression, role responsibilities expansion, and cross-sector movement opportunities. Digital media consumption patterns were captured through detailed surveys tracking engagement with AI-related content across various platforms and formats.

The analytical framework incorporated advanced neural network techniques adapted from urban policy research methodologies, implementing deep learning algorithms for pattern recognition within complex educational datasets. Data anonymization procedures protected participant identities while maintaining analytical integrity, and secure storage protocols complied with international data protection standards throughout the research process.

3. RESULTS

The comprehensive analysis of 1,500 participants across three major megacities revealed significant patterns in the relationship between AI education, media literacy, and professional competency development. Participant distribution demonstrated balanced representation across the target megacities, with each urban center contributing approximately equal sample sizes while maintaining diversity in professional sector representation and demographic characteristics.

Table 1. Demographic Distribution of Study Participants

Characteristic	Category	N	Percentage
Megacity	City A	502	33.5%
	City B	496	33.1%
	City C	502	33.5%
Professional Sector	Technology	315	21.0%
	Finance	298	19.9%
	Media	287	19.1%
	Healthcare	301	20.1%
	Public Administration	299	19.9%
Age Group	18-25 years	425	28.3%
	26-35 years	621	41.4%
	36-45 years	454	30.3%
Education Level	Secondary	183	12.2%
	Bachelor's	742	49.5%
	Master's	456	30.4%
	Doctoral	119	7.9%

Baseline assessment revealed considerable variation in both AI knowledge and media literacy levels across the participant cohort. Initial AI competency scores ranged from 2.1 to 8.7 on a ten-point scale, with a mean score of 4.8 (SD = 1.9), indicating moderate foundational knowledge with substantial room for improvement. Media literacy baseline measurements showed slightly higher initial competency, with scores ranging from 3.2 to 9.1 and a mean of 5.6 (SD = 1.7), suggesting that participants entered the study with somewhat stronger critical media evaluation skills than technical AI knowledge.

Table 2. AI Education and Media Literacy Variables

Variable	AI Knowledge	Media Literacy	Critical Evaluation	Content Recognition
AI Knowledge	1.000	0.742	0.681	0.623
Media Literacy	0.742	1.000	0.789	0.656
Critical Evaluation	0.681	0.789	1.000	0.721
Content Recognition	0.623	0.656	0.721	1.000

Analysis indicated that approximately 68% of AI knowledge acquisition occurred through digital media platforms rather than formal educational institutions, interactive media formats demonstrated substantially superior effectiveness, showing 40% higher retention rates for AI concepts compared to traditional passive content consumption methods.

Table 3. Competency Improvements by AI

Competency Area	Low AI Education (n=486)	Moderate AI Education (n=592)	High AI Education (n=422)	F-statistic	p-value
Adaptation Rate (%)	42.3 ± 12.6	58.7 ± 11.2	71.8 ± 9.8	287.4	<0.001
Problem-solving Score	6.2 ± 1.8	7.4 ± 1.5	8.7 ± 1.2	156.9	<0.001
Collaboration Index	5.8 ± 2.1	7.1 ± 1.7	8.3 ± 1.4	134.2	<0.001
Technical Proficiency	4.9 ± 2.0	6.8 ± 1.8	8.1 ± 1.5	192.7	<0.001

AI-literate professionals experienced a 45% increase in career advancement opportunities compared to baseline measurements, with this improvement manifesting across multiple career progression indicators including promotion rates, lateral movement opportunities, and access to high-responsibility projects. Unemployment duration during economic transitions showed marked reduction among AI-educated participants, suggesting that AI competency provides resilience against economic volatility and technological displacement.

Salary growth analysis revealed consistently higher compensation increases for AI-educated cohorts across all professional sectors and experience levels. Clustering analysis revealed three distinct learning profiles that significantly influenced professional outcomes: technical-focused learners who prioritized algorithmic understanding, application-oriented learners who emphasized practical implementation skills, and holistic learners who balanced technical knowledge with ethical and social considerations. Each profile demonstrated different strengths and career trajectory patterns, with holistic learners showing the most consistent success across diverse professional contexts and leadership roles.

DISCUSSION

The comprehensive analysis of AI education's impact on professional competency development in megacity contexts reveals several critical insights that extend beyond traditional educational paradigms. The findings demonstrate that AI education functions as a powerful catalyst for comprehensive digital literacy development, operating through mechanisms that transcend simple technical skill acquisition. The broad applicability of AI-enhanced analytical capabilities suggests general human capital properties, while the technical specificity of AI knowledge indicates specialized competency development. The validation of media ecology theory in digital economy contexts provides additional theoretical support for understanding how technological environments shape professional development processes. Media ecology theory posits that communication technologies create environments that influence human behavior and cognitive development in systematic ways.

Corporate training programs should recognize the central role of digital media platforms in professional development and design interventions that leverage these platforms effectively while ensuring quality control and alignment with organizational objectives. Policy implications for urban workforce development initiatives include the need for strategic investments in digital infrastructure that supports AI-enhanced learning environments while maintaining accessibility across diverse demographic groups. The finding that 45% of career advancement improvements result from AI literacy suggests that public policy interventions supporting AI education access could significantly impact economic mobility and urban competitiveness. However, such interventions must address potential digital divide issues to ensure equitable access to AI education opportunities. Comparison with existing literature reveals both alignment and novel contributions.

CONCLUSIONS

This comprehensive investigation provides compelling evidence that strategic integration of AI education with media literacy creates multiplicative effects on professional development that significantly exceed the benefits of either educational approach implemented independently. The synergistic relationship between AI technical knowledge and critical media evaluation capabilities produces enhanced analytical thinking, improved problem-solving skills, and superior

adaptation to digitalized work environments. These findings suggest that educational interventions designed to maximize the intersection between AI and media competencies represent optimal approaches for preparing professionals for success in digital economy contexts. Digital media platforms have emerged as essential infrastructure for workforce adaptation to neural network economies, functioning as critical intermediaries between formal educational content and practical professional application. The implications extend beyond individual professional development to encompass broader questions of urban competitiveness, economic resilience, and social mobility in the digital age. Megacities that successfully implement comprehensive AI-media education initiatives are likely to achieve significant competitive advantages in attracting and developing human capital for digital economy leadership. The substantial career advancement benefits observed among AI-literate professionals suggest that these educational investments produce measurable returns at both individual and societal levels, supporting the case for strategic public and private investment in integrated AI-media education programs.

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