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DIGITAL SKILLS AND ECONOMICS TEACHER PREPARATION FOR THE GLOBAL ECONOMY: A STUDY OF FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA

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Abstract

The growing digitalization of education and economic activity has increased the need for economics teachers who can combine sound subject knowledge with effective use of digital technologies. This study examined the role of digital skills in preparing economics teachers for participation in the global economy, with particular reference to the Federal University of Education, Kontagora, Niger State. The study addressed the continuing challenge of inadequate digital infrastructure, uneven professional development, and limited access to current digital resources, and differences in teachers' technological competence. A descriptive survey case-study approach was used. The quantitative component drew on responses from 120 respondents at the institution, while the literature component situated the findings within current scholarship and international policy frameworks. Data were summarized using mean scores and standard deviations, with 2.50 adopted as the decision criterion. The findings showed that respondents possessed adequate computer and information literacy skills (grand mean = 3.56), perceived digital skills as improving teaching effectiveness (grand mean = 3.61), and strongly associated digital skills with preparation for the global economy (grand mean = 3.68). The study concludes that digital competence should be treated as an integral part of economics teacher preparation rather than as an optional technical skill. It recommends sustained digital professional development, improved institutional connectivity and infrastructure, integration of digital pedagogy into economics teacher education, and responsible use of emerging technologies.

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Introduction

Digitalization is reshaping the knowledge, skills and practices required for participation in contemporary society and the global economy. Digital technologies now influence how information is produced and accessed, how organizations communicate, how economic decisions are made, and how teaching and learning are organized. The 2023 Global Education Monitoring Report notes that technology can support access to content, teaching and learning, system management and the development of digital skills, but its educational value depends on appropriate, equitable and evidence-informed use (UNESCO, 2023). Similarly, the OECD emphasizes that teachers are central to digital transformation because technology does not automatically improve learning; teachers need the competence and confidence to select and integrate technologies for meaningful pedagogical purposes (OECD, 2023a).

Economics education is particularly relevant to this transformation because the discipline depends heavily on information, quantitative reasoning, data interpretation and awareness of changing economic conditions. Economics teachers increasingly need to access current economic statistics, policy documents and research; use spreadsheets and other analytical tools; prepare digital instructional materials; communicate through online platforms; and guide learners in interpreting economic information. Teacher preparation therefore needs to extend beyond subject knowledge and conventional pedagogy to include the technological knowledge required to connect content and pedagogy with contemporary digital environments. This position is consistent with the Technological Pedagogical Content Knowledge (TPACK) framework, which conceptualizes effective technology integration as the interaction of technological, pedagogical and content knowledge (Mishra & Koehler, 2006; Koehler et al., 2013).

Digital skills in this context refer to the knowledge and abilities required to use digital technologies effectively, critically, safely and creatively for information access, communication, collaboration, and content creation, problem-solving and professional activity. For economics teachers, these skills include basic computer operation, information and internet literacy, spreadsheet use, data analysis, digital presentation, online collaboration, digital assessment and responsible engagement with emerging tools such as generative artificial intelligence. The OECD (2023a) distinguishes generic digital competence from digital teaching competence and professional digital competence, underscoring that teachers require not only general technology skills but also the ability to use digital tools in ways that support teaching, assessment, professional collaboration and learner development. Recent systematic evidence also shows that teachers' digital competence is multidimensional and should be considered in relation to pedagogical practice and subject domains (Smestad et al.,

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2023). Systematic review evidence similarly highlights the importance of developing digital teaching competence through teacher education and professional development (Revuelta-Domínguez et al., 2022).

The need for these competencies is particularly important in teacher education institutions. The transition to digital education can be constrained by inadequate infrastructure, unreliable connectivity, limited access to devices and resources, insufficient professional development and uneven levels of teacher preparedness. UNESCO, (2023) cautions that access to technology alone does not guarantee improved educational outcomes, while the World Bank, (2023) identifies teacher digital and digital-pedagogical skills as important conditions for effective technology use in education. These concerns make teacher preparation a central policy and institutional issue rather than a purely technical one.

The present study focuses on the Federal University of Education, Kontagora, Niger State. Although the literature has established the broad importance of digital competence in education, comparatively less attention has been given to the specific relationship between digital skills and economics teacher preparation in this institutional context. The study therefore examines the digital skills possessed by economics teachers, their perceived influence on teaching effectiveness, and the extent to which such skills support preparation for the global economy. Recent review evidence further confirms the growing importance of teacher digital competence in contemporary education (Grados, 2024).

Conceptual and Theoretical Framework

Digital skills encompass more than the ability to operate computers. They involve the capacity to locate, evaluate, process, create and communicate information through digital technologies and to apply these capabilities appropriately to specific tasks. For teachers, digital competence includes the pedagogical use of digital resources, digital assessment, communication and collaboration, and professional learning. The OECD (2023) therefore presents teacher digital competence as a combination of general digital skills, digital teaching competence and professional digital competence. This broader conception is useful for economics education because teachers need to connect digital tools with economic content and with teaching strategies rather than simply demonstrate technical proficiency.

Economics teacher preparation is the process through which prospective and practicing teachers develop the content knowledge, pedagogical knowledge, professional skills and technological capabilities required for effective economics teaching. (Shulman 1986) established the importance of integrating content knowledge with pedagogical knowledge, while (Mishra and Koehler, 2006) extended this logic by incorporating technological knowledge. Thus, effective economics teacher preparation in the digital era requires prospective teachers to understand not only what to teach and how to teach it, but also which digital tools can appropriately support particular economic concepts and learning outcomes.

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The global economy refers to an increasingly interconnected economic environment in which trade, finance, investment, production, information and technological activities cross national boundaries. Digitalisation has intensified this interdependence by enabling rapid information flows, digital commerce, financial technologies, remote collaboration and data-driven decision-making. Economics teachers consequently have a responsibility to prepare learners to interpret economic information and participate in workplaces in which digital competence is increasingly embedded.

The study is anchored in the TPACK framework. Mishra and Koehler (2006) argue that effective technology integration requires an interaction among technological knowledge, pedagogical knowledge and content knowledge. For economics teachers, the framework implies that technology should be selected in relation to the economic concept being taught and the pedagogical purpose of the lesson. Spreadsheet tools can support the analysis of economic data, simulations can illustrate market processes, digital visualizations can clarify trends, and online resources can expose learners to current national and international economic developments.

Methodology

The study adopted a descriptive survey case-study approach focused on the Federal University of Education, Kontagora, Niger State. The descriptive approach was appropriate because the study sought to describe respondents' existing digital competencies and their perceptions of how those competencies influence teaching and preparation for the global economy; no experimental manipulation was undertaken. The quantitative component was based on responses from 120 respondents within the institution, as reported in the original study dataset. Relevant scholarly literature and policy documents on digital competence, teacher preparation, educational technology and the digital economy were also reviewed to provide conceptual and contextual support for interpretation.

The responses were summarized using mean scores and standard deviations. A criterion mean of 2.50 was used to interpret the responses: a mean of 2.50 or above was treated as accepted, while a mean below 2.50 was treated as rejected. The analysis was organized around three substantive areas: computer and information literacy, the perceived influence of digital skills on teaching effectiveness, and the role of digital skills in preparing economics teachers for the global economy.

Results and Discussion

The results indicate that respondents generally possessed the basic digital competencies required to support economics teaching. As shown in Table 1, all five indicators recorded means above the 2.50 criterion. The highest mean was for the ability to use Microsoft Word for lesson preparation (3.71), while the lowest was for the use of Microsoft Excel for

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economic data analysis (3.42). The grand mean of 3.56 indicates an overall positive assessment of respondents' computer and information literacy.

Table 1. Computer and information literacy skills of economics teachers (N = 120)

S/N	Item	Mean	SD	Decision
1	Ability to operate computers effectively	3.58	0.64	Accepted
2	Ability to use Microsoft Word for lesson preparation	3.71	0.58	Accepted
3	Ability to use Microsoft Excel for economic data analysis	3.42	0.71	Accepted
4	Ability to search academic materials online	3.63	0.60	Accepted
5	Ability to evaluate information from online sources	3.48	0.69	Accepted
	Grand mean	3.56		Accepted

Source: Field Survey, 2026.

The result suggests that respondents had a reasonable foundation for using digital resources in professional practice. However, the comparatively lower score for Excel-based economic data analysis points to an area that could receive greater emphasis in teacher preparation. This is important because economics teaching frequently requires the interpretation and presentation of quantitative information. The finding is consistent with the OECD's (2023a) distinction between generic digital competence and teaching-specific digital competence: being able to use a computer is necessary, but teachers also need to use digital tools for subject-specific instructional purposes.

Table 2 shows that respondents perceived digital skills as improving teaching effectiveness. All five items exceeded the criterion mean, with the highest score recorded for the statement that digital skills improve lesson delivery (3.74). Technology-facilitated assessment and

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feedback recorded the lowest, although still accepted, mean of 3.47. The grand mean of 3.61 indicates a strong overall perception that digital competence contributes to effective teaching.

Table 2. Influence of digital skills on teaching effectiveness (N = 120)

S/N	Item	Mean	SD	Decision
1	Digital skills improve lesson delivery	3.74	0.55	Accepted
2	Digital technologies enhance students' participation	3.61	0.62	Accepted
3	Digital tools improve classroom interaction	3.55	0.67	Accepted
4	Technology facilitates assessment and feedback	3.47	0.70	Accepted
5	Digital competence improves teaching effectiveness	3.69	0.59	Accepted
	Grand mean	3.61		Accepted

Source: Field Survey, 2026.

This result supports the central argument of the TPACK framework that technology becomes educationally meaningful when it is integrated with pedagogy and content (Mishra & Koehler, 2006). The finding also accords with recent international evidence that teachers are important change agents in digital education and that effective use of technology depends on teachers' competence, confidence and pedagogical judgement (OECD, 2023a). The result should not, however, be interpreted as evidence that technology automatically improves learning. UNESCO, (2023) stresses that the educational value of technology depends on relevance, equity, sustainability and appropriate use. The implication for economics teacher

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preparation is therefore not simply to increase technology exposure, but to develop teachers' capacity to select and apply appropriate tools for specific learning purposes.

Table 3 indicates an even stronger perception of the contribution of digital skills to preparation for the global economy. The highest mean was recorded for the view that digital technologies prepare students for digital workplaces (3.79), followed by preparation for global educational practices (3.72) and improved graduate employability (3.68). The grand mean of 3.68 indicates strong overall agreement that digital competence is relevant to the preparation of economics teachers and their learners for contemporary economic life.

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Table 3. Role of digital skills in preparing economics teachers for the global economy (N = 120)

S/N	Item	Mean	SD	Decision
1	Digital skills prepare teachers for global educational practices	3.72	0.61	Accepted
2	Digital competence promotes innovative teaching methods	3.66	0.58	Accepted
3	Digital skills improve teachers' research competence	3.57	0.64	Accepted
4	Digital technologies prepare students for digital workplaces	3.79	0.56	Accepted
5	Digital skills improve graduates' employability	3.68	—	Accepted
	Grand mean	3.68		Accepted

Source: Field Survey, 2026.

The result reinforces the view that economics teacher preparation must respond to the digitalisation of work and economic activity. Digital workplaces require workers who can access information, analyse data, communicate electronically, collaborate across locations and adapt to changing technologies. OECD (2023b) identifies digital skills as part of the broader competencies required for teaching and learning in a rapidly changing world, while UNESCO (2023) places teacher preparation among the system conditions necessary for technology to reach its potential in education. The present finding therefore provides institutional evidence that digital competence is perceived as a bridge between teacher preparation and the demands of the wider economy.

Taken together, the three tables show a consistent pattern: respondents report adequate foundational digital skills, associate those skills with stronger teaching effectiveness, and perceive them as important for global economic participation. The pattern also suggests that teacher preparation should progress from basic computer literacy to more specialised digital teaching competence, including data analysis, digital assessment, collaborative platforms, online research and responsible use of emerging technologies. This is consistent with the OECD (2023a) view that teacher digital competence is multidimensional and with

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UNESCO's (2023) argument that technology should complement rather than displace sound pedagogy and human interaction.

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Conclusion

The study concludes that digital skills are an integral component of contemporary economics teacher preparation. At the Federal University of Education, Kontagora, respondents reported adequate computer and information literacy, strong perceptions of the contribution of digital skills to teaching effectiveness, and strong agreement that digital competence supports preparation for the global economy. The evidence suggests that the value of digital skills lies not merely in operating devices but in using technology to access current economic information, analyse data, communicate ideas, develop instructional resources, assess learning and connect classroom knowledge with changing economic realities.

The findings also indicate that the digital transformation of teacher education should be approached as a pedagogical and institutional process. Infrastructure, connectivity and devices are necessary, but they must be accompanied by sustained professional learning and curriculum integration. Teacher education institutions should therefore develop a coherent progression from basic digital literacy to subject-specific digital pedagogy and professional digital competence. Emerging technologies, including generative artificial intelligence, should be incorporated through responsible, ethical and human-centered approaches rather than through technology adoption for its own sake (UNESCO, 2023). The UNESCO framework for teachers also emphasises human-centered, ethical and pedagogically appropriate AI competence (Miao & Cukurova, 2024).

Recommendations

Digital literacy and digital pedagogy should be embedded across economics teacher education programmes so that technological competence is developed alongside economics content and pedagogical knowledge. The institution and relevant education authorities should strengthen access to reliable internet connectivity, appropriate digital devices, electricity and current educational software. Continuous professional development should give economics teachers practical opportunities to develop spreadsheet and data-analysis skills, digital assessment, online research, multimedia teaching, learning-management systems and collaborative digital practices. Institutional support should also encourage teachers to use current economic databases and authentic digital resources in ways that develop students' analytical and employability skills. Finally, the use of artificial intelligence and other emerging technologies should be guided by clear ethical principles concerning accuracy, privacy, academic integrity, inclusion and human oversight.

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