

Digitalization-Driven Transformation of Home Economics Education Through Digital Skills Integration

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Abstract: Digitalization-driven transformation has fundamentally redefined Home Economics education through the integration of digital skills that strengthen curriculum delivery, instructional innovation, learning experiences, and assessment practices while supporting educational modernization. This study employed a systematic review to synthesize scholarly evidence on how digital skills integration has transformed Home Economics education and to identify implementation barriers, enabling conditions, and future educational priorities. Relevant publications were systematically retrieved from Scopus, Web of Science, ERIC, ScienceDirect, and Google Scholar, screened using predetermined eligibility criteria, appraised for methodological quality, and synthesized through thematic analysis. The findings revealed that digitalization has promoted technology-responsive curriculum design, flexible learning accessibility, technology-enhanced instructional delivery, digital assessment innovations, digital competency institutionalization, and sustainable educational modernization. The review further identified technological resource limitations as the most frequently reported implementation barrier, while curriculum and policy advancement, institutional readiness, professional development, and continued research emerged as essential priorities for sustaining digital transformation. The synthesized evidence demonstrates that successful digitalization in Home Economics education depends on the coordinated integration of digital competence, pedagogical innovation, institutional support, and responsive educational policies to achieve sustainable educational development.

Keywords: Home Economics Education, Digitalization, Digital Skills Integration, Curriculum Transformation

1. INTRODUCTION

The accelerating digitalization of education has fundamentally reconfigured instructional delivery, curriculum implementation, learning engagement, and assessment practices across multiple educational disciplines. Although educational digital transformation has been extensively examined in science, technology, engineering, mathematics, and language education. Home Economics education has received comparatively limited academic emphasis despite its multidisciplinary nature requiring the integration of practical competencies, vocational proficiency, entrepreneurial capability, and life skills (Erjavšek & Kostanjevec, 2025). An educational technology from broader educational viewpoints, whereas a consolidated synthesis specifically examining how digital skills integration transforms curriculum delivery, instructional approaches, learning experiences, and assessment practices in Home Economics education remains insufficient (Navas-Bonilla et al., 2025). Furthermore, documented implementation barriers, enabling conditions, and future educational priorities remain fragmented across diverse publications, limiting a comprehensive understanding of the continuing transformation of Home Economics education. This knowledge deficiency necessitates a systematic review capable of integrating dispersed academic findings into a coherent body of evidence.

Digitalization extends beyond the adoption of technological devices and encompasses the reconstruction of educational ecosystems through digitally enabled pedagogy, interactive learning environments, data-informed instruction, collaborative knowledge construction, and technology-enhanced assessment (Kakogianni et al., 2025). The continuing evolution of digital assessment has likewise encouraged more flexible, authentic, and technology-

supported evaluation strategies that strengthen instructional quality and learner engagement across digitally mediated educational environments (Chavez & Lamorinas, 2023). Simultaneously, digital skills have emerged as indispensable educational competencies encompassing information literacy, digital communication, content creation, technological problem-solving, responsible technology utilization, and adaptive learning capability (Kayyali, 2024). These competencies increasingly determine instructional effectiveness as educational institutions continue transitioning toward digitally mediated teaching and learning environments. Home Economics education represents a distinctive discipline integrating food and nutrition, clothing and textiles, family resource management, consumer education, entrepreneurship, financial literacy, and sustainable living into authentic learning experiences. The incorporation of digital skills has expanded opportunities for virtual demonstrations, multimedia instruction, digital simulations, collaborative learning platforms, electronic portfolios, and technology-assisted performance assessment that reinforce experiential learning while extending instructional accessibility (Adeshina, 2024; Medeshova et al., 2025). Nevertheless, the extent to which these technological innovations collectively reshape Home Economics education has not yet been comprehensively synthesized, leaving substantial uncertainty regarding recurring educational patterns and instructional transformation.

The Philippine educational system has likewise experienced considerable digital transformation following national initiatives promoting technology-enhanced education, digital competency development, and educational innovation across basic and higher education institutions (Kunjiapu et al., 2025). Numerous educational institutions have adopted learning management systems, virtual classrooms, digital instructional resources, online assessment platforms, and blended learning modalities to strengthen educational continuity and instructional quality (Villanueva et al., 2023). Despite these developments, Home Economics education in the Philippines continues to encounter concerns associated with digital infrastructure disparities, technological accessibility, instructional preparedness, curriculum adaptation, and unequal acquisition of digital competencies. These circumstances indicate that successful educational digitalization requires not only technological availability but also institutional readiness, pedagogical innovation, curriculum responsiveness, and sustainable implementation strategies.

Addressing this academic deficiency, the present systematic review synthesizes contemporary publications concerning the digitalization-driven transformation of Home Economics education through digital skills integration. Specifically, it examines how digital competencies have transformed curriculum delivery, instructional practices, learning experiences, and assessment approaches while simultaneously synthesizing documented implementation barriers, enabling conditions, and future educational priorities. The synthesis generated through this article provides an integrated evidence base capable of informing curriculum enhancement, instructional innovation, educational policy formulation, and subsequent academic inquiry concerning the sustained advancement of Home Economics education in the Philippines and the broader international educational landscape.

2. LITERATURE

2.1 Digital Curriculum Delivery Transformation

Digitalization has transformed curriculum delivery in Home Economics education by integrating digital skills into instructional planning, content organization, and learning implementation. The incorporation of digital platforms and interactive learning resources has improved instructional accessibility and flexibility. Curriculum modernization also strengthens digital competence while aligning practical learning with evolving societal and workforce demands (Joseph et al., 2024). Moreover, technology-supported instruction promotes learner-centered experiences by encouraging active participation and independent learning (Cabalbag, 2025). These developments demonstrate that digitalization has reshaped curriculum delivery into a more adaptive and responsive educational process. Digital skills integration has further enhanced curriculum flexibility by supporting diverse instructional approaches across different learning environments (Temirkhanova & Karaca, 2024). Technology enables continuous access to instructional materials while encouraging collaborative and self-directed learning experiences. Such adaptability allows educators to contextualize Home Economics concepts without compromising the discipline's practical foundation. Consequently, digital curriculum transformation strengthens educational relevance and prepares learners to apply technological competencies in real-life and professional settings (Chanda et al., 2024).

2.2 Instructional Innovation and Assessment

Digitalization has encouraged instructional innovation by enabling educators to implement technology-enhanced teaching strategies that improve learner engagement and classroom interaction. Digital applications, multimedia resources, and virtual demonstrations have diversified instructional delivery while strengthening conceptual understanding. These approaches also foster creativity, critical thinking, and problem-solving through

more interactive learning experiences. As a result, technology integration enhances both instructional effectiveness and the overall quality of Home Economics education (Parveen & Ramzan, 2024; Amemasor et al., 2025). According to Okafor (2025), assessment practices have likewise evolved through digital technologies that support more efficient and continuous evaluation of student learning. Digital assessment tools provide timely feedback, performance monitoring, and authentic evaluation of both theoretical knowledge and practical competencies. It also encourage learners to reflect on their academic progress and improve learning outcomes through continuous feedback. Therefore, digital assessment strengthens instructional quality by promoting comprehensive and learner-focused evaluation practices.

2.3 Digital Implementation Challenges

Despite its educational benefits, digitalization in Home Economics education continues to face implementation challenges that influence instructional effectiveness. Limited technological infrastructure, inadequate digital devices, and unstable internet connectivity remain common barriers to successful technology integration (Kunjiapu et al., 2025). These limitations reduce educators' capacity to maximize digital instructional resources and create unequal learning opportunities among students. Addressing these barriers requires greater institutional support and equitable access to digital learning resources. Educator readiness also plays a critical role in sustaining digital transformation within Home Economics education. Differences in digital competence, limited professional development, and resistance to instructional change may hinder effective technology integration (Vidal-Esteve et al., 2026). Continuous training, supportive institutional policies, and collaborative professional learning are therefore essential for strengthening educators' digital capabilities (Gu et al., 2025). Collectively, these efforts contribute to more sustainable and effective digital implementation across educational settings .

3. METHODOLOGY

3.1 Research Design

This study employed a systematic review design to comprehensively synthesize existing scholarly publications concerning the digitalization of Home Economics education through digital skills integration. The systematic review approach was selected because it enables the structured identification, evaluation, and synthesis of relevant published findings using transparent and replicable procedures. Unlike conventional narrative reviews, this design minimizes selection bias through predefined review protocols, thereby producing a comprehensive understanding of how digital skills integration has influenced curriculum delivery, instructional practices, assessment approaches, implementation challenges, enabling conditions, and future educational priorities. The review process was conducted in accordance with internationally recognized systematic review principles to ensure methodological rigor, consistency, and credibility. The systematic review was guided by predetermined review objectives and corresponding research questions, which directed the search strategy, study selection, data extraction, and thematic synthesis, these are presented in Table 1.

Table 1. Research objectives and questions

Objectives	Research Questions
To systematically examine how digital skills integration has transformed curriculum delivery, instructional practices, learning experiences, and assessment approaches in Home Economics education.	How has digital skills integration influenced curriculum delivery in Home Economics education? What instructional and assessment innovations have emerged from digitalization in Home Economics education? What patterns of educational transformation are consistently reported across existing publications on digitalized Home Economics education?
To synthesize documented implementation barriers, enabling conditions, and future priorities associated with digitalization in Home Economics education.	What implementation barriers are most frequently reported during the digitalization of Home Economics education?

	What future directions and knowledge gaps are consistently recommended for advancing digitalized Home Economics education?
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3.2 Data Sources

Relevant publications were retrieved from internationally recognized academic databases, including Scopus, Web of Science, ERIC, ScienceDirect, and Google Scholar, to ensure comprehensive coverage of peer-reviewed educational publications. These databases were selected because they index high-quality international literature related to education, digital learning, instructional innovation, and curriculum development. Utilizing multiple databases enhanced the breadth of the search process while reducing the possibility of excluding significant publications relevant to the review objectives.

3.3 Eligibility Criteria

The selection of publications followed predetermined inclusion and exclusion criteria to maintain consistency throughout the review. Included publications consisted of peer-reviewed journal articles focusing on digitalization, digital skills integration, instructional innovation, curriculum implementation, assessment practices, and related educational developments within Home Economics education. Articles unrelated to the research objectives, conference abstracts, editorials, opinion papers, book reviews, dissertations, duplicate publications, and studies with insufficient methodological information were excluded. Applying these criteria ensured that only relevant and methodologically appropriate publications contributed to the final synthesis.

The study selection process followed a systematic screening procedure. Initially, all retrieved publications were reviewed based on their titles and abstracts to determine their relevance to the review objectives. Publications meeting the preliminary screening requirements subsequently underwent full-text assessment to verify their eligibility according to the established inclusion criteria. Only articles that fully satisfied the selection requirements were retained for the final review. This systematic screening procedure promoted transparency while minimizing potential selection bias throughout the review process.

3.4 Data Extraction

Data extraction was conducted using a standardized extraction matrix developed specifically for this review. Relevant information gathered from each eligible publication included the author, publication year, country, research objectives, methodology, participants where applicable, major findings, implementation challenges, enabling conditions, and recommended future directions. Organizing extracted information into a structured matrix facilitated systematic comparison across publications and supported accurate thematic organization during the synthesis process.

3.5 Quality Appraisal

To ensure the credibility of the synthesized findings, each eligible publication underwent methodological quality appraisal using predetermined evaluation criteria appropriate for systematic reviews. Publications were assessed based on the clarity of research objectives, methodological rigor, transparency of data collection and analysis procedures, relevance to the review objectives, and overall reporting quality. This appraisal process strengthened the reliability of the synthesized evidence by ensuring that conclusions were derived from methodologically sound and credible publications.

3.7 Thematic Synthesis

The extracted findings were synthesized using thematic synthesis to identify recurring concepts, patterns, and relationships reported across the selected publications. Similar findings were systematically coded, categorized, and integrated into broader themes corresponding to the objectives of the review. The synthesis focused on digital curriculum transformation, instructional and assessment innovations, implementation challenges, enabling conditions, and future priorities associated with digitalization in Home Economics education. This analytical approach enabled the development of coherent thematic interpretations while preserving the contextual meaning of the original publications, thereby providing a comprehensive understanding of the current state of knowledge regarding digital skills integration in Home Economics education.

4. RESULTS

Objective 1. To systematically examine how digital skills integration has transformed curriculum delivery, instructional practices, learning experiences, and assessment approaches in Home Economics education.

***RQ 1.** How has digital skills integration influenced curriculum delivery in Home Economics education?*

Technology-Responsive Curriculum Design

Digital skills integration has consistently reshaped curriculum delivery by embedding technology within instructional planning and competency development. Digital platforms enabled more flexible curriculum implementation through interactive learning resources and technology-supported instructional activities (Chanada et al., 2024). Other publications highlighted that curriculum redesign increasingly integrates digital competence with practical Home Economics concepts, strengthening the alignment between academic instruction and contemporary societal demands (Adam & Nasri, 2025). The reviewed evidence likewise indicated that technology-enhanced curriculum delivery promotes greater instructional adaptability while preserving the experiential nature of Home Economics education. The synthesized findings demonstrate a sustained transition toward more digitally responsive curriculum frameworks.

Flexible Learning Accessibility

Multiple publications described how digital learning platforms, electronic instructional resources, and online learning environments increased learners' opportunities to access educational content beyond conventional classroom settings (Zuo et al., 2025). A flexible access to instructional materials supported continuous learning while accommodating diverse learning preferences and instructional contexts. Several publications also noted that educational institutions continue addressing disparities in digital access, particularly in resource-constrained learning environments, to strengthen equitable curriculum implementation (Aini, 2025). Overall, the reviewed findings suggest that digitalization has broadened instructional accessibility while emphasizing the importance of inclusive educational provision.

***RQ 2.** What instructional and assessment innovations have emerged from digitalization in Home Economics education?*

Technology-Enhanced Instructional Delivery

Technology-enhanced instructional delivery has redefined the manner in which Home Economics concepts are facilitated within digitally supported learning environments. Several reviewed publications described the utilization of multimedia presentations, virtual demonstrations, interactive applications, and digital learning platforms to strengthen instructional effectiveness (Empimo, 2025). Whereas some publications emphasized increased learner engagement through interactive digital resources, others highlighted improved conceptual visualization that strengthened the delivery of practical competencies. These converging perspectives indicate that technology-enhanced instruction has diversified pedagogical delivery while preserving the experiential foundation of Home Economics education (Sepadi & Molatudi, 2026).

Digital Assessment Innovations

Digital assessment innovations have transformed the evaluation of learning outcomes by introducing more flexible and technology-supported assessment approaches. The implementation of electronic portfolios, online assessment systems, digital performance tasks, and automated feedback mechanisms to evaluate learners' theoretical understanding and practical competencies (Anastasopoulou et al., 2024). Although some publications emphasized the efficiency of digital assessment through continuous performance monitoring, others underscored its capacity to provide authentic evidence of learners' competency development and instructional progress (Ixatova et al., 2026). Taken together, the reviewed evidence suggests that digital assessment has strengthened the credibility, responsiveness, and comprehensiveness of evaluating Home Economics learning outcomes.

***RQ 3.** What patterns of educational transformation are consistently reported across existing publications on digitalized Home Economics education?*

Digital Competency Institutionalization

The institutionalization of digital competencies has become a defining pattern characterizing the transformation. Digital literacy, information management, digital communication, and technological problem-solving are increasingly embedded within curriculum implementation alongside practical Home Economics competencies

(Chanda et al., 2024). Although some publications primarily associated digital competency with technological proficiency, others emphasized its contribution to critical thinking, collaborative learning, and lifelong learning capabilities required in contemporary education. The reviewed publications further indicated that many educational institutions have aligned curriculum enhancement with international digital competency frameworks and twenty-first-century learning standards to strengthen graduate preparedness (Zhao et al., 2021). These converging patterns suggest that digital competence has evolved from a supplementary instructional component into an institutional educational priority supporting sustainable learner development.

Sustainable Educational Modernization

A sustained digital transformation depends upon continuous curriculum enhancement, institutional innovation, and strategic technology integration that collectively improve educational quality (Basalamah, 2026). Long-term transformation requires coordinated efforts among educators, institutions, and policymakers to maintain instructional relevance within rapidly evolving digital environment. Consequently, the reviewed evidence characterizes digitalization as a strategic pathway toward sustaining innovation and advancing the long-term development of Home Economics education (Singun, 2025).

Objective 2. To synthesize documented implementation barriers, enabling conditions, and future priorities associated with digitalization in Home Economics education.

RQ 1. What implementation barriers are most frequently reported during the digitalization of Home Economics education?

Technological Resource Limitations

Technological resource limitations remain among the most persistent constraints hindering digitalization. Digital infrastructure, unstable internet connectivity, and insufficient instructional technologies as primary obstacles affecting technology-supported teaching and learning (Mohammed et al., 2026). Although some publications emphasized infrastructure as the dominant implementation concern, others highlighted unequal access to digital resources as the underlying factor contributing to inconsistent instructional delivery across educational settings. This convergence indicates that sustainable digitalization depends not only on technological availability but also on equitable access that enables consistent instructional implementation (Egwim et al., 2025).

RQ 2. What future directions and knowledge gaps are consistently recommended for advancing digitalized Home Economics education?

Curriculum and Policy Advancement

Curriculum refinement and policy enhancement remain central priorities for advancing digitalized Home Economics education, it is recommended strengthening digital competencies while preserving the practical and experiential orientation of the discipline (Ramdana et al., 2026). Although some publications prioritized curriculum modernization, others emphasized responsive institutional policies capable of sustaining technology integration across diverse educational contexts. These complementary perspectives indicate that curriculum innovation and policy development should progress concurrently to sustain educational transformation (Tang et al., 2025).

Emerging Research Priorities

Encouraged broader investigations across educational levels, instructional environments, and technology integration models to address existing knowledge deficiencies. Conversely, other publications recommended longitudinal investigations capable of examining the sustained educational implications of digital skills integration over extended periods (Mdhlalose & Mlambo, 2023). Collectively, these recommendations highlight the necessity of generating more comprehensive and contextually diverse evidence to inform future educational practice, policy development, and technological innovation

5. DISCUSSION

The synthesized findings demonstrate that digital skills integration has extended beyond technological adoption and has progressively reconfigured curriculum implementation, instructional delivery, assessment approaches, and institutional practices within Home Economics education. The recurring patterns identified across the reviewed publications indicate that curriculum transformation increasingly emphasizes competency-oriented learning, instructional flexibility, technology-enhanced pedagogy, and authentic assessment, reflecting the evolving demands of contemporary education. Successful digital transformation further depends on educator preparedness and inclusive

instructional implementation that enable diverse learners to participate effectively in technology-enhanced educational environments (Leon et al., 2024). This interpretation aligns with educational transformation principles asserting that meaningful digitalization requires the integration of technological competence with pedagogical innovation rather than the simple incorporation of digital tools. Although numerous publications emphasized the instructional advantages associated with digital platforms, others argued that sustainable educational improvement depends upon institutional preparedness, continuous professional development, and equitable technological accessibility. These converging and contrasting findings suggest that, successful digitalization is achieved through the coordinated interaction of curriculum innovation, educator capability, institutional commitment, and learner readiness instead of isolated technological implementation (Alenezi, 2023)

The study further indicates that implementation barriers and enabling conditions collectively determine the continuity of digital transformation within Home Economics education. Persistent constraints involving technological infrastructure, digital competence, and institutional support remain substantial concerns, whereas strategic leadership, professional learning opportunities, responsive educational policies, and curriculum refinement consistently emerged as facilitating conditions (Torres et al., 2024). This interpretation corresponds with educational innovation frameworks proposing that sustainable digital transformation requires organizational adaptability, continuous capacity enhancement, and systematic policy support to maintain instructional quality (Elbolok et al., 2025). Strengthening educators' confidence in implementing digital and AI-oriented instructional strategies remains essential for sustaining long-term educational innovation and effective technology integration (Diamante et al., 2025). Moreover, the recurring recommendations concerning curriculum modernization, expanded academic inquiry, and long-term educational planning indicate that digitalization should be regarded as a continuous developmental process rather than a temporary educational response (McCarthy et al., 2023). Building upon these synthesized patterns, the present review advances the proposition that an integrated framework combining digital competence, pedagogical adaptability, institutional readiness, and sustainable policy development offers a more comprehensive foundation for strengthening the future trajectory of Home Economics education.

6. CONCLUSION

This systematic review demonstrated that digital skills integration has become a fundamental driver of the digitalization-driven transformation of Home Economics education by strengthening curriculum delivery, instructional practices, assessment approaches, and institutional educational development. The synthesized evidence confirmed that technology-supported learning extends beyond the adoption of digital tools by promoting technology-responsive curricula, innovative pedagogy, authentic assessment, and the institutionalization of digital competencies. The review likewise established that sustainable digital transformation remains dependent on addressing technological resource limitations through institutional readiness, professional development, responsive educational policies, and continuous curriculum enhancement. Integrating previously fragmented evidence into a coherent body of knowledge, this review addresses the existing knowledge gap regarding the collective influence of digital skills integration on Home Economics education. Therefore, the findings provide a comprehensive evidence base that supports future curriculum enhancement, educational decision-making, and the sustained advancement of digitally responsive Home Economics education.

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