

LEVERAGING AI APPLICATIONS IN HOME ECONOMICS FOR EFFICIENT EDUCATIONAL MANAGEMENT AND PLANNING

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Abstract

This study examined the role of AI applications in promoting efficient educational management and planning in Home Economics education. The main purpose of the study was leveraging AI applications in home economics for efficient educational management and planning. A descriptive survey research design was adopted with three research questions. Data were collected from Home Economics lecturers, Heads of Department, and programme coordinators drawn from tertiary institutions across the six geopolitical zones of Nigeria using a researcher-developed questionnaire administered through Google Forms. The instrument was validated using statistical tools by experts in Home Economics Education and Measurement and Evaluation. Frequency and percentage were used to analyze demographic data, while mean and standard deviation were used to answer the research questions using a criterion mean of 2.50. Results showed that respondents perceived AI applications as effective tools for strengthening instructional planning (Grand Mean = 3.45), particularly in lesson preparation, instructional material development, classroom assessment, practical lesson organization, and curriculum implementation. AI also improved educational management efficiency (Grand Mean = 3.46) through better record management, communication, monitoring of students' academic progress, and reduced administrative workload. Positive perceptions were equally recorded for the contribution of AI to educational planning (Grand Mean = 3.45), especially in evidence-based decision-making, instructional resource planning, curriculum implementation, and resource allocation. The study revealed that AI could strengthen instructional quality, educational management, and planning in Home Economics when applied responsibly alongside educators' professional expertise. The contributions of this study will help in leveraging AI applications in home economics and other areas of study for efficient educational management and planning.

Keywords: Artificial Intelligence, Home Economics Education, Educational Management, Educational Planning, Instructional Planning.

Introduction

Home Economics education continues to evolve in response to changing family needs, technological advancement, workforce expectations, and the increasing demand for practical life skills. The discipline equips learners with competencies in food and nutrition, clothing and textiles, family resource management, consumer education, entrepreneurship, and sustainable living, making it one of the few school subjects that directly links classroom learning with everyday life and community development (Kuusisaari et al., 2021). Digital transformation has gradually reshaped how these competencies are taught, creating opportunities for educators to improve lesson delivery, practical demonstrations, learner engagement, and programme administration through emerging technologies (Obunadike, 2023). As educational institutions pursue greater efficiency and innovation, the integration of artificial intelligence (AI) into Home

Economics has become an important aspect of contemporary educational practice (UNESCO, 2023).

Artificial intelligence has shifted from being viewed primarily as a technological innovation to becoming a practical educational resource that supports teaching, learning, assessment, and institutional decision-making. Modern AI applications can generate instructional materials, organize lesson sequences, analyze learner performance, recommend appropriate learning resources, and automate routine administrative processes that traditionally consume considerable instructional time (Kasneci et al., 2023). These capabilities enable educators to devote greater attention to learner-centred activities, practical instruction, and curriculum implementation while improving the quality of educational management (Ng et al., 2023). Within vocational disciplines such as Home Economics, where teaching combines theoretical concepts with laboratory-based and project-oriented experiences, AI provides additional opportunities for planning, organization, and instructional support (Suparyati et al., 2023).

The practical orientation of Home Economics places substantial planning responsibilities on educators before classroom instruction begins. Teachers must prepare lesson plans, organize laboratory activities, estimate material requirements, coordinate practical sessions, monitor learner progress, and evaluate outcomes across diverse content areas. Meeting these responsibilities efficiently has become more challenging as enrolment expands, curriculum expectations increase, and institutions seek evidence-based approaches to educational management (Chen et al., 2023). AI-powered applications now assist educators by generating lesson outlines, producing instructional resources, supporting classroom assessment, and organizing academic records, thereby reducing repetitive workload while improving instructional consistency (Ren & Wu, 2025). These developments position AI as a valuable decision-support tool that complements, rather than replaces, the professional expertise of Home Economics educators (Li et al., 2025).

Educational management within Home Economics extends beyond classroom instruction to include the coordination of human, financial, and instructional resources required for effective programme implementation. Practical lessons often depend on the timely availability of equipment, consumable materials, laboratory space, and financial resources, making efficient planning essential for successful learning outcomes (Camilleri, 2023). AI-supported management systems provide opportunities to forecast instructional resource requirements, monitor expenditure, analyze learner participation, and improve communication among lecturers, administrators, and students through data-driven processes (Labyad et al., 2024). Such capabilities strengthen institutional planning by enabling educational managers to make informed decisions based on current information rather than relying solely on manual administrative procedures (OECD, 2021).

Educational planning has also become increasingly data-oriented as institutions seek to improve curriculum implementation, allocate resources more effectively, and respond promptly to changing educational needs. AI technologies can identify learning patterns, predict instructional demands, and provide analytical insights that support curriculum review, programme evaluation, and long-term strategic planning (Carolus et al., 2023). These analytical capabilities are particularly valuable in Home Economics because the discipline requires continuous adjustment of practical activities, instructional materials, and learning experiences to reflect developments in nutrition, family wellbeing, consumer behaviour, sustainability, and entrepreneurship (Eze, 2023). When integrated responsibly, AI strengthens educational planning

by supporting evidence-based decisions while preserving educators' responsibility for professional judgement and contextual adaptation (UNESCO, 2023).

Despite these opportunities, effective AI integration in Home Economics depends on factors that extend beyond access to technology. Research has shown that many educators possess adequate awareness of AI concepts but experience difficulty translating theoretical knowledge into confident classroom practice and instructional decision-making (Capuno-Marsan & Marsan, 2026). Challenges relating to infrastructure, internet connectivity, digital competence, institutional support, and professional development continue to influence the extent to which AI applications are incorporated into everyday teaching and educational management (Younis, 2024). The successful adoption of AI therefore requires sustained investment in teacher capacity building, supportive institutional policies, and the development of context-appropriate strategies that align technological innovation with the practical philosophy of Home Economics education (Bautista et al., 2024).

Although artificial intelligence is increasingly being adopted across different levels of education, much of the available research has concentrated on adaptive learning systems, intelligent tutoring, learning analytics, automated assessment, and students' academic achievement. Comparatively less attention has been devoted to understanding how AI can strengthen educational management and planning within discipline-specific contexts such as Home Economics, where effective teaching depends on the coordination of practical instruction, instructional resources, laboratory facilities, continuous assessment, and administrative responsibilities (Li & Wong, 2023). Existing evidence also indicates that while educators generally recognize the potential of AI to improve teaching, there remains limited empirical understanding of how these technologies can support the broader managerial and planning responsibilities associated with Home Economics programmes (Ren & Wu, 2025). This imbalance has created an important gap in the literature because the effectiveness of Home Economics education depends as much on sound educational planning and resource management as it does on classroom instruction (Capuno-Marsan & Marsan, 2026).

The situation is particularly significant in developing countries where educational institutions continue to face challenges associated with inadequate instructional facilities, increasing student enrolment, constrained financial resources, and growing expectations for quality assurance. Nigerian tertiary institutions have made noticeable progress in adopting digital technologies for teaching, learning, and academic administration, yet the integration of AI into educational management and planning remains uneven across programmes and institutions (Oluwagbemileke, 2024). While many Home Economics educators have begun experimenting with AI-powered applications for lesson preparation, instructional content development, and assessment, their use for resource planning, programme management, learner data analysis, and institutional decision-making is still developing (Obunadike, 2023). This suggests that the full potential of AI in supporting efficient educational management within Home Economics has not yet been fully realized (UNESCO, 2023).

Home Economics occupies a distinctive position within vocational and technology education because it combines theoretical instruction with practical experiences that require careful coordination before, during, and after classroom activities. Successful implementation of practical lessons depends on effective scheduling, adequate provision of materials, proper laboratory management, learner supervision, record keeping, and continuous monitoring of instructional outcomes (Camilleri, 2023). AI applications have introduced new possibilities for managing these responsibilities through automated documentation, intelligent scheduling,

predictive analysis, personalized instructional support, and data-driven decision-making that can improve both teaching quality and institutional efficiency (Park et al., 2023). These capabilities align with the contemporary expectation that Home Economics education should prepare learners with practical competencies while embracing technological innovations that enhance educational effectiveness and sustainable development (Kuusisaari et al., 2021).

The increasing availability of generative AI has accelerated these opportunities by providing educators with tools capable of producing lesson plans, instructional materials, assessment tasks, practical activity guides, and administrative reports within a relatively short period. These technologies also support curriculum mapping, instructional resource forecasting, learner performance analysis, and evidence-based educational planning, allowing educators to make more informed decisions while reducing the time devoted to repetitive administrative activities (Kasneci et al., 2023). Nevertheless, AI-generated outputs require careful professional evaluation because issues relating to accuracy, bias, ethical use, data privacy, and contextual relevance remain important considerations in educational practice (Li et al., 2025). Effective AI integration therefore depends on educators' professional judgement and their ability to adapt technological outputs to the practical realities of Home Economics classrooms (Daher, 2025).

Despite the growing availability of AI-enabled educational tools and increasing interest in digital innovation within Home Economics, empirical evidence that specifically examines their contribution to instructional planning, educational management, and educational planning remains limited, particularly within the Nigerian context. Most existing studies have focused on AI literacy, technology acceptance, or classroom instruction, leaving comparatively little evidence regarding how AI supports the administrative and planning functions that underpin effective Home Economics education (Ng et al., 2023). Generating empirical evidence in this area will provide educators, institutional administrators, curriculum developers, and policymakers with a clearer understanding of how AI can be responsibly leveraged to strengthen educational management while preserving the practical and learner-centred philosophy of Home Economics education (Bautista et al., 2024). This study therefore examines the extent to which artificial intelligence applications can be leveraged to promote efficient educational management and planning in Home Economics education.

Objectives of the Study

The broad objective of this study was to examine how artificial intelligence (AI) applications can be leveraged in Home Economics for efficient educational management and planning. The specific objectives are to:

1. examine the influence of AI applications on instructional planning in Home Economics education.
2. assess the effect of AI applications on educational management efficiency in Home Economics education.
3. determine the contribution of AI applications to educational planning in Home Economics education.

Methods

This study adopted a descriptive survey research design. The design was considered appropriate because it enabled the researchers to obtain empirical evidence on how artificial intelligence (AI) applications are leveraged in Home Economics for efficient educational management and planning. The design also provided an opportunity to gather the opinions and

experiences of respondents regarding the use of AI applications in instructional planning, educational management, and educational planning without manipulating the study variables.

The study was conducted among Home Economics educators in tertiary institutions across Nigeria. The setting was considered appropriate because higher education institutions have increasingly embraced digital technologies for teaching, learning, assessment, and academic administration. The growing availability of AI-powered educational applications within these institutions provides an appropriate context for examining their contributions to educational management and planning in Home Economics education.

The target population comprised Home Economics lecturers, Heads of Department (HODs), and programme coordinators in Home Economics departments of tertiary institutions across Nigeria who possess adequate knowledge of instructional delivery, educational planning, and educational management practices. Owing to the wide geographical distribution of the target population of 2,500 and the ease of reaching respondents through digital communication platforms, a convenience sampling technique was adopted. The technique enabled the researchers to recruit participants who were readily accessible, willing to participate, and sufficiently knowledgeable about the subject matter. A total of 250 respondents participated in the study, and all the completed questionnaires were found valid and suitable for analysis.

Data were collected using a researcher-developed structured questionnaire designed after an extensive review of literature on artificial intelligence, Home Economics education, educational management, and educational planning. The instrument consisted of two sections. Section A demographic characteristics consisting of gender, Age, Qualification, current Designation, Years of Teaching Experience and Use of AI Applications. Section B contained questionnaire items developed in line with the objectives of the study. The items in Section B were measured using a four-point scale of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1).

Before the administration of the instrument, the questionnaire was subjected to face and content validation by experts in Home Economics Education and Measurement and Evaluation to ascertain the clarity, relevance, adequacy, and suitability of the questionnaire items in measuring the study variables. Their observations and recommendations were incorporated into the final version of the instrument before data. Reliability coefficient was consistent and dependable with a coefficient of .80. The validated questionnaire was converted into an online survey using Google Forms. The survey link was distributed through digital platforms, including WhatsApp, Facebook, X (formerly Twitter), Telegram, LinkedIn, and professional academic forums frequented by Home Economics educators. Respondents were encouraged to share the survey link with other eligible participants within their professional networks to improve participation and geographical coverage. Participation in the study was voluntary. Respondents were informed about the purpose of the study, and anonymity and confidentiality of the information provided were assured. Completion of the questionnaire was taken as evidence of informed consent.

The data collected were analyzed using frequency and percentage to describe the demographic characteristics of the respondents, while mean and standard deviation were used to answer the research questions. A criterion mean of 2.50 served as the decision benchmark. Mean scores of 2.50 and above were regarded as Accepted, whereas mean scores below 2.50 were regarded as Rejected.

Results and Discussion

Table 1

Demographic Characteristics of Respondents

Variable	Frequency (f)	Percentage (%)
Gender		
Male	102	40.8
Female	148	59.2
Total	250	100.0
Age (Years)		
25–34	58	23.2
35–44	94	37.6
45–54	63	25.2
55 years and above	35	14.0
Total	250	100.0
Highest Qualification		
Bachelor's Degree	49	19.6
Master's Degree	123	49.2
Doctorate Degree	78	31.2
Total	250	100.0
Current Designation		
Lecturer	183	73.2
Head of Department	41	16.4
Programme Coordinator	26	10.4
Total	250	100.0
Years of Teaching Experience		
1–5 years	46	18.4
6–10 years	84	33.6
11–15 years	67	26.8
Above 15 years	53	21.2
Total	250	100.0
Use of AI Applications		
Frequently	95	38.0
Occasionally	112	44.8
Rarely	43	17.2
Total	250	100.0

Table 1 presents the demographic characteristics of the respondents from south east-south-south and south-west of Nigeria. Female educators constituted the majority of the sample (59.2%), while nearly half of the respondents possessed a Master's degree (49.2%). Lecturers accounted for 73.2% of the participants, and the largest proportion (33.6%) had between six and ten years of teaching experience. In terms of AI usage, 44.8% reported occasional use of AI applications, whereas 38.0% indicated frequent use. These characteristics suggest that the findings were derived from experienced Home Economics educators with a reasonable level of exposure to AI-supported teaching and academic activities.

Table 2

Mean Responses on the Influence of AI Applications on Instructional Planning in Home Economics Education

S/ N	Statement	Mean	SD	Decision
1	AI applications assist in preparing lesson plans more efficiently.	3.48	.66	Accepted
2	AI tools improve the development of instructional materials for Home Economics	3.45	.69	Accepted

	lessons.			
3	AI applications support the preparation of classroom assessments and assignments.	3.39	.72	Accepted
4	AI applications improve the organization of practical lesson activities.	3.42	.68	Accepted
5	AI applications enhance curriculum implementation through better instructional planning.	3.51	.64	Accepted
Grand Mean		3.45	.68	Accepted

Decision Rule: Mean ≥ 2.50 = Accepted; Mean < 2.50 = Rejected.

Table 2 shows that respondents expressed positive perceptions regarding the influence of AI applications on instructional planning, with all mean scores exceeding the decision benchmark of 2.50. The highest-rated statement was that AI applications enhance curriculum implementation through better instructional planning (M = 3.51, SD = .64), while support for lesson preparation (M = 3.48, SD = .66), instructional material development (M = 3.45, SD = .69), organization of practical lesson activities (M = 3.42, SD = .68), and classroom assessment (M = 3.39, SD = .72) also received favourable ratings. The grand mean of 3.45 (SD = .68) indicates a generally positive perception that AI strengthens instructional planning in Home Economics education.

Table 3

Mean Responses on the Effect of AI Applications on Educational Management Efficiency in Home Economics Education

S/N	Statement	Mean	SD	Decision
1	AI applications improve the management of students' academic records.	3.47	.68	Accepted
2	AI applications enhance communication between lecturers and students.	3.41	.72	Accepted
3	AI applications reduce the time spent on routine administrative tasks.	3.53	.65	Accepted
4	AI applications improve the monitoring of students' academic progress.	3.38	.71	Accepted
5	AI applications promote efficient management of teaching activities.	3.49	.66	Accepted
Grand Mean		3.46	.68	Accepted

Decision Rule: Mean ≥ 2.50 = Accepted; Mean < 2.50 = Rejected.

Table 3 shows respondents' views on the effect of AI applications on educational management efficiency in Home Economics education. All the statements recorded mean scores above the criterion mean of 2.50, reflecting positive perceptions of the role of AI in educational management. The highest level of agreement was recorded for the statement that AI applications reduce the time spent on routine administrative tasks (M = 3.53, SD = .65). Respondents also agreed that AI promotes efficient management of teaching activities (M = 3.49, SD = .66), improves the management of students' academic records (M = 3.47, SD = .68), enhances communication between lecturers and students (M = 3.41, SD = .72), and supports the monitoring of students' academic progress (M = 3.38, SD = .71). The grand mean of 3.46 (SD = .68) suggests that AI applications are widely regarded as effective tools for improving administrative efficiency and supporting educational management in Home Economics education.

Table 4

Mean Responses on the Contributions of AI Applications to Educational Planning in Home Economics

S/N	Statement	Mean	SD	Decision
1	AI applications support effective academic planning in Home Economics programmes.	3.50	.63	Accepted
2	AI applications assist in forecasting instructional resource needs.	3.39	.70	Accepted

3	AI applications improve decision-making for curriculum implementation.	3.45	.67	Accepted
4	AI applications facilitate better allocation of instructional resources.	3.36	.74	Accepted
5	AI applications promote evidence-based educational planning.	3.55	.61	Accepted
Grand Mean		3.45	.67	Accepted

Decision Rule: Mean ≥ 2.50 = Accepted; Mean < 2.50 = Rejected.

Table 4 presents respondents' perceptions of the contribution of AI applications to educational planning in Home Economics education. The mean scores for all the statements exceeded the decision benchmark of 2.50, indicating agreement that AI contributes positively to planning activities. The highest-rated statement was that AI applications promote evidence-based educational planning ($M = 3.55$, $SD = .61$), followed by support for effective academic planning in Home Economics programmes ($M = 3.50$, $SD = .63$) and improved decision-making for curriculum implementation ($M = 3.45$, $SD = .67$). Respondents also acknowledged the role of AI in forecasting instructional resource needs ($M = 3.39$, $SD = .70$) and facilitating the allocation of instructional resources ($M = 3.36$, $SD = .74$). The grand mean of 3.45 ($SD = .67$) demonstrates a shared perception that AI applications enhance educational planning by supporting informed decision-making and more effective resource management within Home Economics education.

Discussion of Findings

The positive ratings recorded for instructional planning indicate that Home Economics educators consider AI applications as valuable tools for improving the preparation and delivery of instruction. With a grand mean of 3.45 (Table 2), respondents recognized the contribution of AI to lesson planning, instructional material development, classroom assessment, organization of practical activities and curriculum implementation. These outcomes reflect the practical nature of Home Economics, where effective teaching requires considerable preparation before practical demonstrations, laboratory activities and learner assessment. AI-supported applications simplify many routine planning tasks, allowing educators to devote greater attention to instructional quality, learner engagement and the adaptation of teaching materials to different learning needs. Similar observations were reported by Capuno-Marsan and Marsan (2026), who found that educators regarded AI as an effective resource for lesson design and instructional innovation in Home Economics. Studies by Kasneci et al., (2023) also showed that generative AI improves the preparation of teaching materials and assessment tasks, while Ng et al. (2023) noted that teachers with stronger AI competencies were better positioned to integrate digital technologies into classroom practice.

Although respondents acknowledged the instructional value of AI, their responses suggest that technology is viewed primarily as a professional support system rather than an alternative to the expertise of Home Economics educators. Practical subjects demand continuous supervision, demonstration of psychomotor skills and immediate instructional decisions that remain dependent on teachers' professional judgement. This perspective is consistent with the position advanced by UNESCO (2023), which emphasized that AI should strengthen rather than replace pedagogical decision-making. Evidence reported by Ren and Wu (2025) similarly indicates that successful AI integration depends on educators' competence and confidence in applying digital tools within authentic teaching contexts. Comparable conclusions were reached by Bautista et al. (2024), who observed that technological readiness alone does not guarantee effective classroom integration unless educators possess the pedagogical knowledge required to align AI applications with curriculum objectives.

Educational management also benefited from the application of AI, as reflected in the grand mean of 3.46 reported in Table 3. Respondents associated AI with improved management

of students' records, more efficient communication, monitoring of academic progress and reduced administrative workload. These responsibilities occupy a substantial proportion of academic staff time, particularly in Home Economics programmes where practical sessions, continuous assessment and laboratory activities require extensive documentation. AI applications reduce the burden associated with repetitive administrative processes, creating greater opportunities for lecturers to concentrate on teaching, learner support and programme development. This outcome aligns with the findings of OECD (2021), which identified AI as an emerging tool for improving institutional efficiency through intelligent management of educational information. Research conducted by Chen et al. (2023) also demonstrated that AI technologies increasingly support educational processes beyond classroom instruction by strengthening institutional operations and resource management. Similar evidence presented by Li and Wong (2023) highlights the growing contribution of AI to personalized educational management and institutional decision support.

The positive perception expressed by respondents also reflects the expanding functionality of contemporary AI applications. Recent developments in generative AI have extended their usefulness beyond content generation to include automated documentation, scheduling, communication management and learner performance monitoring. Such developments have broadened the administrative value of AI within educational institutions, including Home Economics departments where effective coordination of practical activities remains essential. Li et al. (2025) observed that educational institutions are increasingly incorporating AI into administrative planning and governance in line with emerging international guidelines for responsible AI adoption. Findings reported by Daher (2025) indicate that educators' AI literacy contributes significantly to their willingness to employ these technologies in professional practice, while Capuno-Marsan and Marsan (2026) found that educators consistently prioritized AI tools that directly improved teaching and programme management over more general digital applications.

Respondents equally recognized the contribution of AI to educational planning, with a grand mean of 3.45 recorded in Table 3.4. Strong agreement was expressed on the role of AI in evidence-based planning, curriculum implementation, forecasting instructional resource requirements and allocating educational resources. Planning within Home Economics programmes requires continuous analysis of enrolment patterns, practical resource availability, equipment utilization and curriculum demand. AI systems provide opportunities to organize and analyze such information more efficiently, thereby supporting timely and informed planning decisions. This pattern corresponds with the observations of OECD (2021), which identified intelligent data systems as valuable tools for improving educational planning and governance. Li et al., (2025) also emphasized that AI has become increasingly important for strategic educational planning because of its capacity to process large volumes of institutional data, while Park et al., (2023) reported that educators considered AI valuable for improving instructional organization and programme implementation.

The positive assessment recorded in this study should not be interpreted as support for unrestricted dependence on AI in educational planning. Decisions relating to curriculum implementation, learner welfare and resource allocation continue to require professional judgement, institutional policies and ethical accountability. Respondents appeared to recognise this balance by viewing AI as a decision-support technology that complements rather than replaces human expertise. This position reflects the guidance provided by UNESCO (2023) on responsible AI adoption in education. Similar conclusions were reached by Ren and Wu (2025),

who observed that effective institutional use of AI depends on educators' ability to combine technological capability with sound pedagogical and administrative judgment. Evidence presented by Obunadike (2023) also suggests that the integration of emerging digital technologies into Home Economics should remain firmly aligned with the discipline's practical, learner-centred and sustainability-oriented philosophy.

Conclusion

This study examined the role of artificial intelligence (AI) applications in promoting efficient educational management and planning in Home Economics education. The findings demonstrate that AI has become an important support tool for improving instructional planning, strengthening educational management, and enhancing educational planning within Home Economics programmes. The study also established that AI applications contribute to more efficient educational management by supporting student record management, facilitating communication, monitoring academic progress, and automating routine administrative processes. These capabilities enable educators to allocate more time to teaching, learner support, and other professional responsibilities. Beyond classroom instruction, AI was perceived as a valuable resource for evidence-based educational planning through improved curriculum implementation, forecasting of instructional resource requirements, and informed decision-making.

Findings indicate that the effective integration of AI can enhance the quality of educational management and planning in Home Economics education. The benefits identified in this study are most likely to be realized when AI complements, rather than replaces, the professional knowledge, practical expertise, and pedagogical judgement of Home Economics educators.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Home Economics educators should integrate appropriate AI applications into instructional planning to improve lesson preparation, instructional material development, classroom assessment, curriculum implementation, and the organization of practical learning activities while maintaining professional oversight of all AI-generated outputs.
2. Tertiary institutions offering Home Economics programmes should encourage the adoption of AI-supported administrative systems to improve student record management, communication, monitoring of academic progress, and the efficient coordination of teaching and learning activities.
3. Educational policymakers, institutional administrators, and professional bodies should provide the digital infrastructure, professional development opportunities, and institutional guidelines required for the responsible integration of AI into Home Economics education, with particular attention to educational planning, resource allocation, ethical practice, and evidence-based decision-making.

References

- Bautista, A., Estrada, C., Jaravata, A. M., Mangaser, L. M., Narag, F., Soquila, R., & Asuncion, R. J. (2024). Preservice teachers' readiness towards integrating AI-based tools in education: A TPACK approach. *Educational Process: International Journal*, 13(3), 40–68.
- Camilleri, A. (2023). The role of the Home Economics practical component in teaching and Learning. *Master's thesis, University of Malta*.

- Capuno-Marsan, J. F., & Marsan, A. L. (2026). Integrating artificial intelligence in Home Economics technology education: Teacher strategies for digital innovation. *Journal of Educational Technology Innovation and Applications*, 2(1), 1–20.
- Carolus, A., Koch, M. J., Straka, S., Latoschik, M. E., & Wienrich, C. (2023). MAILS—Meta AI Literacy Scale: Development and testing of an AI literacy questionnaire based on well-founded competency models and psychological change and meta-competencies. *Computers in Human Behaviour: Artificial Humans*, 1(2), Article 100014.
- Chen, X., Cheng, G., Zou, D., Zhong, B., & Xie, H. (2023). Artificial intelligence robots for precision education: A topic modeling-based bibliometric analysis. *Educational Technology and Society*, 26(1), 171–186.
- Daher, R. (2025). Integrating AI literacy into teacher education: A critical perspective. *Discover Artificial Intelligence*, 5(1), Article 217.
- Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeiffer, F., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274.
- Kuusisaari, H., Seitamaa-Hakkarainen, P., Autio, M., & Holta, H. (2021). The future of home economics teaching: Teachers' reflections on 21st century competencies. *International Journal of Home Economics*, 14(2), 51–68.
- Labyad, Z., El Ganich, S., and Qadech, H. (2024). Pedagogical innovation and artificial intelligence in the service of entrepreneurial education: A proposed theoretical anchor. In *2024 10th International Conference on Optimization and Applications (ICOA)*, 1–6. IEEE.
- Li, K. C., & Wong, B. T. M. (2023). Artificial intelligence in personalised learning: A bibliometric analysis. *Interactive Technology and Smart Education*, 20(3), 422–445.
- Li, Y., Tolosa, L., Rivas-Echeverria, F., & Marquez, R. (2025). Integrating AI in education: Navigating UNESCO global guidelines, emerging trends, and its intersection with sustainable development goals. *ChemRxiv*. Advance online publication.
- Ng, D. T. K., Leung, J. K. L., Su, J., Ng, R. C. W., & Chu, S. K. W. (2023). Teachers' AI digital competencies and twenty-first century skills in the post-pandemic world. *Educational Technology Research and Development*, 71, 137–161.
- Obunadike, J. (2023). Home Economics fostering digital resources for national development and sustainability. *Nigeria Journal of Home Economics*, 12(9), 8–18.
- Organization for Economic Co-operation and Development. (2021). *OECD digital education outlook 2021: Pushing the frontiers with artificial intelligence, blockchain and robots*. OECD Publishing. <https://doi.org/10.1787/589b283f-en>
- Oluwagbemileke, F. B. (2024). Narrative review of information and communication technology (ICT) integration in Nigerian secondary schools' home economics instruction. *Nigeria Journal of Home Economics*, 12(10), 144–151.
- Park, J., Teo, T. W., Teo, A., Chang, J., Huang, J. S., & Koo, S. (2023). Integrating artificial intelligence into science lessons: Teachers' experiences and views. *International Journal of STEM Education*, 10(1), Article 61. <https://doi.org/10.1186/s40594-023-00437-9>.
- Ren, X., & Wu, M. L. (2025). Examining teaching competencies and challenges while integrating artificial intelligence in higher education. *TechTrends*, 69, 519–538.
- Suparyati, A., Widiastuti, I., Saputro, I. N., & Pambudi, N. A. (2023). The role of artificial intelligence in vocational education. *JIPTEK: Jurnal Ilmiah Pendidikan Teknik dan*

Kejuruan, 17, 1-4.

UNESCO. (2023). *Guidance for generative AI in education and research*. UNESCO.