

A SCOPING REVIEW OF THE SYNERGY BETWEEN HOME ECONOMICS AND EDUCATION

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Abstract

Home Economics (HE), increasingly conceptualized as Family and Consumer Sciences (FCS), has evolved from a domestically oriented discipline into a multidisciplinary field addressing contemporary societal challenges such as sustainability, health, and financial literacy. Despite its transformative potential, the integration of HE within mainstream educational curricula remains fragmented and under-theorized. This study employs a scoping review methodology guided by the PRISMA-ScR framework to systematically map the evidence on the pedagogical synergy between HE and formal education. A comprehensive search across Web of Science, Scopus, ERIC, and Google Scholar identified 65 records, of which 26 studies met the inclusion criteria. The review synthesizes theoretical foundations, integration models, outcomes, and barriers associated with HE–education synergy. Findings reveal that HE serves as a critical interdisciplinary platform, particularly within STEAM education grounded in constructivist, experiential, ecological, social cognitive, and systems thinking theories. Key outcomes include enhanced student engagement, improved literacy (food, financial, and health), and strengthened sustainability awareness. However, structural barriers such as gender stereotypes, resource constraints, and curriculum overcrowding persist. The findings position HE as a vital yet underutilized component of 21st-century education.

Keywords: *Home Economics, STEAM integration, Interdisciplinary Pedagogy, Synergy, Scoping Review*

Introduction

Home Economics (HE), historically rooted in domestic science, has undergone significant transformation over the past century. Originally conceptualized as a discipline focused on household management and domestic skills, HE has evolved into a complex interdisciplinary field encompassing nutrition, health education, financial literacy, sustainability, and technological competence (Pendergast, et al., 2022). This transformation reflects broader societal shifts, including globalization, technological advancement, and increasing awareness of environmental and public health challenges.

Despite its expanded scope and relevance, HE remains less recognised within many educational systems. It is often perceived as a peripheral or vocational subject rather than a core academic discipline. This perception has contributed to a fragmented understanding of its pedagogical value and its potential for integration with other subject areas such as science, mathematics, and social studies. Consequently, the synergy between HE and formal education remains underdeveloped and inconsistently implemented across contexts.

The need for interdisciplinary education has become increasingly urgent in the face of global challenges such as climate change, food insecurity, public health crises, and financial instability. These issues require individuals to possess not only theoretical knowledge but also practical skills and critical thinking abilities. HE uniquely positions itself at the intersection of theory and practice, offering experiential learning environments that enable students to apply academic concepts to real-world situations (Bailey, et al., 2019).

For instance, the integration of HE with science education allows students to explore biochemical processes through cooking activities, while its integration with mathematics facilitates the application of quantitative reasoning in budgeting and resource management. Similarly, HE contributes to sustainability education by promoting awareness of environmental impacts and responsible consumption practices.

However, the absence of a unified conceptual framework for HE integration has led to inconsistent pedagogical practices. Teachers often develop interdisciplinary approaches independently, resulting in variability in quality and effectiveness. Moreover, systemic barriers such as gender stereotypes and resource limitations further hinder the full realization of HE's potential. This study addresses these gaps by conducting a scoping review to map the existing literature on HE–education synergy. By synthesizing theoretical frameworks, integration models, outcomes, and barriers, the study aims to provide a comprehensive understanding of the field and propose a structured approach to integration.

Research Objectives

The objectives of this scoping review are:

1. Identify the theoretical foundations underpinning HE–education synergy.
2. Map the various models of integration across disciplines.
3. Examine the outcomes associated with HE integration.
4. Identify barriers militating against implementation of HE-education integration?

Methods

Study design

This study adopts a scoping review methodology guided by the PRISMA Extension for Scoping Reviews (PRISMA-ScR) (Tricco, et al., 2018). Scoping reviews are suited for mapping broad and heterogeneous bodies of literature, identifying key concepts, and highlighting research gaps.

Search Strategy

A detailed search was conducted across several academic databases to ensure broad coverage of the literature. The selected databases included: (i) Web of Science (WoS);

(ii) Scopus; (iii) ERIC (Education Resources Information Centre); and (iv) Google Scholar.

The WoS and Scopus databases were included to get high-impact peer-reviewed research. The inclusion of ERIC helped in accessing education-specific literature while the Google Scholar's inclusion helped in capturing grey literature and additional studies that might be relevant to the study. The search strategy involved the use of the following keywords and Boolean operators' combinations:

("home economics" OR "family and consumer science*" OR "domestic science*" OR "home science*") AND ("pedagogy" OR "curricul*" OR "education" OR "teaching" OR "instructional design") AND ("synergy" OR "integration" OR "interdisciplinary" OR "STEAM" OR "STEM" OR "cross-curricular") AND ("outcomes" OR "impact" OR "literacy" OR "engagement" OR "skills")

The search was limited to English-language publications from the last ten years (2015–2025) to capture the most recent developments in the field.

Eligibility Criteria

Inclusion Criteria: (i) Studies focusing on HE integration within educational contexts;

(ii) Empirical or conceptual research; and (iii) Peer-reviewed articles and credible reports

Exclusion Criteria: (i) Studies lacking pedagogical focus; (ii) Non-English publications; and (iii) Inaccessible full texts

Selection Process

The selection process followed a four-stage PRISMA flow described below:

1. *Identification:* Keyword search helps in identifying relevant studies that include the keywords.

2. *Screening*: Titles and abstracts of the identified studies were screened against the eligibility criteria by two independent reviewers to
3. *Eligibility*: Full-text articles were assessed for their relevance to the research questions.
4. *Inclusion*: The final set of studies was selected for data extraction and synthesis.

The study selection processes are captured in Figure 1. As shown in the figure, the initial search across academic databases (Web of Science, Scopus, ERIC, and Google Scholar) yielded a total of 65 records. After removing 19 duplicates and inaccessible records, 46 studies were screened based on their titles and abstracts. Of these 46 studies, 13 were excluded for lack of relevance to the synergy between HE and education. The remaining 33 full-text articles were assessed for eligibility, and seven were excluded for not meeting the publication period, specific educational focus and/or including pedagogical discussion. 26 studies met the inclusion criteria and were included in the scoping review for analysis and synthesis.

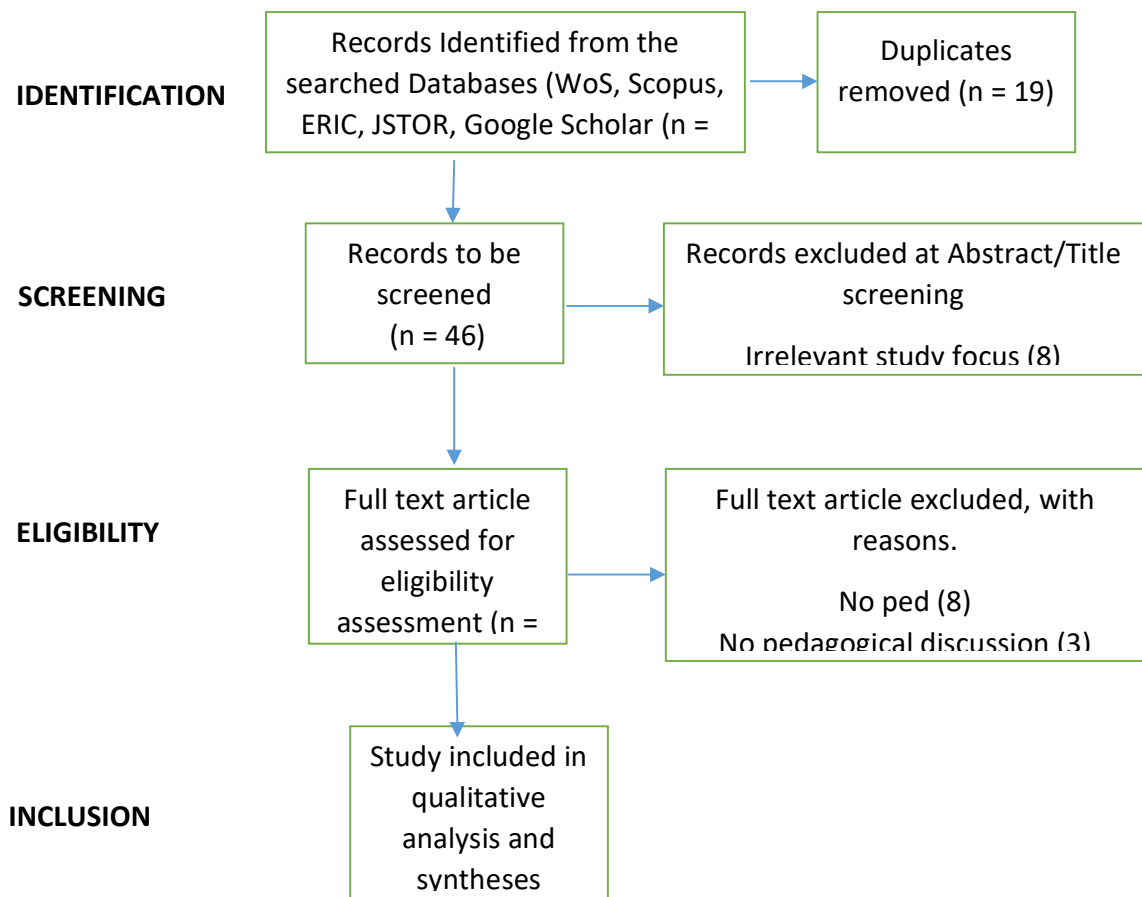


Figure 1: PRISMA flow diagram

Data Extraction and Synthesis

The study used standardized data extraction form (data matrix) to record key information from each of the included studies. The form has the following key variables: (i) Author(s) and year of publication; (ii) Geographical location and educational context; (iii) Research design and methodology; (iv) Theoretical framework; (v) Synergy themes; (vi) Key findings and outcomes; and (vii) Barriers and challenges identified. The synthesis followed a thematic approach, grouping findings into categories such as theoretical foundations, integration models, and reported impacts.

Quality Appraisal

A descriptive quality appraisal assessed: (i) Clarity of research objectives; (ii) Methodological rigor; and (iii) Transparency of findings.

Results

The study results captured in the emerging themes from the analysis are presented subsequently. The section captures study selection processes and presentation of PRISMA flow diagrams to capture the processes leading up to the 26 papers eventually analysed and outcome at each stage of the processes. Thereafter, the geographical characteristics of the included studies were discussed and the thematic analysis of the papers were discussed in line with each of the research questions. The discussion of the study results within relevant literature follows.

Characteristics of Included Studies

Geographical spread of the Studies: The included studies (2015–2025) cut across many regions of the world. This implies that discussion on synergy between HE and education is not limited to a geographical location. Research was identified from Europe (Estonia, Ireland, Slovenia, Finland, Latvia, Norway, Sweden, and Northern Ireland), Africa (Nigeria, Egypt, Ghana) Asia (Thailand, Malaysia, Philippines), North America (USA, Canada), and Oceania (Australia). Four (4) of the studies had global or multi-regional focus. Most studies were conducted in Europe (11), indicating strong research activity in that region.

Table 1

Distribution of Studies by Geographical Location

Geographical Region	Frequency Count	Countries of Focus
Europe	11	Estonia, Latvia, Finland, Norway, Sweden, Slovenia, Northern Ireland
Africa	5	Nigeria, Egypt, Ghana
Global / multi-regional	4	Reviews and surveys covering the US, Canada, Europe, Africa, Latin America, and Asia
Asia	3	Thailand, Malaysia, Philippines

North America	2	Canada, United States
Oceania	1	Australia
Total	26	

Bibliometric Analysis of the Studies: The figure below shows publication trends on the HE-education integration over time. As evident in the figure, there is an increasing research interest in the subject matter. The research interests peaked between 2021–2022, followed by a slight decline.

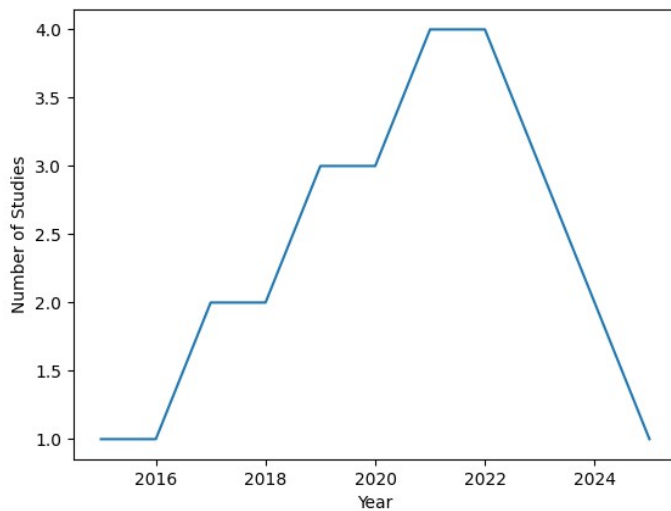


Figure 2: Publication trend in HE-Education synergy (2015-2025)

Research Question 1: What theoretical frameworks underpin the synergy between HE and education?

The review identified several key learning theories that provide the theoretical bridge between HE and education. The theories include constructivism, social cognitive theory, human ecology theory, systems thinking, and experiential learning theory. “Constructivism was the most frequently cited theory, emphasizing active, hands-on learning environments (Do, et al., 2023; Hokkanen & Kosonen, 2013) emphasized that HE provides an ideal environment for constructivist learning. In constructivist learning, students build knowledge through hands-on experiential activities. In constructivism context, learning is a social process where knowledge is experience-based and constructed by the learners themselves.

The second theory bridging HE with education is the social cognitive theory. Social cognitive theory is often used to explain how students develop self-efficacy and interest in integrated subjects. In this context, the synergy between HE and science is often framed through the lens of observational learning and the development of practical skills (McGregor, 2019).

The third theory used in bridging HE and education is the human ecology theory rooted in the foundational work of Ellen Richards. The theory views the home and family as an ecosystem interacting with the broader environment, used as a framework for integrating sustainability and environmental science into HE.

A close theory to human ecology theory is system thinking theory. System thinking, in the HE context, emphasizes interrelationship of resource flow (water, energy, food) within a household and community (Colucci-Gray, et al., 2019). Another theory that is often used in bridging HE and education is the experiential learning theory. The theory emphasizes the importance of the "learning by doing" cycle which characterises HE.

Table 2
Summary of Theoretical Foundations (RQ1)

Theory	Key Concept	Application in HE Synergy	Sources
Constructivism	Knowledge construction through experience	Hands-on laboratory activities (cooking, textiles) as a basis for scientific inquiry.	Do, et al., 2023; Hokkanen & Kosonen, 2013
Social Cognitive Theory	Self-efficacy and observational learning	Modeling practical life skills to enhance student confidence and interest in STEM.	McGregor, 2019
Human Ecology	Interaction between humans and environment	Framework for sustainability education and responsible resource management.	Pendergast, 2021
Systems Thinking	Interconnectedness of complex systems	Understanding food systems, energy flows, and household resource optimization.	Colucci-Gray et al., 2019
Experiential Learning	Learning by doing (Kolb's cycle)	Iterative process of practical application, reflection, and conceptualization.	Taar & Palojoki, 2022

Research Question 2: How is HE integrated into STEM/STEAM, health, and social sciences?

The synthesis of the included studies revealed three major integration pathways including: (i) STEAM Integration (ii) Experiential Learning and (iii) Life skills development.

The most significant synergy is found in the integration of HE with STEAM. In this context, HE helps in practical application of scientific and mathematical principles. In other words, HE provides real-world contexts for scientific and mathematical concepts (Heinmäe, et al., 2025; Belbase et al., 2021; Dislere et al., 2020; Saratapan et al., 2019; McGregor, 2019).

HE integration into experiential learning occurs in project-based approaches such as cooking laboratories enhance engagement. Project-based approaches encourage students to ask questions, investigate phenomena, and use evidence to draw conclusions scientifically (Pendergast, 2021; Colucci-Gray et al., 2019).

Research Question 3: What outcomes are associated with this integration?

The review led to the identification of a number of outcomes of HE integration into formal education. The outcomes, categorised into students' and teachers' outcomes, are enumerated in this subsection. The students' outcome includes (i) increased engagement; (ii) improved literacy; and (iii) enhanced problem-solving skills. The teachers' outcomes, on the other hand, include: (i) interdisciplinary competence; (ii) collaborative teaching practices; and (iii) pedagogical innovation (Heinmäe et al., 2025; Wong, 2023; Taar & Palojoiki, 2022; Pendergast, 2021; Bailey, et al., 2019; Field, 2016).

Research Question 4: What are the barriers militating against HE integration into education?

The barriers against HE integration into education include: (i) gender stereotypes; (ii) resource constraints; and (iii) curriculum overload (Field, 2016). While the gender stereotype limits participation, the resource constraints and curriculum overload result in weak infrastructure and reduced integration respectively.

Discussion

This review highlights Home Economics (HE) as a valuable yet underutilized interdisciplinary field within formal education. The findings show that HE integration is largely grounded in constructivist and experiential learning theories, which explains the positive outcomes observed. Because HE emphasizes "learning by doing," students engage more actively and are better able to connect theory to real-life contexts. This aligns with previous studies (Pendergast, et al., 2022; Bailey, et al., 2019) that link experiential learning to improved understanding and retention. The use of human ecology and systems thinking further explains HE's strong contribution to sustainability education.

The dominance of HE–STEAM integration reflects its practical relevance in applying scientific and mathematical concepts. Activities such as cooking and budgeting make abstract ideas tangible, which explains increased student engagement and comprehension. This finding is consistent with prior research on situated learning. However, the review reveals that integration remains fragmented, suggesting that, unlike in some earlier studies, implementation lacks structured frameworks and institutional support.

The reported outcomes—improved engagement, literacy (food, financial, health), and problem-solving skills—occur because HE learning is directly relevant to everyday life. These findings agree with earlier studies (Wong, 2023; Taar & Palojoiki, 2022) emphasizing HE's role in developing practical life competencies. Teacher-level outcomes, including interdisciplinary skills and collaboration, also reflect the integrative nature of HE.

Despite these benefits, persistent barriers explain its limited adoption. Gender stereotypes continue to marginalize HE, while resource constraints and curriculum overload restrict effective implementation. These challenges are widely supported in previous literature (Field, 2016) and indicate that structural issues, rather than pedagogical weaknesses, hinder integration.

Overall, the findings suggest that HE integration is effective due to its experiential, relevant, and interdisciplinary nature, consistent with existing research. However, its impact is constrained by systemic barriers and lack of standardization. The implication is a need for policy

recognition, structured integration frameworks, and targeted teacher training to fully realize HE's potential in modern education.

Conclusion

The review identified constructivism, social cognitive theory, human ecology, systems thinking, and experiential learning as the key theoretical foundations underpinning the synergy between Home Economics (HE) and education. HE is integrated across disciplines mainly through STEAM applications, experiential and project-based learning, and life skills development. HE-education integration enhances student engagement, improves food, financial, and health literacy, and strengthens problem-solving and sustainability awareness. Gender stereotypes, resource constraints, and curriculum overload hinder HE-education integration.

Recommendations

1. Governments and curriculum bodies should formally integrate HE into national STEM/STEAM frameworks to enhance its recognition and relevance.
2. Awareness campaigns and inclusive curriculum design should be implemented to reposition HE as a gender-neutral, academically rigorous discipline.
3. Schools should be supported with adequate infrastructure, including modern HE laboratories, teaching materials, and digital tools to enable effective practical learning.
4. Educational planners should adopt interdisciplinary curriculum models that embed HE within existing subjects to reduce curriculum overload.
5. Continuous professional development programs should be provided to equip teachers with interdisciplinary and project-based teaching skills.

Limitations of the study

This review is limited by its focus on English-language publications from the last ten years. There may be significant research in other languages or from earlier periods that was not captured. Additionally, the qualitative nature of analysis makes it difficult to generalize the findings across all educational contexts. Besides, the review focuses on formal education potentially overlooking the synergy in informal or community-based learning environments. This limits the generalisability of this study findings.

Directions for Future Research

Future research should focus on longitudinal studies to assess the long-term impact of integrated HE education on student life skills and career choices. There is also a need for more quantitative research to measure the effectiveness of specific integration models (e.g., the STEAM Kitchen) on student achievement in core subjects. Research should also explore the synergy between HE and education in diverse cultural and socio-economic contexts to identify the most effective strategies for different populations. Finally, the role of digital technology and AI in enhancing HE synergy is an area that warrants further investigation.

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