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INTERNATIONAL JOURNAL OF EDUCATION AND SOCIAL SCIENCES

RESEARCH ARTICLE

TEACHERS' PRACTICAL SKILLS AND PEDAGOGICAL LIMITATIONS IN HYBRID HOME ECONOMICS INSTRUCTION: TOWARD AN ACTION PLAN

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Article History
Received: September 30, 2026
Revised: October 17, 2026
Published: October 30, 2026

ABSTRACT

This study was conducted to assess the practical skills and pedagogical limitations present in hybrid Home Economics instruction at General Mariano Alvarez Technical High School during the academic year 2024-2025. Employing a quantitative descriptive research design, the study comprised 303 students and 55 Home Economics teachers, selected through a combination of total enumeration and random sampling techniques. Data analysis utilized frequency distribution, weighted mean, standard deviation, Mann-Whitney u test, Kruskal-Wallis test, and Spearman rho. Findings revealed that most teachers were aged 25–30 years, female, possessed a college degree, had five or fewer years of teaching experience, and had attended between one and three relevant trainings. The majority of student respondents were 15–16 years old and predominantly female. Teachers demonstrated strengths in remote sequential instruction, the use of open educational resources, the design of engaging hybrid assignments, and the implementation of formative assessments. However, they faced limitations such as unreliable internet connectivity, lack of technical support, difficulties in integrating multimedia, maintaining discipline, and providing effective feedback, although they reported sufficient time for instruction, steady engagement, and smooth performance assessments. Statistically significant differences emerged in practical skills such as hands-on task performance, resource accessibility and usage, student engagement, and

feedback and skill assessment based on the profiles of both teachers and students. Similarly, significant differences in pedagogical limitations, including technological constraints, instructional delivery, classroom management, and assessment difficulties, were observed according to teacher and student profiles. A significant association was identified between practical skills and pedagogical limitations. The findings underscored the need to provide targeted solutions addressing both the strengths and challenges identified in hybrid Home Economics instruction.

Keywords: *assessment, challenges, hybrid learning, Home Economics, practical skills*

INTRODUCTION

The shift to hybrid learning environments has significantly impacted the teaching of Home Economics, a subject that traditionally relies on hands-on, practical instruction. Teachers now face the dual challenge of delivering effective instruction both in-person and online, which demands a blend of practical skills and pedagogical adaptability. This study investigates the extent to which teachers possess the necessary practical competencies and identifies the pedagogical limitations they encounter in the hybrid Home Economics classroom. By exploring these areas, the research aims to inform targeted professional development and instructional design strategies that support effective hybrid teaching.

Further, the transition has presented distinct issues for Home Economics teachers, whose disciplines depend significantly on experiential learning. Teachers have encountered difficulties in transitioning practical topics, including cooking, sewing, and budgeting, to digital platforms, frequently without enough training or resources. A thorough review identified a continual divergence between curriculum objectives and classroom practices, highlighting obsolete content and insufficient incorporation of digital and entrepreneurial skills (Smith and Johnson, 2025). Also, research indicates that student engagement and skill transfer at home are affected by elements like as motivation and attitude, which educators must now address in both physical and virtual environments (David et al., 2025).

The adoption of flexible pedagogical approaches has been an observable means to press on for the administration. One among the significant approaches applied is the implementation of varied modalities of instructional delivery such as Distance Learning, Blended or Hybrid Learning, Home Schooling, Modular Distance Learning, TV-Radio Based Instruction, and Online Distance Learning. These modalities and strategies were devised as part of the Basic Education - Learning Continuity Plan in congruence with the mandate of education in the time of COVID-19 (DepEd Education Management Information System, 2022).

In 2022, the top 3 learning delivery modalities preferred by parents and learners are modular distance learning (print), online distance learning (online), and blended learning (hybrid). Printed modular learning modality is mostly preferred for its practicality by 71% of the learning population. In this approach, learners who may have no gadgets or internet access can still comply with the school requirements. Online distance learning is preferred by 8% of Filipino students. It happens when the teacher facilitates discussion using various technologies accessed through the internet while they are geographically remote from each other. Hybrid modality, meanwhile, is the second most preferred by 15% of the learners. It is a combination of face-to-face classes with any or a mix of online distance learning, modular distance learning, and TV/Radio-based instruction (Department of Education [DepEd], 2022).

It is important to note that these modalities are not common to the Philippine basic education system. Distance education in the country was first utilized in 1995 by the University of the Philippines as it opened its Open University. The modality aimed to provide a more accessible higher education to Filipinos nationwide. Since then, it has been a leader in open learning and distance education. Offering a variety of courses, the University of the Philippines likewise assisted the Commission on Higher Education and the Technical Education and Skills Development Authority in their open and distance learning programs, as decreed by Republic Act 10650. Alongside the implementation comes the development of a wide range of educational technologies. The modality enabled the University of the Philippines to establish educational ties to Filipinos in more than 70 countries around the world.

Notwithstanding the endeavors to improve hybrid instruction, issues continue to arise as

the program's deployment advances. Escobar (2023) notes that many Home Economics teachers have substantial challenges in adapting to hybrid instruction, particularly in technical-vocational strands that heavily rely on experiential learning. The lack of formal training in digital pedagogy has left instructors insufficiently prepared to deliver practical courses successfully using online platforms. These limitations are exacerbated by unequal access to technology, including reliable internet and devices, especially among underprivileged communities. Without adequate instructional materials, educators struggle to maintain student engagement and promote skill development in hybrid settings. As a result, disparities in educational attainment persist across areas, highlighting the urgent need for targeted professional development and infrastructural support.

Technical and Vocational Education has been a key driver for sustainable development, most significantly to countries where skills development is highly needed to support economic growth (Okoye & Arimonu, 2016, cited in Kilag et al., 2023). This is the main reason why the government has focused on upgrading the quality of Technical and Vocational Education and widened its accessibility for the benefit of Filipino learners, which consequently led to significant reforms after the global pandemic (Naelgas & Malonisio, 2022).

For a province like Cavite, nestling industrial zones that are owned and accredited by the Philippine Economic Zone Authority, technically skilled graduates are in demand (Erispe, 2025). To address this growing need, three large public technical-vocational high schools in Cavite were considered as the main producers of competent graduates, namely: Amaya School of Home Industries, Tanza National Trade School, and General Mariano Alvarez Technical High School.

In September 2019, General Mariano Alvarez Technical High School (GMATHS) raised its educational standards after being the first International Standardization Organization-accredited technical vocational school in the Philippines. Established to provide vocational training and skills to the highly dense municipality in the first district of Cavite, it is known to be the largest Technical Vocational School in Cavite, with an average enrollment of approximately 10,000 students over the last three years. This clearly explains the pivotal role the school plays in shaping the future industrial workforce of the province.

As much as GMATHS seeks to reach heights in its delivery of quality technical vocational education, the growing number of its students remains a daunting challenge that leads to consecutive risks. As of today, the institution has opted to facilitate learning using the hybrid or blended learning modality, even for Technical and Vocational Education classes, to accommodate more than 10,000 students in junior high school.

Among the various specializations that the school offers, Home Economics is a crucial area of focus since it has an enrollment of 4,056 students from grades 7-10. For the area of Home Economics, the school offers specializations such as Garments Technology, Cosmetology, and Food Technology facilitated by 55 teachers. In compliance with the 1:40 standard classroom-student ratio, hybrid learning, even for practical subjects like the above-mentioned, has been implemented since the pandemic. This remains a test of how effectively quality Technical and Vocational Education has been delivered to meet the increasing complexity of educational needs.

Despite the worldwide transition to hybrid learning, there is a paucity of research examining how Home Economics teachers modify practical, hands-on training for digital platforms, particularly within technical-vocational settings. Current research frequently emphasizes generic digital pedagogy or fundamental academic disciplines, neglecting the issues encountered by Home Economics teachers in hybrid settings. There is a deficiency of localized data regarding teacher abilities, resource accessibility, and instructional design methodologies pertinent to hybrid Home Economics instruction.

Home Economics is vital for equipping students with practical life skills, encompassing culinary arts, financial management, and household administration. In hybrid situations, imparting these competencies is difficult without adequate educator training, digital resources, and pedagogical development. Alleviating these constraints is essential for attaining equitable and effective educational results. This study aims to identify the specific challenges and skill gaps faced by educators to inform legislation, curriculum development, and teacher training programs for hybrid delivery.

The study seeks to assess the competence of Home Economics teachers in hybrid

education, emphasizing their capacity to include digital resources, oversee virtual classes, and adeptly modify practical topics such as cooking, sewing, and budgeting for online platforms. It aims to uncover the pedagogical constraints and instructional obstacles that emerge during this transition, encompassing concerns relating to student involvement, assessment precision, and instructional design. This research will provide insights into the necessary evolution of teaching strategies by analyzing both skills and barriers in hybrid learning. These findings will guide future training programs and support initiatives, ultimately improving the quality and equality of Home Economics education in blended settings.

The rapid shift to hybrid learning environments has exposed significant gaps in teachers' ability to effectively deliver hands-on Home Economics instruction across both in-person and virtual platforms. Addressing these gaps is essential to ensuring that students continue to develop critical practical skills, even in blended learning contexts. This study aims to identify specific skill deficiencies and pedagogical limitations among teachers, thereby informing the development of a targeted action plan to enhance instructional effectiveness in hybrid Home Economics settings. It also assesses Home Economics teachers' preparedness for hybrid instruction by examining their digital competencies, pedagogical approaches, and access to resources. Its objective is to discern strengths and deficiencies to inform targeted responses. Based on the findings, it will provide policy recommendations including training mandates, infrastructure investment, and curriculum revisions to establish a more responsive and equitable hybrid education system.

Theoretical Framework

This study is anchored in theories that ground the factors affecting the Hybrid approach to instructional delivery since its implementation. This study hinges on Experiential Learning Theory (David Kolb, 1984), the Technological Pedagogical Content Knowledge Framework (Mishra & Koehler, 2006), Complex Adaptive Blended Learning System (Wang et al., 2015), and the Constructive Alignment Theory (Biggs, 1996).

Experiential Learning Theory, formulated by David Kolb, asserts that learning is a cyclical process comprising four stages: concrete experience, reflective observation, abstract

conceptualization, and active exploration. It underscores experiential learning, reflection, and adaptability, rendering it particularly pertinent for disciplines such as Home Economics that depend on practical skill acquisition.

In hybrid Home Economics education, Experiential Learning Theory facilitates the incorporation of practical tasks into digital formats while preserving experiential richness. This study employs Experiential Learning Theory to assess the methods by which educators promote active learning in virtual environments, including video demonstrations, home-based projects, and reflective exercises. It also evaluates whether hybrid instruction facilitates students' participation in significant, skill-oriented activities despite the physical distance from conventional classrooms.

The Technological Pedagogical Content Knowledge Framework, or TPACK paradigm, delineates the convergence of three fundamental knowledge domains, technology, pedagogy, and content, that teachers must amalgamate to provide effective instruction in digital contexts. It highlights the dynamic interaction between these areas, acknowledging that teaching with technology necessitates not only technical proficiency but also pedagogical understanding and subject expertise.

Technological Pedagogical Content Knowledge Framework evaluates how Home Economics teachers integrate subject knowledge with digital resources and pedagogical approaches in hybrid environments. It assists in pinpointing deficiencies in technical proficiency, pedagogical adjustment, and content dissemination, thereby informing the creation of professional development and curriculum reformation. Technological Pedagogical Content Knowledge Framework facilitates the assessment of teachers' effectiveness in utilizing platforms, applications, and multimedia to engage students in experiential learning remotely.

Experiential Learning Theory informs the research on maintaining the practical and reflective essence of Home Economics, especially in hybrid settings. The Technological Pedagogical Content Knowledge Framework guarantees the successful integration of technology tools with educational tactics and topic understanding. Collectively, they establish a thorough basis for formulating study objectives, choosing suitable methodologies, and examining how educators

manage the intricacies of hybrid education.

Complex Adaptive Blended Learning is a learning framework featuring six (6) main elements: learners, teachers, content, technology, learner support, and the institution that act together in relationship with each other. The flow of learning is greatly affected by the constant interactions of several elements such as the learner, the teacher, the technology, the content, the learning support, and the institution.

Learners are central in the framework, with their adaptation to blended learning environments being critical for determining the effectiveness of support and training. Teachers, also adapting to this unfamiliar setting, must employ facilitative strategies that cater to the diverse needs of 21st-century learners. The content comprising subject matter and instructional materials is shaped by factors like available online resources, technology, and the level of learner support, and evolves through interaction with both learners and teachers. Technology plays a pivotal role by enabling extended human capabilities and requiring new approaches to managing content and instruction. Learner support is essential, providing both academic guidance such as time management, collaboration, and technical assistance to help students effectively use digital tools. Finally, the institution underpins the entire system by supplying technological infrastructure and support staff, which are vital to the success of blended learning.

The Constructive Alignment Theory stemmed out from the theory of constructivism that focuses on the learner's actions defining what is learned, rather than the teachers' input and activities. The constructive element pertains to the role of the learners to construct an understanding for themselves. Biggs (2003) argues that knowledge is not something transmitted by the teacher but something that learners need to create for themselves, and that teaching is a tool for learning.

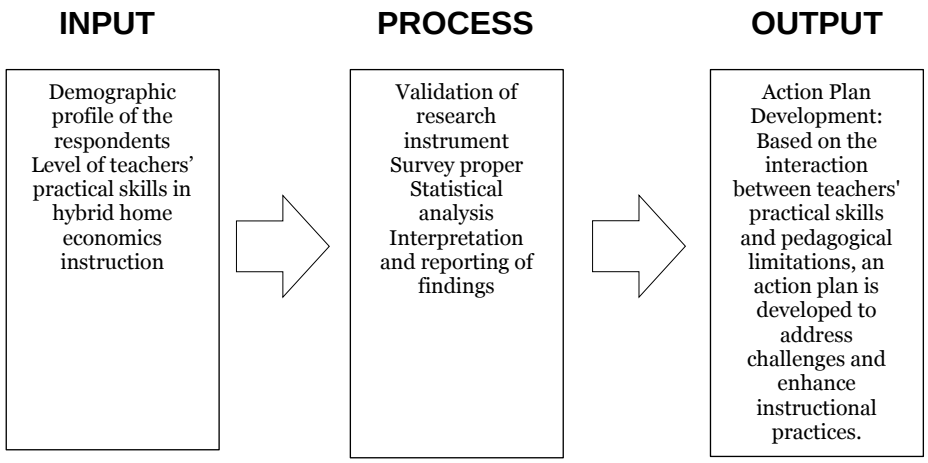
Conceptual Framework

For the study Teachers' Practical Skills and Pedagogical Limitations in Hybrid Home Economics Instruction: Toward an Action Plan, an appropriate visual representation of the conceptual framework could be a flowchart or diagram that outlines the key variables and their

relationships. This would visually represent how the practical skills of teachers and the pedagogical limitations influence the effectiveness of hybrid home economics instruction, and how these factors contribute to developing an action plan. To identify the central ideas and constructs investigated in this study, the conceptual framework below has been designed. Here is how the conceptual framework could be structured:

Figure 1

The Framework for the Development of an Action Plan for Hybrid Modality in HE Classes



The conceptual framework illustrates the systematic progression of the study toward enhancing hybrid Home Economics instruction. It is composed of three interconnected phases that collectively guide the research process and the development of an action plan.

The first phase, Teacher and Student Profiles, establishes the foundation of the study by gathering demographic and contextual data such as age, teaching experience, geographic location, and access to digital tools. These variables provide insight into the diverse backgrounds that influence instructional capacity and learning engagement in hybrid settings.

The second phase, Data Collection and Analysis, involves the validation and administration of the survey instrument to ensure reliability and alignment with the study's objectives. Data gathered from teachers and students are analyzed to identify patterns, challenges, and correlations related to practical skills and pedagogical limitations. This phase transforms raw data into evidence-based

insights that inform targeted interventions.

The final phase, Action Plan Development, translates the findings into strategic solutions aimed at improving hybrid instruction. This includes designing professional development programs to strengthen digital competencies, integrating experiential learning into hybrid curricula, and recommending equitable resource allocation and policy support.

Together, these phases form a coherent structure that links background profiling, empirical analysis, and actionable outcomes, culminating in a proposed framework for enhancing hybrid Home Economics instruction.

Scope and Delimitation of the Study

This study aimed to develop an action plan to enhance the implementation of the Hybrid Modality in the teaching of Home Economics at General Mariano Alvarez Technical High School. The focus was on identifying and analyzing the perceptions of 55 Home Economics teachers regarding the status of hybrid classes implemented across grades 7 to 10 for the academic year 2024-2025. The study specifically assessed the achievement of learning objectives within the Home Economics programs, including Garments Technology, Food Technology, and Cosmetology, under the hybrid learning setup. The research evaluated the effectiveness of the hybrid modality in terms of learners' participation, teachers' pedagogical approaches, learning support systems, and the learning outcomes achieved by students.

The scope of the study was limited to the Home Economics teachers and students at General Mariano Alvarez Technical High School, focusing on grades 7 through 10 during the academic year 2024-2025. The study employed a quantitative descriptive research design. The data were gathered using purposefully designed questionnaires, with a focus on specific aspects of hybrid teaching, including student engagement, instructional methods, and learning outcomes. The results were used to propose an action plan aimed at improving hybrid instruction in the school's Home Economics department.

However, the study had certain delimitations. It was limited to the 55 Home Economics

teachers at General Mariano Alvarez Technical High School, thus excluding other schools or educational institutions. The study did not address external factors affecting hybrid learning, such as students' home environments, technological access outside of school, or parental involvement. It also excluded other vocational courses outside of the Home Economics specializations, such as Garments Technology, Food Technology, and Cosmetology. While the study provided insights into the perceptions of teachers within this specific context, the findings might not be directly applicable to other schools or districts with different infrastructure, resources, or student demographics. Additionally, the study focused only on the identified aspects of hybrid modality such as participation, pedagogy, support, and outcomes, leaving out other potential influencing factors such as school leadership or administrative support.

Significance of the Study

The findings of this study shall potentially impact the following stakeholders:

Teachers. This research will attempt to identify the limitations of the hybrid setup in the perception of the teacher. Thus, the conclusions and recommendations to be proposed may be a valid reference for pedagogical considerations.

Students. The findings of the study and the action plan to be proposed will primarily benefit the learners, being the focus of the teaching-learning process. Generalizations to be made may promote programs that could enhance their learning experience in the hybrid setup.

School Administrators. The study will provide an overview of the teachers' perception in the implementation of Hybrid classes, therefore providing an objective basis of assessment for school administrators' relevant intervention. The action plan to be proposed can be considered in the formulation of an enhanced technical plan.

Future Researchers. The outcomes of the study may bridge the gaps between the development of hybrid modality in the teaching of technical vocational skills.

Definition of Terms

To facilitate comprehension, the following significant terms have been operationally defined:

Assessment Difficulties. Challenges faced by teachers in evaluating students' practical skills and learning outcomes in a hybrid setup, including limitations in observing performance and providing accurate feedback.

Classroom Management in Hybrid Setups. The ability of teachers to maintain discipline, structure, and engagement in both physical and virtual learning environments simultaneously.

Competency-based education. Competency-based education in Technical and Vocational Education and Training focuses on the development and demonstration of practical skills and knowledge more than theories and principles in a classroom setting.

Feedback and Skill Assessment. The process by which teachers provide constructive input and evaluate students' mastery of practical tasks, adapted for hybrid instruction formats.

Hands-on Task Performance. The capacity of teachers to facilitate and guide students in executing practical Home Economics activities (cooking, sewing) within hybrid learning environments.

Home Economics. This is a key component of Technology and Livelihood Education offered in GMATHS. It focuses on practical skills and knowledge related to managing household resources, preparing food, and understanding consumer behavior. It covers three specializations, namely: Garments Technology, Food Technology, and Cosmetology.

Instructional Delivery Challenges. Difficulties encountered in presenting lessons effectively in hybrid formats, including adapting content, pacing, and maintaining clarity across digital platforms.

Learners' Participation. This is the cognitive, behavioral, or emotional engagement of learners in the learning process, which includes discussion, dialogue, and collaboration that leads to a desirable learning outcome.

Learning support. This refers to the support that teachers, peers, and school administration can provide in a specific learning environment. It covers the resources, tools, and materials designed to assist students in skill acquisition. It also includes remediation and intervention to prevent barriers to understanding and further promote engagement.

Learning outcomes. This refers to the expected competencies, skills, and understanding that a learner should possess at the end of a school year.

Limitations. This refers to observable barriers that affect the teaching-learning process in a hybrid setup.

Modular Distance Learning. It features individualized instruction that allows learners to use self-learning modules in print or digital format.

Online Distance Learning. This is a modality where learners actively participate through technological tools accessed on the internet while they are geographically remote from each other during instruction.

Pedagogical Limitations. Constraints in teaching strategies, curriculum design, and instructional methods that hinder effective hybrid Home Economics instruction.

Perception. This refers to the observations gathered through the respondents' relevant experiences teaching in a hybrid learning setup

Practical Skills. The applied competencies of teachers in delivering hands-on Home Economics content through both face-to-face and online modalities.

Resource Accessibility and Usage. The extent to which teachers can obtain and utilize instructional materials, tools, and technologies necessary for hybrid Home Economics instruction.

Student Engagement in Practical Activities. The level of student participation, motivation, and interaction during hands-on tasks conducted in hybrid learning settings.

Technical Vocational Education. This is the type of education that equips learners through

practical training and hands-on experience in specific trades, occupations, and industries, preparing students for a related career.

Technological Constraints. Limitations related to internet connectivity, device availability, software proficiency, and digital infrastructure that affect hybrid instruction.

Technological Pedagogical Content Knowledge. A framework describing the integration of technology, pedagogy, and content knowledge required for effective teaching in digital and hybrid contexts.

LITERATURE REVIEW

Practical skills in hybrid home economics instruction

Practical skills in hybrid home economics instruction are essential for effectively integrating hands-on learning with digital and online components in vocational education. These skills involve a combination of traditional teaching methods and modern technological tools to deliver practical content such as cooking, sewing, and other home economics disciplines in a hybrid learning environment. As hybrid instruction continues to grow, understanding how teachers develop and apply practical skills in this blended setting is crucial to ensuring the success of home economics programs in meeting educational objectives.

Skills in hybrid learning instruction denote the competencies educators must acquire to proficiently educate in a blended context. These encompass digital literacy, instructional design, classroom management across modalities, and the capacity to offer experiential learning remotely. In Home Economics, teachers must innovatively convert practical work into virtual experiences while preserving student engagement and educational results. Mastery of these skills allows teachers to provide significant, interactive courses that connect physical and digital learning environments.

Talosig and Guillena (2023) examine the creation of design-based Science, Technology,

Engineering, and Mathematics learning guides specifically designed for remote Home Economics education. The authors underscore the need of merging experiential learning with digital platforms to sustain student engagement and skill development. The guides facilitate the replication of hands-on experiences in virtual environments by integrating STEM principles with practical tasks. Furthermore, the research underscores how organized digital resources can assist educators in conveying intricate subjects such as cooking and sewing remotely. It also emphasizes the necessity for educational innovation to transform traditional Home Economics into hybrid formats. Thus, the study offers a framework for curriculum developers aiming to enhance vocational education.

Similarly, Nabual et al. (2021) examine the determinants influencing the performance of Home Economics students during the COVID-19 pandemic. It delineates critical issues such restricted access to resources, insufficient instructor oversight, and diminished motivation in remote learning contexts. The study indicates that students faced difficulties in completing practical activities due to inadequate instruction and resources. It also highlights differences in digital access among learners, which resulted in inconsistent learning outcomes. The results emphasize the significance of educator assistance and resource accessibility in hybrid teaching. This paper offers significant insights for educators and policymakers seeking to enhance equality and efficacy in vocational education.

Building on this, David et al. (2025) investigated the impact of learning engagement elements on the application of Home Economics skills in domestic settings. The research indicates that student motivation, attitude, and home environment substantially influence the efficacy of hybrid instruction. Teachers who encourage active engagement and deliver constructive feedback achieve superior results in skill retention and application. The research underscores the significance of familial support in enhancing learning beyond the classroom. These findings indicate that hybrid pedagogy should be comprehensive, taking into account both instructional design and socio-emotional elements. The study enhances the existing literature on learner-centered methodologies in vocational education.

Meanwhile, Kilag et al. (2023) examine the significance of technical vocational education in attaining sustainable development in the Philippines. It underscores the necessity for educators

to possess both practical and digital skills to address changing industrial requirements. The authors contend that hybrid training can mitigate disparities in access and skill acquisition, particularly in rural and underprivileged regions. The report calls for curricular improvements that incorporate sustainability, technology, and experiential learning. It additionally advocates for investment in educator training and infrastructure to facilitate blended learning environments. This research corresponds with international initiatives to upgrade vocational education for inclusive growth.

Lastly, Owolabi et al. (2021) examine optimal strategies for executing home-based laboratory activities across several STEM disciplines, encompassing biology and engineering. Notwithstanding initial constraints, these distant arrangements facilitated enhancements in student motivation, critical thinking, and metacognition, as demonstrated by outcomes from the Motivated Strategies for Learning Questionnaire (MLSQ). The results indicate that with careful design, virtual and home-based laboratories can facilitate significant learning and skill enhancement in STEM fields. This underscores the capability of hybrid models to

Skills on Resource Accessibility and Usage

Skills on resource accessibility and usage are crucial for teachers in hybrid home economics instruction, as they enable effective integration of both physical and digital learning tools. Teachers need to be adept at accessing various resources, such as instructional materials, online platforms, and digital tools, to enhance their teaching and support student learning in a hybrid setting. Understanding how to utilize these resources efficiently, despite potential limitations, is key to overcoming pedagogical challenges and ensuring the success of hybrid home economics programs.

Empimo (2025) examines the methods by which Home Economics educators utilize technology to improve instructional efficacy in hybrid learning settings. It emphasizes the use of digital tools in simulating practical activities and sustaining student involvement. Educators indicated enhanced confidence and flexibility when provided with suitable technology tools. The report underscores the necessity for continuous professional development to align with advancing digital requirements. It emphasizes technology's function in closing instructional gaps and

enhancing Home Economics education.

Similarly, Ashong (2021) examined pedagogical changes from the viewpoints of Home Economics teacher educators in Ghanaian teacher education universities. The study offers a means to reconcile the disparity between theory and practice in Home Economics, highlighting that such research is comparatively rare in relation to Mathematics and the natural sciences. It analyzed creative methodologies utilized in Home Economics education, the mechanisms by which these strategies enhance learning, and the obstacles to innovation. The research indicated that instructors employ a variety of tactics to enhance course engagement. Furthermore, the incorporation of modern pedagogical technology was determined to improve concept acquisition in Home Economics.

Simultaneously, Buenaventura (2021) assessed the extent of instructors' integration of technology in the instruction of Home Economics topics amid the COVID-19 pandemic. A validated questionnaire developed by Hosseini and Kamal (2012) was employed for this assessment. The data analysis indicated that teachers exhibited a significant degree of technological integration, reflecting their ability to enhance student engagement and learning results. This indicates that educators successfully adapted to the requirements of the new normal. Thus, the study confirms the essential function of technology in maintaining instructional quality amid disruptions.

In a pertinent study, Reblinca (2024) investigated the correlation between educators' proficiency and students' literacy in the digital context. Research indicated that Home Economics educators exhibited superior digital proficiency, especially in content creation and administration. They adeptly employed digital tools to develop, arrange, and disseminate instructional materials tailored for hybrid learning settings. This proficiency allowed them to sustain lesson quality and continuity despite the challenges of remote instruction. Their proficiency in managing digital information also enhanced student engagement and accessibility to learning resources.

Furthermore, Mauricio-Garcia (2024) examined the advantages, obstacles, and methodologies related to the integration of digital platforms in the pedagogical approaches of secondary school educators. Educators observed more engagement and interaction in their

classrooms, leading to heightened student participation and understanding. Moreover, digital platforms provided flexibility in the dissemination of educational content, catering to various learning styles and tempos. This adaptability was crucial for adjusting to hybrid learning contexts.

Lastly, Valencia (2024) noted that public school teachers had demonstrated significant initiative by collaborating with local companies and community leaders to mitigate resource deficiencies in education. These agreements frequently yielded donations of supplies, access to facilities, or volunteer experience that enhanced classroom education, particularly in technical-vocational disciplines. In doing so, educators developed more contextualized and pertinent learning experiences for pupils. This method cultivated a collective accountability for education. Ultimately, these partnerships underscore educators' commitment to creativity and their determination to maintaining quality learning despite societal constraints.

Student Engagement in Practical Activities

Student engagement in practical activities is a critical component of hybrid home economics instruction, as it directly influences learning outcomes and skill development. In a hybrid setting, students must actively participate in both online and in-person activities, such as cooking, sewing, and other hands-on tasks, which require strong engagement and focus. Effective instructional strategies that promote active participation and motivate students to apply theoretical knowledge in practical scenarios are essential to maintaining high levels of engagement in hybrid home economics courses.

Escobar (2023) examines teachers' competencies in home economics instruction, focusing on classroom management, guidance skills, professional skills, and lesson delivery, while also assessing the correlation with students' acquisition of 21st-century skills, including critical thinking, problem-solving, creative thinking, communication, and collaboration skills. The respondents assessed the teachers' competencies in classroom management, guidance skills, professional skills, and lesson delivery as high. This indicates that the teachers exhibit strong classroom management abilities that enhance student learning, effective guidance skills that help learners navigate challenges affecting their academic performance, and elevated professional

competencies that, when integrated with the curriculum materials, facilitate instruction and student engagement, thereby fostering active participation in class.

In a similar vein, Magallon Peñaflorida (2025) assessed the pedagogical practices of Home Economics instructors in State Universities and Colleges (SUCs) of Western Visayas, concentrating on five principal domains: educator preparation, student relationships, assessment methodologies, instructional strategies, and information and communication technology (ICT) readiness. Findings indicated that educators shown significant preparedness via methodical class planning, substantive material delivery, and attentiveness to learner requirements. They fostered a constructive rapport with pupils, advocating for equity, respect, and individual development. Assessment methodologies prioritized outcomes-based education, performance tasks, and the congruence of evaluations with learning objectives.

Likewise, the study by Nguyen et al. (2021) revealed that the majority of active learning activities consisted of in-class problem-solving inside a conventional lecture-based course. The findings indicated predominantly favorable emotional and behavioral results for students' self-reported learning, engagement in activities, and satisfaction with the course. They found eight ways for facilitating the application of active learning, categorized into three distinct groups. Explanation tactics encompassed offering students' clarifications and justifications for employing active learning. Facilitation tactics involved collaborating with students to ensure the activity operates as planned. Strategic planning entailed engaging in activities beyond the classroom to enhance the active learning experience.

Moreover, the study by Villon (2025) indicated that educators effectively enhanced student engagement by connecting academic material to real-world situations. By contextualizing courses with quotidian situations, students perceived the subject as more relatable and significant. This method cultivated enhanced interest and motivation, promoting active engagement in both virtual and in-person environments. Practical applications facilitated the connection between theory and practice, particularly in disciplines such as Home Economics and Technology and Livelihood Education. This technique ultimately demonstrated efficacy in maintaining student engagement and enhancing comprehension in hybrid learning contexts.

Lastly, Alatan and Ocoro (2024) examined the relationship between activity-based strategies and the academic achievement of students in Home Economics in Delta State. The findings indicated that students subjected to simulation and group discussion teaching methodologies had superior academic achievement compared to those taught using the lecture method. Female students exhibited superior performance in group discussions, whereas male students demonstrated enhanced performance in simulations during the lecture style. The activity-based strategy, both collectively and individually, resulted in superior academic performance among students compared to the lecture method.

Feedback and Skill Assessment

Feedback and skill assessment are vital components of hybrid home economics instruction, as they provide students with the guidance needed to improve both their theoretical understanding and practical abilities. In a hybrid environment, timely and constructive feedback helps bridge the gap between online lessons and hands-on activities, allowing students to refine their skills and address any challenges they encounter. Effective assessment methods, both formative and summative, enable teachers to evaluate students' progress in real-time and adjust instructional strategies to ensure mastery of essential home economics skills.

Morales (2025) contends that rubrics are vital instruments that offer explicit, objective standards for appraising student performance, hence improving equity and uniformity in evaluation. They assist educators in optimizing grading, aligning expectations, and enhancing instructional methodologies, while directing students through constructive feedback and self-evaluation. Successful rubric deployment necessitates the creation of editable, shareable forms, their application across diverse assessment kinds, and the promotion of revisions informed by feedback. Developing rubrics necessitates the identification of quantifiable criteria, the establishment of performance tiers, and the utilization of descriptive language to elucidate expectations. Instructing pupils on rubric utilization and soliciting their feedback guarantees the tool's transparency, supportiveness, and emphasis on educational advancement.

In a similar vein, Cortex Elevated Staff (2024) asserts that prompt and constructive

feedback is essential for improving the efficacy of online learning environments. Timely feedback enables learners to comprehend their development and modify their efforts accordingly. This immediacy sustains interest and motivation in digital environments with restricted direct supervision. Moreover, constructive criticism provides learners with explicit direction for enhancement, promoting a growth mentality. It promotes self-reflection and enhances comprehension, both of which are vital for significant learning results. Providing prompt and constructive feedback guarantees that learners have essential support throughout pivotal periods in their educational experience.

Meanwhile, Ortega-Ruipérez and Correa-Gorospe (2024) examines the role of technology in augmenting self-regulated learning in higher education via peer evaluation activities. It underscores the significance of metacognitive tactics such as critical reflection and feedback in enhancing student learning. The research advocates for the incorporation of peer assessment within virtual classrooms, specifically Moodle, utilizing rubrics and obligatory comments to facilitate constructive feedback. Attributes like anonymous work allocation, expedited review processes, and resubmission alternatives facilitate profound reflection and ongoing enhancement. The findings underscore technology's capacity to promote autonomy, accountability, and skill enhancement in digital learning contexts.

Moreover, Javier (2020) discovered that educators are progressively adopting digital teaching tools, demonstrating eagerness to use technology into their instructional practices. Their readiness to investigate and utilize these tools indicates an increasing recognition of the advantages, including enhanced student involvement and access to varied learning resources. In practice, numerous educators utilize digital platforms not solely for content dissemination but also for formative evaluation, facilitating prompt and individualized feedback. These tools facilitate data-driven assessment, enabling educators to track progress and modify instruction according on student achievement. When educators exchange effective strategies with colleagues, a culture of creativity and ongoing enhancement develops within the school community.

Finally, Alonzo et al., (2023) examine the congruence of Philippine Technology and Livelihood Education (TLE) teachers' evaluation methodologies with outcomes-based education,

a philosophical framework foundational to the educational reforms in the Philippines. Findings indicate that TLE teachers possess the necessary assessment knowledge for implementing outcomes-based education; however, this knowledge is not entirely reflected in their actual assessment procedures. The educational environment influences the congruence of teacher assessment methods with outcomes-based education reform.

Technological Constraints

Technological constraints play a significant role in the effectiveness of hybrid home economics instruction, as limited access to digital tools and resources can hinder the delivery of quality education. Teachers and students may face challenges such as unreliable internet connections, inadequate hardware or software, and a lack of technical support, all of which can impede the seamless integration of online and practical components. Overcoming these technological barriers is essential for ensuring that hybrid learning environments remain accessible, engaging, and effective for both teachers and students in home economics programs.

Arayata (2021) emphasizes that numerous educators encounter challenges due to inconsistent internet connectivity, hindering course delivery and communication. This constraint impacts synchronous sessions and postpones feedback. Educators frequently depend on mobile data or offline modules, so undermining educational quality. The digital divide continues to be a significant obstacle to egalitarian education. Rectifying infrastructure deficiencies is crucial for the efficacy of hybrid education.

In addition, Martinez (2025) indicates that educators are deprived of high-performance devices essential for video editing, screen sharing, and interactive material development. This limits their capacity to provide captivating instruction. Numerous individuals depend on obsolete gear, which hinders productivity and constrains innovation. The disparity in device accessibility results in inconsistent educational experiences. Investment in technological resources for educators is essential for digital transformation.

Similarly, Blando (2024) discovered that educators frequently lack proficiency in utilizing digital platforms. This lack of familiarity results in ineffective tool utilization and lost possibilities

for interaction. Educators may encounter difficulties in uploading resources, administering virtual classrooms, or utilizing analytics. The digital divide encompasses not only access but also proficiency. Ongoing professional growth is essential to close this gap.

Likewise, Cortex Elevate Staff (2024) elucidates that cross-platform incompatibility may obstruct lesson delivery, particularly when students and educators utilize disparate devices or operating systems. Educators have difficulties when files fail to open properly or when functionalities are unsupported. This interrupts workflow and exasperates both instructors and learners. Compatibility challenges also impact joint endeavors. Standardizing platforms or providing technical support might alleviate these issues.

Moreover, Akmad and Abatayo (2024) demonstrate that sluggish internet speeds hinder teachers' ability to submit video lessons or download student submissions. This postpones feedback and diminishes instructional efficacy. Educators frequently reduce data or eschew multimedia entirely. The deficiency of bandwidth constrains pedagogical innovation. Infrastructure enhancements are necessary to accommodate digital learning requirements.

Furthermore, Endona and Buquia (2024) indicate that educators frequently encounter technical difficulties without sufficient assistance, resulting in extended interruptions. Numerous educational institutions lack specialized IT staff or support centers. Educators are compelled to address issues autonomously, so depleting instructional time. This undermines faith in utilizing technology. Establishing technology support mechanisms at the school level is crucial.

Additionally, Sajidan (2023) delineates the digital literacy proficiency of elementary school educators, particularly in the technology aspect. According to the Law of the Republic of Indonesia No. 14 of 2005 about Teachers and Lecturers, Article 20, Section 2, educators are mandated to possess technological proficiency. Nonetheless, in practice, numerous educators continue to possess limited proficiency in utilizing technology. This research employs a descriptive qualitative methodology utilizing a case study technique. The respondents in this study were educators from grades 1 to 6 representing six distinct elementary schools. The digital literacy level of the classroom teacher was assessed utilizing a testing method. The study's findings indicated that teachers in

grades 1, 2, 3, and 4 exhibited low levels of digital literacy, while those in grade 5 demonstrated intermediate digital literacy. Conversely, teachers in grade 6 were classified as having very poor digital literacy.

Moreover, Meinokat and Wagner (2024) examine how unstable platforms lead to classroom interruptions, including crashes or latency during live sessions. These disruptions diminish educational continuity and exasperate learners. Educators frequently transition between systems, hence increasing complexity. Performance deficiencies erode confidence in digital tools. Dependable systems are essential for maintaining hybrid learning.

Lastly, Fairchild (2021) observes that virtually recreating hands-on tasks is challenging, particularly in disciplines such as science or technology. Educators encounter difficulties in demonstrating strategies effectively or overseeing student performance. This constrains experiential learning and skill acquisition. Pre-recorded demonstrations are beneficial but lack interactivity. Hybrid models must incorporate secure, in-person elements whenever possible.

Pedagogical limitations and instructional delivery challenges in hybrid home economics instruction

Pedagogical limitations and instructional delivery challenges in hybrid home economics instruction stem from the difficulties teachers face in balancing both online and in-person learning components while maintaining effective engagement and skill development. These limitations may include the lack of familiarity with digital teaching tools, difficulties in adapting hands-on practical activities to an online platform, and the challenge of providing individualized support to students in a hybrid environment.

Moreover, instructional delivery challenges arise from the need to create a seamless learning experience that caters to different learning styles, technological access, and varying levels of student participation in both online and face-to-face settings. Addressing these pedagogical limitations is crucial for enhancing the quality and effectiveness of hybrid home economics instruction.

Wang and Huang (2024) identified that teachers frequently experience insufficient online contacts with learners, inadequate interactions among online learners and classroom learners, restricted interactions between online learners and content, and technological limitations. This article categorizes the strategies into five primary themes: 1) Initiating regular exchanges, 2) allowing online learners to assume active roles, 3) implementing ongoing assessment, 4) enhancing technology circumstances, and 5) fostering professional development.

Similarly, Fabriz et al. (2021) demonstrate that online environments hinder the maintenance of student concentration due to distractions and screen fatigue. Educators must employ many methodologies to maintain student engagement. Passive listening results in diminished retention. Interactive technologies and regular assessments mitigate disengagement. Creating dynamic lessons is essential.

In addition, Khan and Kha (2019, referenced in Valencia et al., 2024) identified that teachers face challenges in assessing and evaluating students effectively via online platforms and in grading them accurately. Educators are overwhelmed and fatigued due to heightened expectations and constrained resources during the pandemic, which have adversely affected the teachers in this study. Certain conventional classroom courses are being supplanted by online distance education. Teachers' proficiency in modifying content, delivery methods, and tests to interest students while upholding academic objectives without causing undue stress or overburden.

Meanwhile, Ahmed and Sunway University (2023) discovered that although multimedia improves learning, educators encounter difficulties with technical and design elements. Inadequate integration may bewilder learners or divert attention from objectives. Educators require resources and instruction to utilize multimedia proficiently. Multimedia must correspond with educational objectives. Assistance in content generation enhances instructional efficacy.

Furthermore, Wut and Xu (2021) emphasize that online classrooms frequently lack the spontaneity and warmth characteristic of in-person interactions. Educators struggle to interpret non-verbal signals or cultivate relationships. This influences classroom atmosphere and student

motivation. Organized dialogues and breakout sessions facilitate the revival of interaction. Deliberate design is essential to humanize virtual environments.

On another note, Arroyo (2023) disclosed that the obstacles faced by students, parents, and educators included insufficient time, inadequate funding, ignorance regarding the concept of a home learning space, scarcity of materials, and limited time to establish the learning environment. Moreover, these obstacles were surmounted by soliciting counsel from others, utilizing existing resources, and procuring necessary supplies, among other strategies.

Lastly, Maddukelleng (2023) determined that the swift advancement of technology and information necessitates educators to be informed about technological progress by perpetually enhancing their skills, developing pedagogical methods, and adjusting to societal demands. To address the forthcoming difficulties, educators must possess a diverse array of life and job skills, learning and innovation capabilities, as well as proficiency in media and technology utilization.

Classroom Management in Hybrid Setups

Classroom management in hybrid setups presents unique challenges as teachers must simultaneously manage in-person students and those participating remotely, often requiring different strategies to maintain engagement and discipline. Teachers must establish clear expectations, routines, and communication channels to ensure that both groups of students remain on task and actively participate in activities. Additionally, the use of technology in hybrid classrooms necessitates the development of skills to handle technical issues, monitor student engagement across multiple platforms, and provide consistent support to both in-person and online learners. Effective classroom management in a hybrid environment is essential to creating an inclusive and productive learning atmosphere for all students.

The Child Mind Institute (2021) asserts that distant learning settings restrict teachers' capacity to monitor and react to student behavior instantaneously. The absence of physical presence makes it more challenging to perceive subtle indicators such as body language or disengagement. This complicates early intervention and the maintenance of classroom norms. Educators frequently depend on chat engagement or camera utilization, which may lack

consistency. Consequently, behavior management tactics must be tailored to virtual environments, prioritizing proactive participation and explicit expectations.

Similarly, Barrot et al. (2021) discovered that students in online environments frequently encounter difficulties with time management, resulting in missed deadlines. Educators encounter challenges in monitoring submissions and delivering prompt reminders. The absence of organized classroom routines fosters procrastination. While flexible deadlines may be beneficial, they can also diminish accountability. Efficient enforcement necessitates digital instruments for scheduling and reliable communication.

In addition, the National Education Association (2021) observes that educators exert limited control over children's home environments, which differ significantly regarding noise, supervision, and resources. These elements influence focus and engagement. Educators must create lessons that are flexible for many contexts. This encompasses asynchronous options and low-tech alternatives. Comprehending learners' circumstances is essential for equitable instruction.

Meanwhile, the study by Yuniar (2023) identified five obstacles encountered by students in online learning. These challenges include barriers to accessing the application and frequently encountered internet connectivity issues during online learning. Another difficulty is the diminished interaction between students and teachers in the online classroom. Moreover, challenges arise in comprehending the subject during online education. Students encounter issues pertaining to indistinct pronunciation while online learning. This study identified two obstacles encountered by students in offline education: limited resources and inadequate technology.

Moreover, Khatun et al. (2022) identified a significant issue: teachers struggle to maintain students' attention and involvement during class. During class, when the teacher poses a question, responses often originate solely from on-campus students, leaving online students unresponsive; this complicates the teacher's ability to control the class effectively. Interaction and active engagement are occasionally overlooked in hybrid learning methodologies. Consequently, irritation, repetition, and boredom emerged for both the teacher and the learner.

Additionally, the Virtual Teacher Association (2024) emphasizes that online group work is devoid of the spontaneity and social cues characteristic of face-to-face collaboration. Educators encounter difficulties in overseeing group interactions and mediating conflicts. Designating explicit roles and utilizing breakout spaces can enhance organization. Nonetheless, technical difficulties and inconsistent participation persist as challenges. Instructing pupils in digital cooperation is crucial.

Similarly, Meinokat and Wagner (2024) examine how platform failures, audio malfunctions, and connectivity issues impede class progression and exasperate both educators and learners. These disruptions diminish teaching time and impair learning continuity. Educators must possess contingency plans and exhibit adaptability in their pacing. Educational institutions must allocate resources towards dependable infrastructure and assistance. Technological literacy also contributes to reducing interruptions.

Furthermore, Bantilan & Melchor (2023) discovered that students in online courses frequently encounter delayed or generic feedback, which impedes learning. Educators encounter difficulties in delivering immediate corrections, particularly during practical activities. Digital tools like as annotation applications or real-time commentary can be beneficial. Feedback must be precise and prompt to be successful. Students gain advantages from peer evaluation and self-assessment.

On another note, Rajan et al. (2024) assert that online platforms provide insufficient understanding of students' emotional and cognitive engagement. Educators depend on superficial metrics such as logins or submissions. This complicates the identification of students in distress. Surveys, reflections, and individual consultations can yield profound insights. Engagement should be assessed comprehensively.

Finally, Stamberger (2025) observes that mixed instruction Hybrid education offers both advantages and obstacles, especially due to its dependence on technology, which may exacerbate the digital divide for students without dependable gadgets or internet connectivity. Restricted social connection relative to conventional classrooms may impede the learning experience for kids

who flourish through peer participation and unplanned cooperation. The dual responsibilities of overseeing online and in-person elements frequently result in an augmented burden, necessitating robust time management and support mechanisms to avert burnout. Technical challenges, including connectivity problems and software malfunctions, significantly hinder learning, particularly for individuals reliant on digital platforms. To guarantee equitable and effective hybrid education, schools must invest in technical infrastructure, offer comprehensive support services, and create collaborative, inclusive learning environments.

Assessment Difficulties

Assessment difficulties in hybrid home economics instruction arise from the challenge of evaluating students' practical skills when some students are learning online, and others are in the classroom. Teachers may struggle to assess hands-on activities, such as cooking or sewing, in a virtual setting, where they cannot directly observe students' work or provide immediate feedback. Additionally, ensuring that assessments are fair and consistent across both online and in-person environments can be challenging, as students may have different access to resources and varying levels of technical proficiency. Addressing these assessment difficulties requires the development of innovative strategies that allow for effective evaluation of both theoretical knowledge and practical skills in a hybrid learning context.

Li et al. (2023) investigated the perceptions of university academics in Hong Kong regarding their experiences with synchronous hybrid teaching, wherein on-site and distant students engage in simultaneous learning. Through surveys and focus group interviews, researchers discovered that although instructors perceived themselves as technically proficient, they noted diminished student involvement and interaction relative to conventional classes. Scholars emphasized that difficulties include heightened workload, navigating dual classroom forms, and crafting interactive teaching appropriate for hybrid settings. Assessing student development was challenging, particularly due to inadequate resources for monitoring online learners. The findings emphasize the necessity for improved support systems and instructional design methodologies to augment the efficacy of hybrid learning.

Similarly, Michelle (2023) delineates how online assessments may be influenced by access, technological proficiency, or environmental factors. Educators must guarantee lucidity, pertinence, and accessibility. Varied formats and unstructured work foster equity. Ongoing evaluation and student feedback enhance design. Equity should inform assessment planning.

In addition, the findings of Jain (2025) highlight that technology disparity continues to be a significant obstacle in hybrid learning contexts, as certain students lack dependable access to gadgets or internet connectivity. This gap restricts their capacity to engage fully and equally in evaluations. Moreover, contemporary engagement tracking techniques frequently neglect to measure profound cognitive engagement, hindering instructors' ability to assess authentic learning outcomes. Numerous educators expressed feeling inadequately equipped to create evaluations suited for hybrid forms, attributing this to insufficient training and resources. These problems cumulatively jeopardize the validity and reliability of evaluations, necessitating more robust support networks and new assessment methodologies.

Meanwhile, Ahmed (2023) examines the superficiality of e-feedback, particularly for skill-based assignments. Educators are required to utilize annotated graphics, audio recordings, or video replies. Peer feedback enhances value. Promptness and precision are essential. Feedback needs to facilitate enhancement rather than merely assessment.

Moreover, Aljawawdeh (2023) emphasizes that numerous platforms are deficient in comprehensive analytics for monitoring student advancement. Educators are need to either manually aggregate data or utilize other tools. Dashboards and learning management systems can provide assistance. Data ought to guide education and provide support. Privacy and precision must be guaranteed.

Likewise, Lakha (2025) elucidates that Performance-Based Assessment appraises students' competencies via practical skills and real-world applications, transcending simple memorization. It promotes critical thinking, problem-solving, and student engagement by emphasizing significant tasks associated with authentic learning, including superior biomedical science tutoring. While it provides potential for creativity and collaboration, difficulties such as

subjective assessments and resource requirements can be mitigated by the implementation of explicit rubrics and standardized grading procedures. Diverse formats, including projects and portfolios, facilitate thorough assessment, offering insights into student learning as they engage with these organized, authentic evaluations.

Conversely, the study by Pavlov et al. (2021) investigates the issue of online collaboration between teachers and students in English as a Foreign Language (EFL) classrooms, specifically examining the impact of video cameras on this cooperation. The principal conclusions of the study indicate that 1) cameras may play a crucial role in enhancing online collaboration; 2) there exists a discord in the dynamics among students, educators, and educational resources; 3) students and educators have divergent perceptions regarding the necessity of utilizing cameras, potentially constraining opportunities for online collaboration; and 4) although students experience increased comfort when all respondents activate their cameras, many do not regard activating their own cameras as significant.

Lastly, the study by Chavez and Lamorinas (2023) investigates the assessment procedures and strategies employed to safeguard the quality and integrity of teaching and learning among higher education students at Zamboanga Peninsula Polytechnic State University, Zamboanga City, Philippines. This research utilizes a thorough and dependable survey questionnaire to evaluate evaluation techniques and strategies, encompassing their quality and integrity. A total of 300 kids and educators were intentionally chosen for the study. According to the findings, practical assessment and skill evaluation were the most often utilized methodologies by the educators. There is a necessity for skill development in distant learning, prompting educators to incorporate it into skill assessment methodologies. The study reveals the existing methodologies employed by educators in evaluating student academic performance, approaches to implement assessments in accordance with health protocols, and techniques to maintain the quality and integrity of these evaluations despite challenges in the learning environment.

Demographic Profile and teachers' practical skills in hybrid home economics instruction

In hybrid Home Economics instruction, teachers' demographic profiles such as age, years of experience, educational attainment, and modality-related training play a pivotal role in shaping their practical skills and adaptation to blended learning models. Research indicates that teachers who are younger or have fewer years of experience may exhibit higher proficiency in integrating online tools and managing hybrid classrooms.

Quenikito (2022) evaluated teachers' instructional competencies regarding their personalities and teaching skills, which encompass introduction, interaction, and integration; assessed the level of students' entrepreneurial skills; and examined the significance of teachers' socio-demographic characteristics. The research employed descriptive statistics to gather, document, and evaluate data. This was carried out in 14 Notre Dame Schools located in Cotabato Province. The findings indicated that teachers' socio-demographic attributes did not significantly affect their instructional competence or students' entrepreneurial skills. It was determined that teachers' instructional competencies considerably affect students' entrepreneurial skills. Consequently, despite the variations among the teacher-respondents in socio-demographic attributes, including age, gender, educational qualifications, tenure, and rank, they demonstrated commonalities in their instructional competencies.

Montecarlo and Sajonia (2024) assessed the degree of technology utilization by teachers in a secondary school within the big-sized division of central Philippines during the School Year 2022-2023 to inform an intervention plan. A descriptive research approach was employed, utilizing a 30-item survey questionnaire to collect data from one hundred six (106) secondary teachers to assess the degree of their technology deployment in teaching and learning practices. The findings indicated that age and gender significantly influenced technology usage in digital education, with younger female educators exhibiting higher technology consumption. Moreover, age influenced the utilization of technology for digital assessments and educational resources, with educators under 40 years old employing technology more regularly in both domains.

Teachers' practical skills in hybrid home economics instruction and pedagogical limitations

Hybrid home economics instruction requires teachers to merge traditional hands-on methods such as cooking, sewing, or food preparation with online and blended teaching strategies, demanding a new set of practical skills. Despite the opportunities of this teaching model, teachers often encounter significant pedagogical limitations, including difficulties in adapting in-person activities to virtual platforms, managing asynchronous and synchronous sessions, and ensuring meaningful student participation. Understanding both the practical skills teachers bring and the pedagogical barriers they face is essential for designing effective professional development and instructional support in hybrid home economics programs.

Gudoniene (2025) asserts that hybrid education flourishes through successful technology integration, necessitating equal access to gadgets, internet connectivity, and intuitive platforms for both synchronous and asynchronous learning. Innovative educational approaches such as flipped classes and inquiry-based models enhance the hybrid experience by promoting greater student interaction and autonomy. Teacher preparedness is crucial, as professional development and institutional support enable educators to adeptly navigate hybrid forms. Collaborative tools and individualized engagement tactics are crucial for sustaining student motivation, particularly in various learning contexts. Evaluation should be adaptable and thorough, employing several techniques to track advancement and deliver substantive feedback. When these components converge, hybrid learning results in enhanced academic performance, increased retention, and heightened student happiness.

Galindo-Domínguez et al. (2024) discovered a positive correlation between teacher digital competence and attitudes toward advanced educational technology, indicating that such competence is essential for the successful implementation of new instructional methods, including hybrid models.

Ulla and Perales (2022) indicate that educators with superior pedagogical and technical training executed hybrid teaching more efficiently, while they still encountered considerable

workload and interaction difficulties. The data indicate a correlation: increased competence is associated with a reduced frequency or severity of obstacles related to hybrid training, or at least improved management of such challenges.

RESEARCH QUESTIONS

This study, Teachers' Practical Skills and Pedagogical Limitations in Hybrid Home Economics Instruction: Toward an Action Plan, was conducted to assess the practical skills and pedagogical limitations in hybrid home economics instruction.

Specifically, it seeks answers to the following questions:

1. What was the demographic profile of the respondents in terms of:

1.1 Teachers

1.1.1 age;

1.1.2 sex;

1.1.3 position;

1.1.4 highest educational attainment;

1.1.5 years of teaching experience; and

1.1.6 number of trainings related to hybrid modality in Home Economics in the recent 5 years?

1.2 Students

1.21 age, and

1.2.2 sex?

2. What was the level of teachers' practical skills in hybrid home economics instruction as assessed

by the two groups of respondents in terms of:

2.1 hands-on task performance;

2.2 resource accessibility and usage;

2.3 student engagement in practical activities; and

2.4 feedback and skill assessment?

3. What was the extent of pedagogical limitations of the teachers' skills in hybrid home economics instruction as assessed by the two groups of respondents in terms of:

3.1 technological constraints;

3.2 instructional delivery challenges;

3.3 classroom management in hybrid setups; and

3.4 assessment difficulties?

4. Is there a significant difference in the level of teachers' practical skills in hybrid home economics instruction when grouped according to profile?

5. Is there a significant difference in the extent of pedagogical limitations of the teachers in hybrid home economics instruction when grouped according to profile?

6. Is there a significant relationship between the level of teachers' practical skills and extent of pedagogical limitations of the teachers in hybrid home economics instructions?

7. Based on the findings, what output could be proposed?

METHODOLOGY

This presents the research design and data collection strategies that the study will employ. It also explains the data treatment and analysis techniques to be used to support the reliability and validity of the study being undertaken.

Research Design

The descriptive quantitative research design was appropriate for the study Teachers' Practical Skills and Pedagogical Limitations in Hybrid Home Economics Instruction: Toward an Action Plan because it allowed for the systematic collection and analysis of numerical data related to teachers' practical skills and pedagogical limitations. By utilizing structured surveys or questionnaires, this design enabled the researcher to gather data from a large sample of teachers on various aspects of their teaching experience in a hybrid environment. This included quantifying specific challenges they face, their confidence in using hybrid teaching tools, and the effectiveness of their instructional methods in a blended setting. The descriptive nature of the research provided a clear picture of the current state of hybrid instruction in home economics, highlighting trends, patterns, and areas that require improvement.

Moreover, the quantitative descriptive design was used to methodically measure, quantify, and profile traits, frequencies, and trends within a given population or phenomenon without the need for active intervention (Slater and Hasson, 2024). This approach offered a broad overview of the teaching context and created a foundation for developing actionable recommendations. Since the aim of the study was to inform an action plan, the objective was not to explore deep, qualitative experiences but to quantify the scope of existing issues and determine the extent of specific challenges across a wider sample. The results then guided targeted interventions or professional development strategies to improve the effectiveness of hybrid Home Economics instruction, making the research design a fitting choice for this study.

Population and Sampling

The study's population consisted of 1,246 students and all 55 Home Economics teachers at

the junior high school level of General Mariano Alvarez Technical High School. To ensure comprehensive coverage of all eligible respondents, the study employed a random sampling technique for student-respondents and a total enumeration sampling strategy for teachers, a type of non-probability sampling that involves selecting all individuals within a defined group.

This approach was particularly effective when the goal was to obtain in-depth insights from respondents who possessed specific roles, experiences, or characteristics aligned with the research objectives. Rather than aiming for generalizability, total enumeration and simple random sampling prioritized contextual relevance and expertise, ensuring that the data collected was directly reflective of the study's focus. By involving teachers and students actively engaged in hybrid teaching and learning instruction, the research strengthened the validity of its findings and maintained consistency with its aim to explore coaching dynamics and athlete burnout.

Respondents of the Study

The study examined a total of 303 students and 55 Home Economics teachers. Of the 55 teachers, 28 taught Food Technology, 13 taught Garments Technology, and 14 taught Cosmetology. There were 11 teachers who taught grade 7 students, 15 who handled grade 8, 13 who taught grade 9, and 16 who taught grade 10.

This sample size was sufficient to facilitate meaningful statistical analysis and supported the generalization of findings within the context of hybrid learning instruction. To ensure relevance and data integrity, the study applied specific inclusion and exclusion criteria.

The inclusion criteria consisted of teachers and students who were actively involved in Home Economics hybrid teaching and learning instruction during the academic year 2025–2026 and had direct exposure to hybrid instruction. These individuals were required to have at least one year of teaching experience to ensure familiarity with hybrid learning instruction.

The exclusion criteria included teachers who were not teaching Home Economics. By applying these criteria, the study ensured that all respondents possessed the necessary expertise and contextual relevance to contribute meaningfully to the investigation.

Research Instruments

The principal instrument for data collection was a researcher-made survey designed to assess practical skills in hybrid instruction and the pedagogical limitations encountered in implementing hybrid instruction in Home Economics. This instrument comprised a sequence of organized inquiries aimed at gathering relevant information from respondents.

Part I of the survey focused on the demographic profile of respondents. For teachers, items were designed to capture age, sex, position, highest educational attainment, years of teaching experience, and the number of trainings related to hybrid modality in Home Economics within the last five years. For students, the demographic profile was limited to age and sex. This part provided essential background information to contextualize the findings and allowed the researcher to analyze whether demographic variables influenced perceptions of hybrid instruction.

Part II of the survey was designed to measure the teachers' practical skills in hybrid Home Economics instruction. A 4-point Likert scale was employed, with the following descriptive anchors: 1.00–1.49 = Never; 1.50–2.49 = Sometimes; 2.50–3.49 = Often; 3.50–4.00 = Always. This scale allowed respondents to indicate the frequency with which teachers demonstrated practical skills in areas such as hands-on task performance, resource accessibility and usage, student engagement in practical activities, and feedback and skill assessment. The use of frequency-based descriptors provided a clear measure of how consistently teachers applied these skills in hybrid instructional settings.

Part III of the survey focused on the extent of pedagogical limitations experienced by teachers in hybrid Home Economics instruction. A parallel 4-point Likert scale was used, but with descriptors tailored to measure limitations: 1.00–1.49 = Never at all limited; 1.50–2.49 = Slightly limited; 2.50–3.49 = Moderately limited; 3.50–4.00 = Highly limited. This scale enabled respondents to evaluate the degree to which teachers encountered technological constraints, instructional delivery challenges, classroom management difficulties in hybrid setups, and assessment-related issues. By quantifying the severity of these limitations, the instrument provided a nuanced understanding of barriers to effective hybrid instruction.

Together, these Likert scales ensured that the survey captured both the positive dimensions of instructional practice (Part II) and the negative constraints or limitations (Part III). This dual approach strengthened the instrument's ability to generate comprehensive insights into the effectiveness of hybrid Home Economics instruction, aligning directly with the study's objectives.

Validation and Reliability of the Instrument

The research instrument was subjected to validation and reliability testing to ensure its effectiveness and quality. Content validity was employed to determine how well the instrument represented the subject under investigation. This process involved an extensive review of related literature and an expert evaluation to guarantee the inclusion of essential elements while excluding irrelevant ones. A panel consisting of a school head, research coordinator, master teacher, language specialist, and a university research professor assessed each item for validity. These experts evaluated the relevance, accuracy, and clarity of the items.

The survey questionnaire was pilot tested with 25 teachers and students possessing similar traits, with the pilot test conducted in a different locale. To establish reliability, Cronbach's alpha was utilized to measure the internal consistency of the items. This technique assessed the extent to which the items consistently captured the same construct. An alpha coefficient of 0.70 or higher was generally considered acceptable for research purposes, while values of 0.60 or higher were deemed adequate in exploratory studies.

The internal consistency of the survey instrument was evaluated using Cronbach's alpha for each subscale. The results indicated that all components exhibited strong reliability. Specifically, the hands-on task performance scale produced a Cronbach's alpha of .813, while resource accessibility and usage achieved an excellent reliability score of .901. Student engagement in practical activities and feedback and skill assessment showed outstanding reliability, with alphas of .922 and .919, respectively. For the pedagogical limitations section, technological constraints had an alpha of .812, instructional delivery challenges scored .862, classroom management in hybrid setups was .908, and assessment difficulties reached .900. All values exceeded the generally accepted threshold of .70, signifying that the items within each construct consistently measured

the targeted dimension. These high reliability coefficients affirm the appropriateness of the instrument for accurately capturing teachers' practical skills and pedagogical limitations in the context of hybrid Home Economics instruction.

Data Gathering

The researcher complied with the regulations set forth by the Department of Education (DepEd) as outlined in Regional Memorandum No. 228, s. 2020, which underscored the importance of ethical standards in research involving both students and faculty. A formal request letter was prepared and submitted to the appropriate school and division authorities, including the Schools Division Superintendent. This letter was endorsed by the school principal and the Public Schools District Supervisor, while the researcher's affiliation with the university was verified through a certification issued by the dean or registrar.

The request letter included copies of the study instruments, university approval, ethical clearance, informed consent forms, data management protocols (covering security, storage, and eventual disposal), and authorization for interview recording when necessary. Approval was obtained solely from the division directly relevant to the research.

Following approval, the researcher informed the respondents of the study's objectives and secured their informed consent. Data collection was carried out either in person or online through Google Forms, social media, or email. Once responses were gathered, the researcher systematically organized the data for analysis. Throughout all stages of collection, storage, and disposal, strict procedures were observed to maintain the confidentiality, integrity, and security of participant information.

Statistical Treatment of Data

To analyze the quantitative data collected in the study, several statistical tools and measures were applied:

Frequency Distribution: This tool was used to measure the distribution of responses in the respondents' demographic profile.

Weighted Mean: The weighted mean was used to assess responses on practical skills and pedagogical limitations.

Standard Deviation: Standard deviation illustrated the extent to which responses deviated from the mean, serving as a crucial instrument for analyzing the consistency and variability of data.

Mann-Whitney U Test: This test was used to determine significant differences in the level of teachers' practical skills in hybrid home economics instruction when grouped according to sex profile.

Kruskal-Wallis Test: This test was used to determine significant differences in the level of teachers' practical skills in hybrid home economics instruction when grouped according to age, position, education, years of teaching, and trainings related to hybrid modality in Home Economics.

Spearman Rho: This tool was used to assess the relationship between the level of teachers' practical skills and pedagogical limitations in hybrid home economics instruction.

Ethical Considerations

Ethical considerations were central to ensuring the integrity and credibility of the study, especially given the involvement of minors. Before data collection, informed consent was obtained from both students and their parents or legal guardians, ensuring that participation was voluntary and based on a clear understanding of the study's objectives, procedures, and potential risks. Respondents were informed that they could withdraw at any stage without penalty, and no coercion or undue influence was applied. The study followed the ethical standards of the Department of Education and relevant institutional review boards to safeguard the rights and welfare of child respondents.

Confidentiality and anonymity were strictly upheld. Student responses were anonymized, and all data were securely stored to protect privacy. No personally identifiable information was

disclosed in reports or publications. Survey instruments were age-appropriate, non-invasive, and carefully designed to avoid distress or discomfort. In cases where sensitive concerns such as bullying or emotional distress were reported, referrals were made to school counselors or appropriate support services to prioritize student well-being.

The study also emphasized cultural sensitivity and inclusivity. The researcher was trained to respect the diverse backgrounds of respondents and ensured that data collection methods and language remained free from bias or discrimination. Collaboration with teachers and community stakeholders was incorporated to align the study with the values and norms of the school community. Overall, the research framework prioritized transparency, respect, and the protection of vulnerable populations, ensuring the highest ethical standards throughout its implementation.

FINDINGS

This chapter presents the summary of the major findings, the conclusions drawn from the results of the study, and the corresponding recommendations. The conclusions are based on the evidence gathered regarding the practical skills and pedagogical limitations experienced by Home Economics teachers in implementing hybrid instruction. The recommendations and proposed action plan are intended to address the identified challenges and support the enhancement of instructional practices in Home Economics under the hybrid learning modality.

1. The largest proportion of teachers are aged 25–30 years, female, hold a college degree, have five years or less of teaching experience, and have attended between one and three trainings. The vast majority of students participating in hybrid Home Economics instruction are 15–16 years old, with most being female.

2. Teachers excel in remote sequential instruction, use open educational resources, design engaging hybrid assignments, and conduct formative assessments. However, they face challenges with producing high-quality demonstration outputs, integrating print and digital resources, motivating students with gamified activities, and aligning assessments

with learning outcomes. Students' observation on teachers practical skills included proficient in remote learning, multimedia use, collaboration, and rubric-based assessment, but struggle similarly with demonstration output quality, resource integration, gamified engagement, and adapting to various assessment formats.

3. Teachers have limited reliable internet but sufficient time for instruction, steady engagement, and smooth performance assessments. Main challenges include lack of technical support, difficulty integrating multimedia, maintaining discipline, and providing effective feedback. Students observed adequate equipment and engagement, but face issues with technical support, organizing complex activities, maintaining engagement, and ensuring fair assessments.

4. There are statistically significant differences in practical skills including hands-on task performance, resource accessibility and usage, student engagement, and feedback and skill assessment based on the profiles of teachers and students.

5. Statistically significant differences in pedagogical limitations such as technological constraints, instructional delivery, classroom management, and assessment difficulties are observed based on teacher and student profiles.

6. Teacher and student assessments indicate a statistically significant association between practical skills and pedagogical limitations.

7. The action plan directly addresses the key findings by providing targeted solutions to the identified strengths and challenges in hybrid Home Economics instruction. It focuses on enhancing teacher and student competencies, improving access to resources and technical support, promoting innovative instructional and assessment practices, and establishing robust monitoring and feedback systems.

CONCLUSIONS

Based on the summary of the findings, the following conclusions were drawn:

1. The demographic profile of both teachers and students likely results from recruitment and enrollment patterns in the school. Teachers' limited experience and training exposure can be attributed to their relatively recent entry into the profession.

2. Teachers and students excel in certain hybrid learning skills due to ongoing professional development and adaptation to remote instruction requirements. However, their challenges stem from limited training, resources, or experience with these specific areas within hybrid environments.

3. The challenges arise from infrastructural limitations, insufficient support systems, and the need for improved digital infrastructure and teacher training. Students' similar challenges reflect systemic issues within the hybrid learning setup.

4. Certain teacher and student profiles (age, experience, or gender) are more likely to influence abilities in hands-on tasks, access to resources, engagement, and assessment.

5. Teachers with stronger digital skills and broader classroom experience are better equipped to design and manage hybrid lessons, while students with diverse learning styles require differentiated approaches to remain engaged.

6. Investing in capacity-building programs to enhance practical skills not only improves instructional quality but also mitigates the limitations teachers face in hybrid Home Economics classrooms, suggesting that targeted interventions in skill development can help reduce teaching and learning challenges.

7. The action plan was developed in direct response to these findings, ensuring that each intervention corresponds to an identified need. It is designed to systematically address gaps in training, resources, instructional practice, and support, thereby fostering effective and equitable hybrid Home Economics instruction

RECOMMENDATIONS

The following recommendations were derived based on the conclusions drawn.

1. Teachers may engage in ongoing mentorship programs to build confidence and experience, while schools provide structured student orientation to ease adjustment to hybrid Home Economics. School heads must revise recruitment and training policies to ensure a diverse, well-prepared teaching workforce.

2. School may conduct targeted workshops on demonstration techniques, gamification, and assessment, while allocating funds for specialized instructional materials. Teachers may integrate gamified activities to strengthen students' resource-use and participation skills.

3. Teachers must advocate for technical support improvements and join ICT training to enhance digital competence. Students may attend digital literacy workshops and use established support channels. School heads may prioritize investments in connectivity and equipment, including IT staff expansion.

4. Teachers may adapt instruction using differentiated strategies aligned with student profiles. Students must be given personalized tasks suited to their skill levels. School heads may analyze teacher-student profile data to guide targeted interventions.

5. Teachers may pursue continuous training in technology integration and classroom management. Students may join independent learning workshops to develop adaptive skills. School heads must facilitate professional development opportunities and monitor intervention effectiveness regularly.

6. Teachers may focus on practical skill development alongside pedagogy to maximize instructional impact. Students may engage in hands-on skill-building activities to reduce barriers. School heads must design structured action plans addressing both practical and pedagogical needs identified in assessments.

7. Future researchers should conduct longitudinal studies to measure the sustained impact

of the action plan. They should also explore comparative research across different contexts to validate and refine interventions for broader application.

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