Interactive Videos Application in Home Economics Teaching among Bachelor of Technology and Livelihood Education Students

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ABSTRACT

This study employed a purposive sampling method to examine the effect of interactive videos in teaching Home Economics among 30 third-year Bachelor of Technology and Livelihood Education (BTLE) students—comprising 3 males and 27 females—at Batangas State University–San Juan Campus. The instructional content focused on Food and Nutrition, which was the students' current subject under Home Economics at the time of the study. To achieve the objectives of the research, a descriptive research design was utilized. Data were collected using a validated achievement test and a researcher-made questionnaire. A pretest was administered to determine the students' level of performance prior to the implementation of the interactive video strategy, while a posttest and questionnaire were conducted after the intervention. Both quantitative and qualitative data were analyzed. A t-test was employed to determine whether there was a significant difference in students' performance before and after the use of interactive videos. The results revealed that interactive videos possess features that enhance instructional effectiveness, such as interactive video paths, embedded quizzes, hotspots, captions, clipping, game-like experiences, learner analytics, and multi-device support. The analyzed data further indicated that the strategy facilitated learning across the cognitive, affective, and psychomotor domains. Overall, the use of interactive videos significantly contributed to the improvement of students' academic performance. The study recommends the integration of other innovative instructional strategies to further enhance the teaching of Home Economics and to complement the use of interactive videos in both classroom-based and remote learning environments.

Keywords: Interactive Videos, Teaching Strategy, Technology and Livelihood Education, Home Economics

INTRODUCTION

Technology and Livelihood Education (TLE) is a vital component of the Philippine education system, designed to equip learners with practical knowledge, skills, and values applicable to daily living, work, and entrepreneurship. As a skills-oriented and decision-making subject, TLE emphasizes family living, productivity, and career preparation, making it essential in developing well-rounded and self-reliant individuals (Aguillana, 2019).

One of the major components of TLE is Home Economics, a discipline that focuses on the improvement of individual and family life through the development of sound family values, effective resource management, and essential life skills. Since its establishment in the early 20th century, Home Economics has sustained its mission of enabling individuals and families to meet their physical, psychological, and socio-economic needs within evolving social contexts, particularly in the Philippine setting.

Effective instruction in Home Economics requires innovative and learner-centered teaching strategies that respond to students' diverse learning needs. Learning styles theory suggests that learners differ in how they process information, such as visual, auditory, audiovisual, and kinesthetic modalities (University of Kansas, 2021). With the increasing integration of educational technology, interactive videos have emerged as a promising instructional tool capable of addressing multiple learning styles simultaneously. Studies have shown that interactive videos promote active learning by allowing learners to engage with content through embedded

questions, demonstrations, and feedback, thereby enhancing motivation, comprehension, and retention of lessons (Cooper & Higgins, 2014).

Despite these technological advancements, learning difficulties and declining academic performance have been observed among Bachelor of Technology and Livelihood Education students majoring in Home Economics at Batangas State University–San Juan Campus. These challenges underscore the need to examine the effectiveness of technology-enhanced instructional strategies that can improve learning outcomes across cognitive, affective, and psychomotor domains.

In this context, the present study aimed to assess the effectiveness of interactive videos in teaching Home Economics among Bachelor of Technology and Livelihood Education students at Batangas State University–San Juan Campus. Specifically, it sought to determine the features of interactive videos as applied in Home Economics instruction, examine how these videos facilitate students' development in the cognitive, affective, and psychomotor domains, and identify whether a significant difference exists in students' performance before and after the implementation of interactive videos. Furthermore, the study aimed to propose innovative instructional activities to further enhance the teaching and learning of Home Economics based on the findings..

LITERATURE REVIEW

Teaching Methods and Strategies

Republic Act No. 10533, otherwise known as the Enhanced Basic Education Act of 2013, mandates the use of pedagogical approaches that are constructivist, inquiry-based, reflective, collaborative, and integrative. The curriculum is expected to be learner-centered, inclusive, and developmentally appropriate to address the diverse needs of learners (Corpuz, 2015). In line with this policy, teaching strategies play a crucial role in facilitating meaningful learning experiences.

Teaching strategies refer to the methods and techniques employed by teachers to support learners throughout the learning process. The selection of appropriate strategies depends on the nature of the subject matter, the learners' level of expertise, and their stage of learning (Anilkumar, 2020). These strategies may be broadly classified as deductive or inductive. The deductive approach begins with general rules or principles and proceeds toward specific examples and applications, whereas the inductive approach starts with concrete experiences or examples and leads to generalizations or abstract concepts (Corpuz, 2015).

Instructional materials serve as essential tools in enhancing the teaching–learning process. According to Borabo and Borabo (2015), these materials help clarify concepts, sustain learner interest, and improve comprehension. Teachers are therefore expected to possess the skill to critically evaluate and select appropriate resources based on criteria such as accuracy, relevance, clarity, completeness, organization, and motivational value (Lucas, 2015). With the integration of technology, instructional materials have expanded to include digital and interactive resources that support both collaborative and independent learning (Corpuz, 2015).

Digital media refers to technologies that enable new forms of communication, interaction, and content creation in digital formats (Buendia & Vindolo, 2016). Interactive digital media, in particular, allows users to actively engage with content through various input mechanisms such as keyboards, touch screens, and voice commands. When effectively integrated into instruction, digital media applications serve as powerful educational tools that enhance learner engagement and understanding.

In the current educational landscape, a large proportion of learners are considered digital natives—individuals born into the digital era who are highly familiar with technology and digital environments. These learners, often referred to as the "iGeneration," naturally engage with digital tools and multimedia resources, making technology-enhanced instruction increasingly relevant (Sicat, 2014). Educational videos, in particular, have become widely used tools for teaching both basic and complex skills. Research indicates that a significant percentage of learners regularly engage with video-based content, which has made abstract concepts more accessible and easier to understand (Bevan, 2019).

Effective educational videos should be concise, engaging, and well-structured. Bevan (2019) emphasized that instructional videos should ideally be limited to five minutes or less, maintain a conversational tone, balance visual and auditory elements, and be divided into short segments. The inclusion of interactive features such as embedded quizzes further promotes reflection, engagement, and learner ownership of the learning process.

Interactive video tools must also be user-friendly to ensure effective adoption by teachers with varying levels of technological proficiency. Clear instructions and simple editing processes are essential features of effective interactive video tools (Bonnevier, 2018). Studies have shown that both students and educators generally hold positive perceptions toward the use of videos in teaching and learning, as these tools promote flexibility, autonomy, and active engagement (Gedera & Zalipour, 2018).

Interactive videos offer several pedagogical advantages, including learner control, branching scenarios, and personalized learning pathways. They allow learners to make decisions, observe consequences, and engage with content dynamically, thereby enhancing motivation and immersion (Murray, 2017). Additionally, interactive videos are compatible with multiple devices, making them accessible through smartphones, tablets, and computers. Their flexibility enables integration into both classroom-based and online learning environments as standalone microlearning resources or as part of a broader digital course.

Research supports the effectiveness of interactive videos in improving learner engagement, retention, and skill acquisition. Studies have shown that annotated and interactive video modules enhance self-study, promote reflection, and lead to higher retention rates compared to traditional video instruction (Benkada & Moccozet, 2017). Furthermore, the combination of self-paced e-learning environments with interactive videos has been found to foster self-regulated learning behaviors and learner responsibility (Papadopoulou & Palaigeorgiou, 2016).

Learner–content interaction remains a critical element of online education. Web-based technologies such as blogs, wikis, video-sharing platforms, and Open Educational Resources have significantly expanded opportunities for meaningful interaction between learners and instructional content (Habulan, 2016). Consistent with national goals, the Department of Science and Technology (2016) emphasized the importance of using interactive instructional materials to enhance student interest and global competitiveness.

Empirical studies further support the effectiveness of interactive video approaches. Langam (2015) found a significant difference in student performance between traditional instruction and interactive video-based teaching, with the latter demonstrating superior effectiveness. Features such as interactive video quizzing allow educators to assess understanding, provide immediate feedback, and promote mastery learning (Kaltura, 2015). Complementing traditional teaching methods with video-based instruction has also been shown to enhance higher-order thinking skills and critical engagement among learners (Resurreccion, 2014; June et al., 2014).

Lastly, while the integration of interactive video presents numerous benefits, the technological and pedagogical needs of teachers vary across disciplines. Addressing these needs remains a critical challenge in online education. The development of flexible, teacher-centered technologies will significantly influence the quality and acceptance of online teaching modalities in the future (Simon, 2012).

Domains of Bloom's Taxonomy

Bloom's Taxonomy is a widely recognized framework that classifies learning outcomes according to the cognitive processes and competencies educators intend to develop among learners. It provides a structured hierarchy for organizing educational objectives and assessing learning outcomes across different domains. In the cognitive domain, learning progresses from lower-order to higher-order thinking skills, traditionally ranging from knowledge to evaluation (Lucas & Corpuz, 2014).

Learning in the cognitive domain begins with the acquisition of factual information, rules, principles, and definitions (knowledge), which serves as the foundation for understanding (comprehension). Demonstrated comprehension is reflected in the learner's ability to apply acquired knowledge to real-life or problem-based situations (application). Deeper understanding is achieved when learners break down concepts into constituent

elements to examine relationships and patterns (analysis). Higher levels of cognition are attained when learners integrate and reorganize learned elements to form new ideas or solutions (synthesis). At the highest level, learners evaluate information by making informed judgments based on established criteria and evidence (evaluation) (Lucas & Corpuz, 2014).

The affective domain focuses on learners' attitudes, emotions, values, and motivations. It addresses how individuals respond emotionally to learning experiences and internalize values that influence behavior. This domain is organized into five hierarchical levels: receiving, responding, valuing, organization, and characterization. The progression reflects increasing levels of internalization, moving from basic awareness and willingness to receive stimuli to the consistent integration of values into one's belief system and actions (The Peak Performance Center, 2020).

The psychomotor domain encompasses physical movement, coordination, and the use of motor skills. The development of psychomotor skills requires repeated practice and is typically assessed in terms of accuracy, speed, precision, and technique. Skills within this domain range from simple manual tasks to complex, coordinated actions involving advanced motor control. The psychomotor domain is commonly classified into several levels, including perception, set, guided response, mechanism, complex overt response, adaptation, and origination, which describe a learner's progression from basic awareness and imitation to skill mastery and creative motor performance (Big Dog and Little Dog's, 2015).

METHODOLOGY

This study employed a descriptive pretest–posttest design to examine the effectiveness of interactive videos in teaching Home Economics to third-year Bachelor of Technology and Livelihood Education (BTLED) students at Batangas State University–San Juan Campus. The participants were 30 third-year BTLED students enrolled in Home Economics during the first semester of Academic Year 2020–2021, selected via purposive sampling due to low prior performance, comprising 3 males and 27 females. Data were collected using documentary analysis, a teacher-made pretest and posttest, and a structured questionnaire. Academic records were reviewed to describe student performance, the pretest and posttest measured learning outcomes before and after interactive video instruction in Food and Nutrition, and the questionnaire assessed the effects of interactive videos on the cognitive, affective, and psychomotor domains using a four-point Likert scale. All instruments were validated by experts. Data were analyzed using frequencies, percentages, rankings, weighted mean, and a paired-samples t test to determine significant differences between pretest and posttest scores.

RESULTS AND DISCUSSION

Features Of Interactive Videos As Applied To Teaching Home Economics

Research suggests that interactive videos significantly enhance student learning compared to traditional linear videos. Linear videos offer limited interactivity, typically allowing only play, pause, rewind, or fast-forward, which restricts engagement (Benkada & Moccozet, 2017). Interactive videos, however, provide navigation options, reflection breaks, and decision-making opportunities, promoting active learning, self-directed study, accelerated skill acquisition, and improved retention. They also allow learners to experience the consequences of their decisions, supporting both success and productive failure (Murray, 2017).

Effective interactive videos incorporate features that actively engage learners. Interactive video paths enable personalized learning choices, increasing attention and motivation. Embedded video quizzes allow assessment at different cognitive levels in line with Bloom's Taxonomy. Hotspots create clickable areas linking to supplementary information, while video clipping ensures lessons remain concise and focused (Bevan, 2019). Captions, combined with clear audio and visuals, enhance comprehension. Gamified activities introduce points, badges, or interactive challenges, sustaining engagement throughout the lesson (Imran, 2019). Learner analytics provide insights into usage patterns and performance, and multi-device compatibility ensures access across desktops, laptops, and mobile devices (Murray, 2017; Pandey, 2019).

These features collectively maximize the potential of interactive videos, making them a more engaging and effective instructional tool than traditional videos. By allowing learners to control their experience, interact with content, and receive immediate feedback, interactive videos support deeper learning and promote skill mastery in educational contexts.

Facilitative Effect Of Interactive Videos In The Three Domains Of Learning

Cognitive domain

Table 1: Cognitive domain development of students in learning home economics lessons through interactive videos

The interactive videos helped me to…	Weighted Mean	Verbal Interpretation	Rank
1. Arrange the step by step procedures in writing a recipe.	3.57	To a Very Great Extent	6
2. Recognize the different kitchen tools and equipment.	3.67	To a Very Great Extent	2.5
3. Explain the functions of different kitchen tools and equipment.	3.60	To a Very Great Extent	5
4. Identify the proper tool/s or equipment in performing kitchen task.	3.70	To a Very Great Extent	1
5. Compare and contrast different methods of cooking.	3.67	To a Very Great Extent	2.5
6. List factors to be considered in planning food or menu planning.	3.53	To a Very Great Extent	7
7. Discuss the advantages and disadvantages of the different methods of cooking food.	3.47	To a Very Great Extent	8
8. Summarize the procedures in creating a menu plan.	3.43	To a Very Great Extent	9
9. Judge the quality of a recipe according to the prescribed format.	3.33	To a Very Great Extent	10
10. Create an original food recipe.	3.63	To a Very Great Extent	4
Composite Mean	3.56	To a Very Great Extent	

Table 1 presents the cognitive development of Home Economics students following the use of interactive videos. Identifying proper tools and equipment received the highest weighted mean of 3.70 (“to a great extent”), corresponding to the analysis level of Bloom’s Taxonomy. This indicates that interactive videos facilitate comprehension and application, supporting findings that video-based activities enhance critical thinking and engagement among tertiary students (June, Yaacob, & Khar Kheng, 2014).

Indicators such as comparing and contrasting cooking methods and recognizing kitchen tools and equipment both had a weighted mean of 3.67 (“to a very great extent”). The former represents the analysis level, while the latter aligns with the knowledge level, suggesting that interactive videos improve both retention and analytical skills, consistent with evidence that interactive videos accelerate skill acquisition and increase retention compared to traditional videos (Benkada & Moccozet, 2017).

Lower-ranked objectives included discussing advantages and disadvantages of cooking methods (weighted mean = 3.47, understanding level), summarizing procedures (weighted mean = 3.43, synthesis level), and judging quality (weighted mean = 3.33, evaluation level). These results suggest that interactive videos are effective for foundational and analytical skills but may require complementary strategies to fully develop higher-order cognitive abilities, in line with constructivist and learner-centered pedagogical principles (Corpuz, 2015; Resurreccion, 2014; Habulan, 2016).

To address these lower-ranked objectives, teachers may implement innovative instructional strategies and classroom-based action research to enhance higher-order thinking skills (Hermida, 2020). Overall, the cognitive domain achieved a composite mean of 3.56 ("to a very great extent"), indicating that interactive videos support learning across both lower- and higher-order cognitive levels. This finding aligns with previous studies demonstrating that interactive video approaches outperform traditional teaching methods in improving student performance (Langam, 2015).

Affective domain

Table 2: Affective domain development of students in learning home economics lessons through interactive videos

The interactive videos helped me to…	Weighted Mean	Verbal Interpretation	Rank
1. Follow instructions in writing a meal plan/ menu plan.	3.77	To a Very Great Extent	2.5
2. Organize the different kitchen tools and equipment by classification.	3.53	To a Very Great Extent	4
3. Describe the difference between kitchen tools and kitchen equipment.	3.80	To a Very Great Extent	1
4. Select a good kitchen tools from a defected kitchen tools.	3.50	To a Very Great Extent	9
5. Propose ways on how to be responsible by taking care of the kitchen tools and equipment.	3.40	To a Very Great Extent	10
6. Integrate safety in doing tasks in the kitchen.	3.57	To a Very Great Extent	5.5
7. Share to other the different types of cooking methods.	3.53	To a Very Great Extent	7.5
8. Justify the significance of following a good recipe.	3.57	To a Very Great Extent	5.5
9. Answer questions about different cooking methods.	3.53	To a Very Great Extent	7.5
10. Practice proper steps in writing a good recipe.	3.77	To a Very Great Extent	2.5
Composite Mean	3.60	To a Very Great Extent	

Table 2 presents the affective development of Home Economics students using interactive videos. Describing differences ranked highest with a weighted mean of 3.80 ("to a very great extent"), reflecting the valuing level of the affective domain. This suggests that interactive videos foster learners' acceptance and articulation of concepts, consistent with findings that video-based activities sustain engagement and interest (June, Yaacob, & Khar Kheng, 2014).

Indicators such as following instructions in writing a meal or menu plan and practicing proper steps in recipe writing both had weighted means of 3.77 ("to a very great extent"), corresponding to the receiving and responding levels. These results indicate that interactive videos support both the reception of instructions and active participation. Features that allow learners to control the learning experience, make decisions, and observe consequences contribute to self-directed engagement (Murray, 2017; Papadopoulou & Palaigeorgiou, 2016).

Lower-ranked objectives included sharing cooking methods, answering questions about cooking methods, selecting appropriate kitchen tools, and proposing ways to responsibly care for kitchen tools, with weighted means ranging from 3.53 to 3.40. These correspond to the valuing, responding, receiving, and internalizing levels, highlighting that interactive videos alone may not fully develop higher-order affective skills. Enhancements such as customizable content, hotspots, gamified activities, and learner-content interaction can further strengthen engagement and facilitate deeper affective learning (Habulan, 2016).

Overall, the affective domain achieved a composite mean of 3.60 ("to a very great extent"), indicating that interactive videos effectively promote students' affective development across multiple levels. By integrating purposeful, learner-centered features, interactive videos support engagement from lower to higher levels of affective learning while providing flexibility, repeated practice, and consistent instructional delivery (Cooper & Higgins, 2014).

Psychomotor domain

Table 3: Psychomotor domain development of students in learning home economics lessons through interactive videos

The interactive videos helped me to…	Weighted Mean	Verbal Interpretation	Rank
1. Measure dry and wet ingredients to be used in cooking.	3.67	To a Very Great Extent	3
2. Construct an original recipe and menu plan.	3.50	To a Very Great Extent	8
3. Record conditions of kitchen tools and equipment.	3.63	To a Very Great Extent	4
4. Select appropriate kitchen tools in performing kitchen tasks.	3.60	To a Very Great Extent	5
5. Exercise safety in performing kitchen tasks.	3.53	To a Very Great Extent	7
6. Manipulate the amount of ingredients in a recipe according to serving.	3.57	To a Very Great Extent	6
7. Operate different kitchen equipment according to the manufacturer's instruction.	3.40	To a Very Great Extent	9.5
8. Demonstrate the right process of writing a good recipe.	3.40	To a Very Great Extent	9.5
9. Perform proper way of measuring wet and dry ingredients for cooking.	3.83	To a Very Great Extent	1
10. Exercise safety rules and regulation in doing kitchen tasks.	3.77	To a Very Great Extent	2
Composite Mean	3.59	To a Very Great Extent	

Table 3 presents the development of students' psychomotor skills in the Home Economics component using interactive videos. Performing the proper way of measuring wet and dry ingredients ranked highest with a weighted mean of 3.83 ("to a very great extent"), corresponding to the complex overt response level of the psychomotor domain. This indicates that interactive videos facilitate skill acquisition and enhance retention (Benkada & Moccozet, 2017).

Exercising safety rules and regulations during kitchen tasks ranked second (weighted mean = 3.77, "to a very great extent"), representing the mechanism level, which reflects the development of habitual, precise actions. The result suggests that interactive videos can build confidence, proficiency, and routine skill execution, supporting the use of educational videos for teaching both basic and complex skills (Bevan, 2019).

Lower-ranked objectives included constructing an original recipe and menu plan (weighted mean = 3.50, origination level), and operating kitchen equipment according to manufacturer instructions and demonstrating proper recipe-writing processes (weighted means = 3.40, mechanism and complex overt response levels). These results indicate that interactive videos alone may be insufficient to fully develop higher-order psychomotor skills and should be aligned with hands-on practice and industry standards. Digital media applications, when appropriately integrated, can support the development of these complex skills (Buendia & Vindolo, 2016; Habulan, 2016).

The lower-ranked objectives can be further improved using the innovative strategies proposed in this study, with an action plan designed to systematically enhance both student performance and teacher practice (The Glossary of Education Reform, 2013). Overall, the psychomotor domain achieved a composite mean of 3.59 ("to a very great extent"), indicating that interactive videos effectively facilitate skill development across multiple levels of the psychomotor domain. Video-based instruction has been consistently identified as a highly effective educational tool for developing practical competencies (Brame, 2014).

Significant Difference Between Pretest And And Post Test Result

Pretest results

Table 4 presents the pretest performance of Bachelor of Technology and Livelihood Education students in Home Economics prior to the use of interactive videos. The results indicate that no student performed poorly. One student (3.33%) scored below average, two students (6.67%) were average, 12 students (40%) were high performers, and 15 students (50%) were very high performers.

Overall, the class demonstrated strong prior knowledge, with a mean score of 23.10 (SD = 3.57). These results provide a useful baseline to identify areas of focus for instructional planning. Pre-assessment data not only informs teaching strategies but also supports reflective practices in improving learning outcomes (Hermida, 2020; Statistics How To, 2020).

Table 4: Pre-test performance of BTLED students in Home Economics

Score Range	Frequency	Percentage	Rank
Very High (25-30)	15	50.00	1
High (19-24)	12	40.00	2
Average (13-18)	2	6.67	3
Below (7-12)	1	3.33	4
Poor (1-6)	0	0.00	0
Total	30	100	

Post test results

Table 5: Post test performance of BTLED students in Home Economics

Score Range	Frequency	Percentage	Rank
Very High (25-30)	28	93.33	1
High (19-24)	2	6.67	2
Average (13-18)	0	0	
Below (7-12)	0	0	
Poor (1-6)	0	0	
Total	30	100	

Table 5 presents the posttest performance of Bachelor of Technology and Livelihood Education students in Home Economics after using interactive videos as a learning tool. The results show no students scoring below average. Two students (6.67%) were high performers, while the majority, 28 students (93.33%), were very high performers.

The overall posttest mean score was 28.97 (SD = 1.56), indicating a substantial improvement compared to the pretest results. These findings suggest that the use of interactive videos significantly enhanced students' understanding, engagement, and performance in Home Economics. This aligns with previous research demonstrating that video and interactive activities stimulate interaction and critical thinking among tertiary-level students (June, Yaacob, & Khar Kheng, 2014).

Comparison of the results

Table 6 shows the pretest and posttest performance of BTLED students in Home Economics. The pretest mean score was 23.10 (SD = 3.57), while the posttest mean increased to 28.97 (SD = 1.56). A paired-sample t-test indicated a significant difference between the two scores ($t = -12.40$, $df = 28$, $p < 0.05$), confirming that the improvement in performance was statistically significant.

The results demonstrate that interactive videos effectively enhanced students' learning outcomes, leading to higher and more consistent performance. The increased mean and reduced variability suggest that students not only improved overall but also achieved a more uniform understanding of the content. This improvement reflects the capacity of interactive videos to engage learners, promote active participation, and support both conceptual understanding and practical skill development.

These findings are consistent with prior research showing that interactive and video-based instruction stimulates critical thinking, retention, and self-directed learning (Benkada & Moccozet, 2017; June, Yaacob, & Khar Kheng, 2014). Overall, the significant increase in posttest scores confirms that integrating interactive videos into Home Economics instruction is an effective pedagogical strategy for enhancing student competence and engagement.

Table 6: Comparison of pretest and posttest performance of BTLED students in Home Economics

Test	Mean	Standard Deviation	T Computed	Decision	Interpretation
Pretest	23.103	3.573	-12.40088	Reject	Significant
Posttest	28.966	1.564			

df= 28 pvalue= 3.41729903035435

Proposed Innovative Activities To Enhance Home Economics Instruction

The study demonstrated that interactive videos effectively improved students' learning, particularly in remote settings. To further enhance instruction, several innovative strategies can complement interactive videos, supporting engagement, skill development, and content mastery.

Flipped Classroom. Lessons are divided into online preliminary activities and in-class sessions focused on application. Interactive videos can be integrated into both phases, leveraging features such as video paths, quizzes, hotspots, clipping, captions, gamification, learner analytics, and multi-device support.

Metacognitive Strategies. Activities promoting self-reflection, such as journals, embedded quizzes, and hotspots, enable students to monitor and regulate their own learning, fostering self-directed and higher-order thinking.

QR Codes. QR codes provide instant access to learning resources, assessments, and student portals, enhancing accessibility and device compatibility. They can also facilitate tracking of attendance and performance.

Breakout Rooms. Small online groups allow collaborative discussion and application of interactive video content, reinforcing understanding through peer interaction.

Smart Boards and Storyboarding. Smart boards enable tactile engagement with video content, while storyboarding ensures structured planning of instructional videos, particularly for procedural tasks.

Student-Created Videos. Short, five-minute videos allow learners to demonstrate competencies, practice skills, and engage in peer learning while reinforcing interactive video content.

Augmented Reality (AR) and Virtual Laboratory Simulations. AR and virtual labs provide immersive experiences that replicate equipment, tools, and procedures, supporting procedural learning and increasing engagement prior to hands-on practice.

Collectively, these strategies enhance the effectiveness of interactive videos by promoting active participation, critical thinking, and practical skill acquisition, creating a more learner-centered and technology-integrated Home Economics instruction.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this study, it can be concluded that interactive videos possess multiple features, such as video paths, embedded quizzes, hotspots, video clipping, captions, gamified elements, learner analytics, and multi-device support, which make them effective tools for teaching and learning. Their use in Home Economics facilitated learning across the cognitive, affective, and psychomotor domains and significantly improved students' academic performance. Furthermore, complementary innovative strategies—including the Flipped Classroom, metacognitive strategies, QR codes, breakout rooms, smart boards, student-created five-minute videos, augmented reality, and virtual laboratory simulations—can further enhance the instructional effectiveness of interactive videos by supporting engagement, skill development, and individualized learning. In light of these findings, it is recommended that future studies explore the technical development of interactive videos to guide educators in creating and implementing them in classroom or remote learning contexts. Additionally, interactive videos may be embedded in Learning Management Systems (LMS) to facilitate more flexible and personalized learning experiences. The proposed innovative strategies should also be presented to school management for review and potential integration into Home Economics instruction. Finally, this study may serve as a reference for future research examining the impact of interactive videos on student learning across other subjects and educational contexts.

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