

## **Effectiveness of Home Economics Learning Commons (HELCS) in Enhancing the Academic Performance of Grade 5 Learners: A Quasi-Experimental Research**

**Grace C. Endaya<sup>1</sup>, Karen A. Manaig<sup>2</sup>, Alberto D. Yazon<sup>3</sup>, John Frederick B. Tesoro<sup>4</sup>, Erica B. Tabuac<sup>5</sup>**

<sup>1</sup> Department of Education, Cabuyao City, Laguna, Philippines  
<sup>2,3,4,5</sup> Laguna State Polytechnic University, Los Baños, Laguna, Philippines

### **Abstract**

This quasi-experimental research design determined the effectiveness of the Home Economics Learning Commons (HELCS) in improving the academic performance of Grade 5 learners. It utilized the formative, summative, and post-tests as part of the research instruments. Match-pairing technique was used to determine the participants of the study. The said participants were the Grade 5 pupils from five different Cabuyao Elementary Schools. The comparison group consisted of students enrolled in the Online Distance Learning modality, while the experimental group consisted of students enrolled in the Modular Distance Learning modality. Based on the data gathered, it revealed that the mean scores in the formative test were high in both the comparison and experimental groups, while the mean scores in the summative test varied from 54-73% and were interpreted as average to near to mastery; and mean scores in the post-test ranged from 14-18.50%, considered as average to high. There was a substantial difference in the Pre-test and Post-test Mean Scores of the five participating schools' Comparison and Experimental Groups, according to the results of the Paired t-Test. Hence, the study concluded that there is a significant difference between the formative tests' mean scores of the two groups. Likewise, there is a significant difference between the post-test mean scores of the two groups. Lastly, there is a significant difference between the pre-test and post-test mean scores of each group. As a result, it was established that HELCS have a considerable positive effect on students' academic achievement.

**Keywords:** *learning commons, academic performance, Home Economics*



This is an open access article under the CC-BY-NC license.

### **INTRODUCTION**

As a result of the global disease that spread throughout the world in March 2020, distance and flexible learning became the new norm in education. This upsetting incident changed the format and content of the Department of Education (DepEd) curriculum, substituting remote learning for traditional face-to-face interaction and holding lessons on online or offline platforms. As a result, every educator needs to possess the skills necessary to be proficient as well as to accept and adapt to new advancements in education.

To meet the needs of today's educational environment, the demands of 21<sup>st</sup>-century education necessitate not only technological advancement but also the usage of digital technologies. As a result, Learning Commons (LCs) have become a buzzword in educational institutions. According to Jones

Corresponding author

Grace C. Endaya, [grace.endaya@deped.gov.ph](mailto:grace.endaya@deped.gov.ph); Karen A. Manaig, [karen.manaig@lspu.edu.ph](mailto:karen.manaig@lspu.edu.ph)

DOI: <https://doi.org/10.31098/ijtaese.v4i2.1138>

Research Synergy Foundation

**Effectiveness of Home Economics Learning Commons (HELCS) in Enhancing the Academic Performance of Grade 5 Learners: A Quasi-Experimental Research**

Grace C. Endaya, Karen A. Manaig, Alberto D. Yazon, John Frederick B. Tesoro, Erica B. Tabuac

---

(2017), Learning Commons is a hotspot of innovation, collaborative activity, and participation that emerges from the union of modern technologies with a traditional source of information.

Home economics benefits individuals, families, and the community as a whole because it teaches practical life skills. It is more crucial than ever to address pandemic and social isolation issues. Children can also be helped to adapt to these changes by receiving suitable housekeeping instruction in areas including family resource management, consumer education, food preparation and preservation, hygiene and environmental sanitation, nutrition, business, and clothes.

### **Background of the Study**

Currently, there are various educational apps that students can use, but most of them require internet connectivity. Consequently, the advancement in Information and Communication Technology (ICT) in education has undergone considerable changes in the past years. The integration of ICT in education became one of the essential tools that teachers utilized in their classes to make their lessons motivating, engaging, and meaningful. Hence, educational institutions worldwide rely on blended learning to meet the needs of all students, and learning will continue despite the pandemic's disruption to schooling. Similarly, studies on the usefulness of using Learning Commons in the subject of Home Economics had not yet been undertaken; thus, this research.

Learning commons are open spaces that promote technology, communication, and collaboration to link learners and assist them in constructing knowledge. It can help students improve their understanding and abilities in specific subjects or courses. The most up-to-date information is no longer limited to printed materials and can now be found on your phone in your pocket (McLoughlin & Lee, 2011). By sorting out printed items until only those now being circulated remain, stacks can be removed entirely or a small number placed around the room's perimeter. As a result of this space optimization, the floorplan has been dramatically freed up, allowing active learning elements to be integrated.

According to the Basic Education Learning Continuity Plan (BE-LCP), which is the result of inputs from the department's various units and field offices; advice from the Philippine Forum for Inclusive Quality Basic Education, or Educ Forum; advice from the Chairs of the House and Senate Basic Education Committees; an online survey with over 700,000 respondents; and a survey of teachers' readiness for distance learning delivery. BE-LCP addresses the most critical educational needs in the COVID-19 era, including the most critical learning competencies, multiple learning delivery modalities for teachers, school leaders, and learners, required health standards in schools and workplaces, and special activities like *Brigada Eskwela*, *Oplan Balik Eskwela*, and partnerships (DepEd, 2020).

At the moment, the only way to avoid school disruption is to use digital learning. Particularly in these trying times when the world is still under a pandemic, as classified by the World Health Organization (WHO), the only way to keep the learning going is to employ technologies like mobile phones and software applications. As a result, interactive learning in the learning commons may differ significantly from that in the classroom. Students can use the learning commons to practice critical thinking, teamwork, and design thinking abilities, which can subsequently be taken to the classroom and beyond. The degree to which students' expectations are realized influences their evaluation of the Learning Commons' quality and pleasure. As a result, perceived quality has an impact on contentment. Both perceived quality and satisfaction contribute to psychological impacts that lead to behavioral changes and potential benefits, such as time savings, reduced effort, improved grades, enhanced problem-solving skills, and improved learning outcomes (Woo, 2019).

Lastly, the resources available for teaching Home Economics are insufficient to fulfill the needs of 21st-century students. As a result, the goal of this research is to create a Home Economics Learning Commons (HELCS), which, unlike DepEd Modules, will only focus on Home Economics for elementary students. This will act as an online and offline virtual center for learning and assessment materials needed in teaching, HE in public elementary schools, with the goal of improving the academic performance of Grade 5 students.

### **Statement of the Problem**

This study determined the effectiveness of the Home Economics Learning Commons (HELCS) in improving the academic performance of Grade 5 learners. Specifically, it sought to answer the following questions:

1. What are the mean scores of the two groups in the pre-test, formative, and post-test?
2. Is there a significant difference between the mean scores obtained by the two groups from the given formative tests?
3. Is there a significant difference between the post-test mean scores of each group?
4. Is there a significant difference between the pre-test and post-test mean scores of each group?

### **Hypotheses:**

This study posited the following hypotheses:

There is no significant difference between the post-test mean scores of each group.

There is no significant difference between the pre-test and post-test mean scores of each group.

### **LITERATURE REVIEW**

In the study of Camilleri & Camilleri (2019), students claim that using educational applications has improved their competency. Together, in teams, they developed relative and cooperative abilities. Thus, mobile applications for educational institutions have already greatly aided pupils, making the studying process entertaining and simple. Roy (2017) mentioned that the various app features increase engagement through the knowledge-based act.

Further, Roy (2017) explained the benefits of mobile learning apps and how they have altered the educational landscape. Students are being led further toward using mobile phones, specifically a smartphone, for all purposes in this constantly changing time. The capacity to access any information from anywhere puts the entire world at the kids' fingertips. It reduces the likelihood of collecting information in a real library. Therefore, a mobile phone could be handy for a variety of things. The data is readily accessible thanks to mobile applications. Every mobile application has a unique characteristic and a range of services. Learning is a continuous process, and e-learning is currently the main focus.

Another online article by Alcock presented a few related concepts concerning offline learning and its benefits to its example company educators and remote learners (2017). He began by describing the distinction between online and offline learning. He defines offline learning as a disconnected state in which students study using various devices, such as cell phones, laptops, and tablets, without being online. The related ideas concerning offline learning are added to these. He claimed that rural students are finding it difficult to acquire course materials because of a lack of internet connectivity. For everyone who does not have access to the internet, whether at home or when traveling, even those who are working in remote rural areas or in places on the planet where the connection is impossible, offline e-

**Effectiveness of Home Economics Learning Commons (HELCS) in Enhancing the Academic Performance of Grade 5 Learners: A Quasi-Experimental Research**

*Grace C. Endaya, Karen A. Manaig, Alberto D. Yazon, John Frederick B. Tesoro, Erica B. Tabuac*

---

learning has emerged as a viable option. The availability of content for disconnected learners is one of the author's additional three advantages of learning offline. He tried out a variety of jobs where the workers were located in remote areas of the world and relied on offline learning materials to complete their education (Alcock, 2017).

As the years go by, technology advances along with the apps that everyone uses, whether they are online or offline. Educational apps that do not require data or WIFI are part of the ongoing evolution of apps. Additionally, excellent academic resources are always accessible and have high learning potential. Professionals use computer programming to create code that specifies how a computer, application, or software program behaves (Stokdyk, 2020). Computer programming is essentially a set of instructions that make certain actions possible. If you are unsure of a computer programmer, they are experts who write and test the code that allows software and applications to communicate with computers.

E-learning has long been accepted by educational institutions and authorities due to its efficacy. Many schools have fully embraced the development of educational technology and added computer-based or device-based learning to lectures to improve them. Therefore, technology has taken the role of notebooks, and other lectures are now delivered electronically. According to Espinosa (2016), digital advancements have allowed us to learn outside of the traditional classroom setting via the internet rather than merely traditional face-to-face instruction. With both classic and contemporary methods of instruction, students can learn more. They can also access extra resources and lessons online.

The Philippines should not fall behind other countries in adopting educational technology because the effective use of computers, telephones, gadgets and other technologies may significantly improve students' learning ability. Studies have demonstrated that a more informal setting helps both children and adults understand their lectures. As emphasized by Isla (2020), most schools have adopted online teaching and learning to protect the kids and stop the transmission of the virus due to the rising cases of Covid-19 in the Philippines. Online classrooms combine synchronous and asynchronous learning. Schools have also chosen their own platforms for teaching kids electronically, despite the fact that many pupils, instructors, and parents are not enthusiastic about this approach due to its many challenges.

They claimed in a published post that interacting with technology and its many advancements have become a vital component of education as we accept their arrival and use them to improve our daily lives. We may anticipate more from modern education, which chooses to conduct a quick, effective, and goal-focused learning phase for pupils. The learning process and learning outcomes have currently been improved by technology. Educational apps encourage excellent learning with captivating images, actions, and systems. It is only one of several trendsetters that improved our educational system while using rapid technological advances. With the accessibility of today's smartphones, laptops, tablets, and other technology, there are study apps that help students to learn (Isla, 2020).

All you have to do in the classroom is show up, listen, and learn. You are in charge of choosing the apps and resources you will need to utilize for online learning to participate, turn in activities and assignments, and learn from the class. Online education pushes you to be creative and come up with alternate approaches using materials you already have at home. A mobile development program was recently added to a senior high school curriculum in response to the Philippines' expanding platform-based innovations. A recent report announced a mobile development initiative for the academic year 2018–2019. It includes early instruction in the IT skills that are most in-demand (Umali, 2019).

Bulletin (2020) stated that as long as there is a reliable internet connection, students can access the learning content whenever and wherever they want, at any pace. He continued using learning apps,

he continued, encouraging students to have a more active role in promoting their own learning. Facebook and Skype are the simplest and most user-friendly online learning platforms in the Philippines. It is hardly surprising given that a 2019 survey found that the Philippines has the highest internet usage rates worldwide, with residents using the internet on average for 10 hours and 2 minutes daily in 2018. Teachers can communicate with their pupils in real-time using the live feature of apps.

Further, Bulletin (2020) suggested that learning management systems (LMS) like Edmodo and MOODLE will be able to give us the right learning environment in terms of efficiency and efficacy. A learning management system is a piece of software that acts as a contemporary substitute classroom for online learners registered in a course. Teachers can post extra readings and video resources to Edmodo, an LMS that acts as a social learning network. It involves students in online discussions and classroom activities, like timed recitation exercises. Through its single database, educators may track the growth of their students. Numerous difficulties would be presented by the change in the teaching platform.

Computer science educators are concerned and dismayed by pupils' lack of understanding of programming. To provide students the grounding they need to create accurate software. This concern has inspired inquiries into topics that programming students do not comprehend. Computer programming is a crucial skill for students studying computer science and related fields. However, first-year students' lack of programming understanding worries and displeases computer science lecturers (Rodrigo, Tabanao, Lahoz, & Jadud, 2009).

In order to connect the most talented entry-level programmers in the Philippines with the greatest programmers' employers in the globe, Cacho (2019) noted that the Coders Guild performs skills-based examinations. Software engineering is the most sought-after IT position, followed by data analyst and data scientist, according to a report by paysa.com. There are not enough qualified individuals to support the nation's industry. There is a decreasing supply of programmers in the Philippines. Gurango claims that from 2019 to 2020, there will be a 90% decrease in computer science and IT degrees. From 1,014 institutions in 2011, there were only 640 schools in the nation providing these courses as of 2018. With this, only 4% of the 1,000 college graduates who completed these courses were qualified and employable for an entry-level job as a coder, while 33% were trainable for programming. However, only 63% of college grads were able to code. It was stressed that one of the solutions to expanding the nation's talent pool is to provide these courses at the senior high school level (Gurango, ).

The scientific community is challenged to investigate the socio-educational potential of this universal phenomenon because mobile devices are currently the most potent and pervasive method of social connection. If we consider that children and young people are the most frequent users of these tools—for which many educational apps are designed—this dilemma becomes even more significant. Mobile phones can be used effectively in the classroom for several reasons, including their inherent ability to enhance learning due to factors like portability and ubiquity, the useful communication they enable, and their ease of use. Another one of its excellent qualities is immediate feedback, which allows students to give and receive feedback on their learning while using small "bits" of information much more effectively. These features increase students' knowledge of their schedules, enabling self-awareness and self-regulation of their learning, but they also make them more susceptible to abuse (Crompton, 2013).

Crompton (2013) mentioned that the first testing device was created in the 1920s to assist pupils independently testing and practicing their knowledge. Since then, technology has been used to boost learning. Today, practically every school uses a Learning Management System (LMS), such as the well-

**Effectiveness of Home Economics Learning Commons (HELCS) in Enhancing the Academic Performance of Grade 5 Learners: A Quasi-Experimental Research**

*Grace C. Endaya, Karen A. Manaig, Alberto D. Yazon, John Frederick B. Tesoro, Erica B. Tabuac*

---

known open-source solution Moodle, and e-learning and Massive Open Online Courses (MOOC) are very popular. These e-learning options are now replaced by mobile learning (m-learning) and ubiquitous context-aware learning (u-learning). The method we learn has changed significantly along with the technologies we use. Likewise, social behavior, expectations, and values have shaped pedagogies throughout history, but learning has always been crucial. She also emphasizes that technology-assisted learning is a marriage between technology and learning, not simply one or the other, because it is where its core lies. By examining the past, it is clear that technology and education have always been closely related. This connection has persisted despite changes in popular pedagogies. The following sections cover the most significant technological advancements in enhancing learning based on the outline provided (Crompton, 2013).

Mobile learning is more than just e-learning, which is completed by transferring e-learning materials to handheld devices. The principles of mobile design should be the foundation for developing mobile learning products. Instead of delivering the complete lesson, mobile learning materials should be given in bite-sized portions. These bite-sized or "nugget-sized" portions of mobile learning information are referred to as such. Additionally, it emphasizes how mobile learning should be designed to enhance the learning process while considering the limitations of mobile devices. Mobile technology should be used as a learning facilitator rather than just a means of distributing learning materials. They also mentioned the necessity for adaptable materials that can be altered to meet the needs of the student, materials that were designed with the learner in mind, quick and easy interactions, and device and interaction designs that took into account various standards and devices (Parsons, Ryu, & Cranshaw, 2007).

The results of Chen's (2007) investigation show that students' levels of school satisfaction vary. A novel type of learning engagement is offered by m-learning. However, there is no evidence connecting learners' mobile learning with their various levels of learning satisfaction. The findings demonstrated that the quality of mobile technology promoted students' pleasure with apps and tablets and active course engagement, which in turn led to their various levels of learning satisfaction. The findings suggested that m-learning plays a crucial role in facilitating various forms of interaction in the classroom to encourage course engagement among primary school students. They proposed that m-learning may be a suitable medium for teachers to communicate with students and stimulate their learning in the collective primary education setting if it could support good interaction quality.

We must be aware of what is crucial for everyone who uses media devices, such as mobile phones, not only students, as new applications continue to emerge on a regular basis. A practical notion, particularly in contemporary contexts, is to create a specific application that instructs users in media and information literacy. The growing scholarly interest in media literacy education may initially appear unproblematic. The academic literature demonstrates that media literacy instruction is a complex and divisive subject. A successful educational process must include the development of information literacy abilities. The capacity to assess the amount of information required, access it effectively and efficiently, and critically assess information and its sources are all examples of information literacy skills (Farmer & Henri, 2018).

One way to close the information literacy skills gap might be through the use of multimedia learning. Information literacy instruction includes teaching students the skills necessary to manage the complexity of research, the process of gathering and integrating information from different sources, and using technology in the research process (Cox & Lindsay, 2008). Multimedia is a means of conveying

words, such as spoken language or printed text, along with images, such as graphics, photos, animations, or videos (Mayer, 2018). Multimedia can also be defined as a computer-based content presentation that combines written or spoken text, sound, and visuals into a distinct learning package.

For instance, computational mathematics courses require computer programming skills. Mathematical issues are converted into computer programs in the course. The software is used to extract the solution to a given problem. A computer program is not simple to create. Another talent is required for this one, such as creating algorithms, programming in a particular language, and comprehending program syntax. The majority of students had never programmed before. To attain an advanced level in computer programming, basic skills are required. Students must gradually learn a programming language's fundamental grammar, structure, and style. These frequently cause pupils to feel difficult (Baist & Pamungkas, 2017).

Baist & Pamungkas (2017) stressed that the use of mobile devices for learning is a relatively recent development in the Philippines' basic education system, and the ICT-focused Department of Education rules date from a time before the widespread adoption of mobile devices. It is crucial for education leaders, policymakers, and school administrators to have the courage to create an innovation and difference at the start of senior high school education in the Philippines in order to make mobile devices viable in the senior high school environment. Such regulations specifically must encourage the meaningful integration of mobile devices in teaching and learning and expand their scope, assist educators in creating cutting-edge methodologies and suitable pedagogies for the use of mobile devices, and provide recommendations for schools aiming to use them.

According to Marcial (2014), teacher educators have a very high level of acceptance for creating mobile classroom management. He concluded that teacher educators in Central Visayas, Philippines, would enthusiastically adopt the suggested instructional tools and incorporate mobile learning into their teaching and learning activities. Perceived usefulness and perceived ease of use are significant variables linked to the behavioral intention to adopt any technology. According to the Technology Acceptance Model, the suggested mobile-APP (m-APP) is very likely to be accepted. The recommended characteristics should also be taken into account to increase the likelihood that the proposed m-APP will be adopted.

Variables such as industry demand, a favorable attitude toward computing degree programs, and the perception of career chances are some of the things that draw students to enroll in computing degree programs. One of the essential and sought-after talents for students studying computing is programming (e.g., Computer Science, Information Technology, and Information Systems). They added that computer programmers were among the highest-paid occupations for recent graduates in the Philippines (Bringula, 2017).

Due to the height of the pandemic in the years 2020–2021, certain schools in the Philippines opted to implement online education. Many students benefit from e-learning, particularly those with access to the internet and a mobile phone. Students can still learn even though there are no in-person sessions because many applications are available for educational purposes. People of all ages can gain a lot from mobile applications, especially in our daily lives. Access to mobile learning is greater at any time and at any place. It helps students by giving them tools to enhance their study habits, knowledge, and skill development. According to a particular study, mobile learning is significantly more efficient and instructional than books because it is more available and has access to more information.

**Effectiveness of Home Economics Learning Commons (HELCS) in Enhancing the Academic Performance of Grade 5 Learners: A Quasi-Experimental Research**

*Grace C. Endaya, Karen A. Manaig, Alberto D. Yazon, John Frederick B. Tesoro, Erica B. Tabuac*

---

Modern mobile technologies are continually evolving. Their rising availability and affordability have significantly altered peoples' lifestyles, jobs, and even educational processes. Mobile learning, often known as online education, is now a common practice in schools. Mobile learning is a fast-growing discipline that offers new opportunities to enhance learning, particularly in a distance education (DE) setting. Mobile technology's portability enables learners to collaborate and think creatively. Technology has the potential to foster collaboration, enhance problem-solving abilities, and encourage critical thinking when appropriately utilized. Agrees with this notion and claims that mobile learning helps students build social relationships, encourages collaborative learning, interactivity, and quick feedback, as well as peer cooperation, and enhances knowledge structure, learning outcomes, and motivation. The usage of mobile technology boosts students' motivation to complete educational tasks and encourages them to become more self-directed in their learning, which is more evidence that students are more receptive to engaging in learning while using it. Because it has more information and is more accessible, mobile learning is, according to one research, significantly more efficient and educational than reading books.

Thus, these new learning applications are now possible because of the growth of mobile devices and mobile technology. Applications for mobile technology extend existing educational platforms, promote distant learning, and use environments outside of the classroom to support higher education. Mobile applications seem to be quite beneficial, particularly with the present way of learning. It aids pupils in managing their academic workload. Numerous educational applications cover various topics and courses, including Math, English, Science, and Home Economics subjects. Developers have developed numerous reviewing applications to aid students in improving their reasoning and course-related skills, hence, this study.

## **RESEARCH METHOD**

### **Research Design**

This study utilized a quasi-experimental design in which the dependent variable is measured once before and after the intervention was implemented (Nachmias and Nachmias, 2004).

### **Participants of the Study and Sampling Technique**

The participants of the study were the 357 Grade 5 *Edukasyong Pantahanan at Pangkabuhayan* (Home Economics) learners from public elementary schools in the Schools Division of Cabuyao City SY 2021-2022.

To group the participants, they were split into two through the match-pairing technique. The experimental group was under online-distance delivery learning. It utilized the developed Home Economics Learning Commons (HELCS), while the control group utilized modular-distance learning using the hard copies of the learning packets developed by the Department of Education in Teaching Home Economics for Grade 5.

### **Research Instrument**

As to the research instruments, the Department of Education Self-Learning Modules were made available in print and digital format as vital research instruments. Then the mobile application was developed and installed on computer devices and mobile phones bearing the name Home Economics Learning Commons (HELCS), which contained the topics of the first quarter of the subject Home



**Effectiveness of Home Economics Learning Commons (HELCS) in Enhancing the Academic Performance of Grade 5 Learners: A Quasi-Experimental Research**

Grace C. Endaya, Karen A. Manaig, Alberto D. Yazon, John Frederick B. Tesoro, Erica B. Tabuac

Economics for Grade 5. Likewise, standardized validation forms for validating the HELCs were used prior to their implementation.

The pre-test, formative test, and post-test, which the researcher produced, were also used as instruments in determining the effectiveness of HELCS. The participant's performance in the pre-test, post-test, and formative tests was determined using the mean and standard deviation of the students in the comparison and experimental groups. An independent t-test was used to determine the significant difference between the comparison and experimental groups in the formative and post-test mean scores. Cohen's D was used to determine the significant difference between the two groups' results of the pre-test, post-test, and formative tests.

**FINDINGS AND DISCUSSION**

The results revealed that mean score performance in the formative test was *high* in both the comparison and experimental groups; mean score performance in the summative test ranged from 54.00–73.00%, which is interpreted as average to closely approximating mastery; and mean score performance in the post-test ranged from 14.00–18.50%, interpreted as *average to high*. Therefore, it was concluded that the HELCs have a strongly positive effect on the participants' academic achievement. The findings affirm with Espinosa (2016) that we are no longer limited to traditional face-to-face learning; thanks to technological advancements and developments, we may now learn outside of the classroom through the internet. Students can learn more using classic and new teaching methods and the internet and mobile applications, which provide more information and lessons.

The computed Cohen's d implies a "large" effect size between the mean scores in the formative, summative, and post-test of the comparison and experimental groups. Hence all null hypotheses were rejected. The mean scores of the comparison and experimental groups of the five participating schools were significantly different in the formative, summative, and post-test.

According to the Philippines' expanding mobile advancements, a mobile development program was recently integrated into a senior high school curriculum in response to Umali (2019). According to a recent study, a mobile development program has been introduced for the 2018-2019 school year. It includes early teaching of the most important information technology skills. Table 1 presents the result of the test difference between the pre-test and post-test mean scores of the comparison and experimental groups.

Table 1. Test Difference between the Pre-test and Posttest Mean Scores of Comparison and Experimental Groups

School	n	Group	Test	Mean	SD	t-value	df	Mean	Cohen's	Effect
								Difference	d	Size
A	29	Comparison	Pre-test	11.00	3.11	-8.213 **	28	-4.103	1.40	Large
			Posttest	15.10	2.74					
		Experimental	Pretest	11.00	3.11					
			Posttest	18.24	1.35					
B	20	Comparison	Pre-test	10.35	1.73	-9.273 **	19	-3.950	1.94	Large
			Posttest	14.30	2.30					
		Experimental	Pretest	10.35	1.73					
			Posttest	18.00	1.69					
C	20	Comparison	Pre-test	10.15	2.30	-8.542 **	19	-4.350	2.30	Large

**Effectiveness of Home Economics Learning Commons (HELCS) in Enhancing the Academic Performance of Grade 5 Learners: A Quasi-Experimental Research**

Grace C. Endaya, Karen A. Manaig, Alberto D. Yazon, John Frederick B. Tesoro, Erica B. Tabuac

School	n	Group	Test	Mean	SD	t-value	df	Mean	Cohen's	Effect
								Difference	d	Size
D	15	Experimental	Posttest	14.50	1.36	-15.530 **	19	-7.150	3.41	Large
			Pretest	10.15	2.30					
			Posttest	17.30	1.87					
		Comparison	Pre-test	11.33	2.47	-9.431 **	14	-4.800	2.02	Large
			Posttest	16.13	2.29					
		Experimental	Pretest	11.33	2.47	-10.603 **	14	-6.533	3.07	Large
Posttest	17.87		1.73							
E	24	Comparison	Pre-test	10.42	2.12	-10.860 **	23	-4.833	2.42	Large
			Posttest	15.25	1.87					
		Experimental	Pretest	10.42	2.12	-19.459 **	23	-7.583	4.13	Large
			Posttest	18.00	1.50					

Table 1 revealed that there is a significant difference in the pre-test and post-test mean scores of the Comparison and Experimental Groups of the five participating schools, according to the results of the paired sample t-test. The findings affirm Crompton (2013) that mixing technology and learning, rather than either one or the other, is at the heart of technology-assisted learning. Looking back, it is clear that technology has always been inextricably related to education and that interest has remained consistent despite changes in popular pedagogies. As a result, many students benefit from e-Learning, particularly those with access to a mobile phone and an internet connection. Thanks to various educational programs, students can learn even if they do not have access to face-to-face classes.

**CONCLUSION**

There was a substantial difference in the pre-test and post-test mean scores of the five participating schools' Comparison and Experimental Groups, according to the results of the Paired t-Test. Hence, the study concluded that there is a significant difference between the formative tests' mean scores of the two groups. Likewise, there is a significant difference between the post-test mean scores of the two groups. Lastly, there is a significant difference between each group's pre-test and post-test mean scores. As a result, it was established that HELCS have a considerable positive effect on students' academic achievement. Based on the findings and conclusions of the study, the recommendations were offered:

1. Teachers are encouraged to utilize the developed Home Economics Learning Commons to increase student's engagement in the lesson and academic performance.
2. School administrators may consider crafting training programs to capacitate teachers in developing teaching tools that will address the needs of 21<sup>st</sup>-century learners.

Future researchers may conduct similar studies on testing the effectiveness of a learning commons in other subjects.

**REFERENCES**

Alcock, M. (2017, November 29). *3 Big Advantages Of Offline Learning With xAPI Analytics*. Retrieved from eLearning Industry: <https://elearningindustry.com/challenges-of-offline-learning-xapi-analytics-3-advantages>.

Baist, A., & Pamungkas, A. S. (2017, October). *Analysis of Student Difficulties in Computer Programming*. Retrieved from:

**Effectiveness of Home Economics Learning Commons (HELCS) in Enhancing the Academic Performance of Grade 5 Learners: A Quasi-Experimental Research**

Grace C. Endaya, Karen A. Manaig, Alberto D. Yazon, John Frederick B. Tesoro, Erica B. Tabuac

---

- [https://www.researchgate.net/publication/323548936\\_Analysis\\_of\\_Student\\_Difficulties\\_in\\_Computer\\_Programming](https://www.researchgate.net/publication/323548936_Analysis_of_Student_Difficulties_in_Computer_Programming)
- Bringula, R. (2017, March). *Factors Affecting Failing Programming Skill Examination of Computing Students*. Retrieved from ResearchGate: [https://www.researchgate.net/publication/280153094\\_Factors\\_Affecting\\_Failing\\_Programming\\_Skill\\_Examination\\_of\\_Computing\\_Students](https://www.researchgate.net/publication/280153094_Factors_Affecting_Failing_Programming_Skill_Examination_of_Computing_Students)
- Bulletin, M. (2020, March 13). *E-learning: What it is, how it works*. Retrieved from <https://mb.com.ph/2020/03/13/e-learning-what-it-is-how-it-works/>
- Cacho, K. O. (2019, May 7). *'Inspire kids to be programmers'*. Retrieved from SunStar Cebu: <https://www.sunstar.com.ph/article/1804556/Cebu/Business/Inspire-kids-to-be-programmers>
- Camilleri, M., & Camilleri, A. C. (2019, August). *The Students' Readiness to Engage with Mobile Learning Apps*. Retrieved from ResearchGate: [https://www.researchgate.net/publication/335338667\\_The\\_Students'\\_Readiness\\_to\\_Engage\\_with\\_Mobile\\_Learning\\_Apps](https://www.researchgate.net/publication/335338667_The_Students'_Readiness_to_Engage_with_Mobile_Learning_Apps)
- Chen, M. (2007). Retrieved from <https://core.ac.uk/download/pdf/56695006.pdf>
- Cox, N. C., & Lindsay, E. (2008). *Information literacy instruction handbook*. Retrieved from <https://repository.usfca.edu/cgi/viewcontent.cgi?article=1021&context=diss>
- Crompton, H. (2013). *A historical overview of mobile learning: toward learner-centered education*. Retrieved from eric.ed.gov: <https://files.eric.ed.gov/fulltext/EJ1174817.pdf>
- Espinosa, J. P. (2016, September 17). *Learning with the help of technology*. Retrieved from The Manila Times: <https://www.manilatimes.net/2016/09/17/opinion/columnists/learning-with-the-help-of-technology/286384/amp/>
- Farmer, L. S., & Henri, J. (2018). *Information literacy assessment in K-12 settings*. Retrieved from <https://repository.usfca.edu/cgi/viewcontent.cgi?article=1021&context=diss>
- Isla, R. (2020, September 17). *The Pros and Cons of Online Learning in the Philippines – MoneySmart 2020*. Retrieved from MONEYSTART: <https://www.moneysmart.ph/articles/the-pros-and-cons-of-online-learning-in-the-philippines-moneysmart-2020/>
- Jones, A.T. (2017), "Amalgamating Information Technology With Library Services In The School Environment: A Learning Commons Transformative Model". All Theses And Dissertations. 126. <https://dune.une.edu/theses/126>
- Marcial, D. E. (2014). *ICT in Teacher Education in Region 7. Technical Report to the Commission on Higher Education-Philippine Higher Education Research Network, Silliman University, College of Computer Studies, Dumaguete City*. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1100668.pdf>
- McLoughlin, C. & Lee, M. J. W. (2011). Future learning landscapes: Transforming pedagogy through social software. *Innovate: Journal of Online Education*, 4(5). <http://innovateonline.info/?view=article&id=539>
- Mayer, R. E. (2008). *Applying the science of learning: Evidence-based principles for the design of multimedia instruction*. Retrieved from <https://repository.usfca.edu/cgi/viewcontent.cgi?article=1021&context=diss>
- Parsons, D., Ryu, H., & Cranshaw, M. (2007). *A study of design requirements for mobile learning environments. Journal of Computers*, 2(4), 1-8. doi: 10.4304/jcp.2.4.1-8. Retrieved from Eric.ed.gov: <https://files.eric.ed.gov/fulltext/EJ1174817.pdf>
-

**Effectiveness of Home Economics Learning Commons (HELCS) in Enhancing the Academic Performance of Grade 5 Learners: A Quasi-Experimental Research**

Grace C. Endaya, Karen A. Manaig, Alberto D. Yazon, John Frederick B. Tesoro, Erica B. Tabuac

---

- Rodrigo, M. T., Tabanao, E., Lahoz, M. E., & Jadud, M. C. (2009). *Analyzing Online Protocols to Characterize Notice Java Programmers*. Retrieved from Philippine Journal of Science: [https://philjournalsci.dost.gov.ph/images/pdf/pjs\\_pdf/vol138no2/pdfs/Analyzing\\_online\\_protocols.pdf](https://philjournalsci.dost.gov.ph/images/pdf/pjs_pdf/vol138no2/pdfs/Analyzing_online_protocols.pdf)
- Roy, S. (2017, August 26). *5 Benefits of Using Mobile Apps in Education*. Retrieved from eLearning Industry: <https://elearningindustry.com/mobile-apps-in-education-5-benefits>
- Stokdyk, D. (2020, April 24). *What is Computer Programming and How to Become a Computer Programmer*. Retrieved from Southern New Hampshire University: <https://www.snhu.edu/about-us/newsroom/2018/06/what-is-computer-programming>
- Umali, T. (2019, January 23). *Mobile app development for Filipino senior high students*. Retrieved from OPENGOV Asia: <https://opengovasia.com/mobile-app-development-program-for-filipino-senior-high-students/>
- Woo, H. W., Wu, J., Chen, C., Kao, Y., & Lin, H. (2019). *Review of trends from mobile learning studies: A meta-analysis*. Retrieved from eric.ed.gov: <https://files.eric.ed.gov/fulltext/EJ1174817.pdf>
- Zandbergen, P., & Scalia, S. (2019, November 27). *What Are Information Systems? - Definition & Types*. Retrieved from Study.com: <https://study.com/academy/lesson/what-are-information-systems-definition-types-quiz.html>