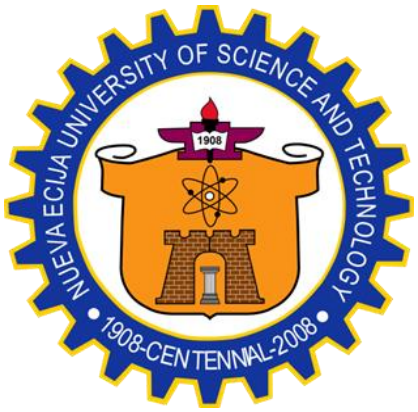
AGRILEARN: AN E-LEARNING APPROACH TO AGRICULTURAL EDUCATION



A CAPSTONE AND RESEARCH PROJECT

by:

EUGENE VAN LINSANGAN

GABRIEL MANIALONG

JHON ERIC JOCSON

LESTER JOHN LLOYD MONTE

December 2024

AGRILEARN: AN E-LEARNING APPROACH TO AGRICULTURAL EDUCATION

A Capstone and Research Project
Presented to the Faculty of the
College of Information and Communications Technology
Cabanatuan City, Nueva Ecija

In Partial
Fulfillment of the
Requirements for the degree
Bachelor of Science in Information Technology
With Specialization in
Web Systems Technology

by:

EUGENE VAN LINSANGAN

GABRIEL MANIALONG

JHON ERIC JOCSON

LESTER JOHN LLOYD MONTE

December 2024

Republic of the Philippines
Nueva Ecija University of Science and Technology
College of Information and Communications Technology

APPROVAL SHEET

This capstone and research project entitled **AgriLearn: An E-Learning Approach to Agricultural Education**, prepared and submitted by **Eugene Van R. Linsangan, Jhon Eric A. Jocson, Lester John Lloyd O. Monte, Gabriel P. Manialong** in partial fulfillment of the requirements for the degree, Bachelor of Science in Information Technology with Specialization in Web Systems Technology is hereby recommended for approval and acceptance.

ANGELITO I. CUNANAN, JR., MSIT
Capstone Teacher
Date: _____

RACHEL T. ALEGADO, DIT
Capstone Adviser
Date: _____

Approved in partial fulfillment of the requirements for the degree, Bachelor of Science in Information Technology with Specialization in Web Systems Technology by the Examining Committee.

ALEXANDER S. COCHANCO, MSIT
Chairman

APPLE GRACE G. OLIVEROS, MSIT
Member

ANDREW CAEZAR A. VILLEGAS, MSIT
Member

Accepted in partial fulfillment of the requirements for the degree, Bachelor of Science in Information Technology with Specialization in Web Systems Technology

ALEXANDER S. COCHANCO, MSIT
Chairman, WST
Date: _____

ARNOLD P. DELA CRUZ, DIT
Dean, CICT
Date: _____

Republic of the Philippines
_____SS.
Province of Nueva Ecija

JOINT UNDERTAKING

We, **Eugene Van R. Linsangan**, **Gabriel P. Manialong**, **Jhon Eric A. Jocson**, **Lester John Lloyd O. Monte** of all members, all of legal age, Filipino, and students of Nueva Ecija University of Science and Technology (NEUST), after having been duly sworn in accordance with law, do hereby state and depose:

1. That the undersigned are the authors/researchers of an academic project entitled *AgriLearn: An E-Learning Approach to Agricultural Education*, in partial fulfillment of the requirements for the degree of Bachelor of Science in Information Technology at Nueva Ecija University of Science and Technology (NEUST). This project was completed with the guidance and contribution of our adviser, **Angelito I. Cunanan Jr., MSIT**, and our course teacher, **Rachel T. Alegado,DIT** who are hereby recognized as co-authors of this work in acknowledgment of their valuable intellectual and professional support throughout the development of the project.
2. That the manuscript, attachments, models, system software/enterprise resource plan, source code, algorithms, or any part of the above-mentioned project have not been copyrighted, published, or are under consideration for publication prior to or upon submission thereof.
3. That the manuscript, attachments, models, system software/enterprise resource plan, source code, algorithms, or any part of the above-mentioned project have not been plagiarized, copyrighted, submitted, or published elsewhere by the authors.
4. That the College of Information and Communications Technology and the Nueva Ecija University shall not be held liable for any consequences, damages, loss of life and/or property or financial gain resulting from the authors' misrepresentation, plagiarism or inclusion of plagiarized work. Furthermore, this manuscript should be thoroughly reviewed and edited by a competent editor, ensuring clarity, coherence, and adherence to academic writing standards.
5. The authors hereby retain full ownership of the above-mentioned project, including all moral and economic rights under Philippine law. However, the authors grant the Nueva Ecija University of Science and Technology an exclusive, irrevocable right to utilize, modify, reverse engineer, and disseminate the project for academic, institutional, community extension, and production purposes, subject to the condition that the authors' moral rights, including the right to be credited as the creators and the right to object to any derogatory treatment of the work, shall be upheld. This exclusive right does not transfer ownership of the copyright to the university but allows it to utilize the work for its institutional needs.
6. The project thus submitted, and upon acceptance by the College of Information and Communications Technology, shall grant the Nueva Ecija University of Science and Technology exclusive rights to use, reproduce, and distribute the work for academic, institutional and extension purposes, to the exclusion of all others.
7. The authors shall not commercially use or distribute the project without the written consent of the President of Nueva Ecija University of Science and Technology, but they retain the right to use the project for personal, academic, or non-commercial purposes, provided that the university's exclusive rights are respected.
8. Additionally, the authors grant permission to their adviser, **Angelito I. Cunanan Jr., MSIT** and course teacher, **Rachel T. Alegado,DIT** as co-authors, to present the project in various research conferences, seminars, and fora. However, it is recognized that the student-researchers are the senior authors of this project, and their contribution shall be duly acknowledged in any presentation or publication related to this work.

IN WITNESS WHEREOF, we have hereunto set on our hands this ____ day of _____, 2024 in the City of Cabanatuan, Philippines.

Name	**ID No.**	**Address**
Eugene Van R. Linsangan	SUM2021-01124	Sto. Cristo Norte, Gapan City, Nueva Ecija
Gabriel P. Manialong	SUM2021-00679	Pantoc, Aliaga, Nueva Ecija
Jhon Eric A. Jocson	SUM2021-00685	Santo Rosario, Aliaga, Nueva Ecija
Lester John Lloyd O. Monte	SUM2021-01677	De Salera Street, Poblacion East I, Aliaga, Nueva Ecija

SUBSCRIBED AND SWORN to before us this_____ day of _____, 2024 in the City of Cabanatuan, Philippines.

Doc No. _____
Page No. ____
Book No. ____
Series of _____

Republic of the Philippines
Nueva Ecija University of Science and Technology
College of Information and Communications Technology

CERTIFICATION OF ENGLISH CRITIC

This is to certify that the capstone and research project entitled **AGRILEARN: AN E-LEARNING APPROACH TO AGRICULTURAL EDUCATION,** prepared and submitted by **Eugene Van R. Linsangan, Gabriel P. Manialong, Jhon Eric A. Jocson, Lester John Lloyd O. Monte,** in partial fulfilment of the requirements for the degree, Bachelor of Science in Information Technology with Specialization in Web Systems Technology has been grammatically and technically edited by the undersigned. The said manuscript has been found to be acceptable to the rules of grammar and composition.

This certification has been issued to the abovementioned students-researchers for reference purposes only.

RUTH G. LUCIANO, PhD
Research Editor/English Critic

ACKNOWLEDGEMENT

The researchers would like to express their gratitude to the people behind the scene and the success of this group capstone project.

To **Prof. Angelito I. Cunanan**, their research adviser, for his guidance and his unwavering support to our project, his invaluable guidance and insights, his expertise and encouragement were instrumental in shaping this project.

To **Dr. Rachel T. Alegado**, capstone professor, for her insightful feedback and constructive suggestions have significantly contributed to the overall quality and rigor of this research.

To **Prof. Andrew Caesar E. Villegas**, and **Prof. Apple Grace G. Oliveros**, for their unparalleled expertise, invaluable insights, and thoughtful evaluation of this project. Their constructive feedback, inspiring suggestions, and unwavering guidance have significantly shaped the direction and depth of this research, encouraging the researchers to push boundaries and delve deeper into the complexities of the field.

To their **families**, whose steadfast support and encouragement have been a source of strength and motivation. Their sacrifices, particularly in providing financial assistance and moral reassurance, have been instrumental in the completion of this endeavor.

To the **respondents**, whose willingness to share their time, experiences, and perspectives made it possible to gather the essential data for this study. Their contributions have added immense value to this research and are deeply appreciated.

To the **researchers' friends**, who have stood by them with unwavering support, shared in their joys and challenges, and offered encouragement during late-night efforts to complete this project. Their companionship has been a source of solace and inspiration.

The Researchers

DEDICATION

This project is wholeheartedly dedicated to our parents, whose unwavering love, support, and encouragement have been our constant source of strength. Your belief in us has inspired and motivated us to persevere and bring this capstone project to completion.

To everyone who graciously took the time to thoughtfully engage with our interview and survey questions—your insights have been invaluable. To our friends and classmates, thank you for lending a helping hand and standing by us through the challenges of this journey.

To the esteemed teachers and staff of the Nueva Ecija University of Science and Technology's College of Information and Communications Technology, we are profoundly grateful for your guidance, knowledge, and support, which have been instrumental in our growth as students and researchers.

Above all, we dedicate this work to our Almighty God, who has been our guiding light, granting us wisdom, strength, and the fortitude to overcome every obstacle. Without Him, none of this would have been possible.

Eugene, Jhon Eric, Lester John, & Gabriel

Table of Contents

List of Tables

List of Figures

Abstract

In an era where digital transformation is reshaping industries, agriculture remains a critical yet underrepresented sector in leveraging modern technology for knowledge dissemination and education. AgriLearn emerges as an innovative solution addressing this gap by offering a comprehensive e-learning platform focused on modern agricultural techniques, machinery, and sustainable practices. The system empowers farmers and students alike with essential insights to enhance productivity, reduce costs, and make informed decisions in their agricultural pursuits.

Developed using the Agile Development Life Cycle, AgriLearn ensures adaptability and user-centricity in its design. The front-end is built with HTML, CSS, and JavaScript, delivering a seamless and responsive interface across various devices, while the backend, powered by PHP, provides robust functionality. The platform's curriculum includes topics such as farming methods, crop production, agricultural economics, and sustainability, ensuring a holistic learning experience.

The study revealed that agriculture enthusiasts often face challenges in adapting to the rapid advancements in technology and the tools used by the present generation. AgriLearn was successfully developed using the Agile Development Life Cycle, with plans to monitor, maintain, and improve the platform in the future. Assessments conducted using Software Quality Characteristics Standards showed that both IT experts and end-users were generally satisfied with the system. The IT experts gave the platform an average rating of 3.64, while end-users provided a score of 3.24. These results highlight the system's efficiency and effectiveness as a tool for agricultural learning courses.