



THE METAPHYSICS OF TEACHING AGRICULTURE IN SECONDARY SCHOOLS: INPUT FOR CURRICULAR ENHANCEMENT

*EYA LOISE LARIOSA DESPOLON
DANILO E. DESPI*

ABSTRACT: The best practices in terms of utilizing instructional materials were mostly multimedia presentations, traditional resources, and real-life objects. The formative and summative assessment was the best practice for assessing what the students learned. School heads and teachers implemented and integrated Agriculture in their curriculum through exposure to the actual situation on the farm, enhancing integration and active participation during practicum and exercises, urban gardening, seminar or workshops, and field trips in farmlands and Agricultural sites. The common instructional materials were multimedia, real-life or actual objects and materials, and printed materials. Teachers implemented rules and regulations, manage group activities, monitor the performance of students, acknowledge the positive behavior of students, and used varied learning activities in managing the classroom well. There is a need to further enhance the existing curricular activities to improve the implementation and integration of Agriculture in schools. Modern technology is used to teach Agriculture, but students must be engaged in real-life and actual activities rather than memorizing concepts. Assessing the students through solo and group activities will identify their capabilities and evaluate them with formative and summative assessments. Teachers should attend seminars and training to update and upgrade their teaching competencies, research new techniques and strategies to encourage students to study hard, and invite experts in the field of agriculture to join in school activities and campaigns. A teaching plan should be used to enhance the teaching and learning process in Agriculture.

KEYWORD: *METAPHYSICS OF TEACHING AGRICULTURE, SECONDARY SCHOOLS, CURRICULAR ENHANCEMENT*

INTRODUCTION

Agriculture is the art and science of cultivating the soil, growing crops, and raising live stocks. The preparation of plants, animal products, and crops are also included in agriculture. Agriculture

helps humans by providing food as a basic need and other products such as fabrics to live. Agriculture is divided into two types which are industrialized and subsistence agriculture.

Industrialized agriculture involves the production of large quantities of crops and life stocks which utilizes industrialized techniques, farming methods, and large machines that are necessary to feed all people. The major objective of industrialized agriculture is to increase crop yield. Subsistence agriculture mainly revolves around the life of a farmer with a small amount of land which enables the farmer to provide food to feed his family. The major objective of this type of agriculture is to provide food that is adequate for the survival of individual families.

Agriculture serves as the backbone of the country's economy. In a developing country like the Philippines, advancement in agriculture is very important to provide the necessary raw materials for the industries based in the country. The Philippines have 4 sub-sectors when it comes to agriculture which include farming, fisheries, livestock, and forestry. The Philippines prosper when it comes to agriculture because of the different resources found in it.

One of the components of a region's economy was Agriculture which was the largest component of Region V's economy. As agriculture caters to the needs of the people, people must have enough knowledge and skills in Agriculture. Agriculture, which belongs to practical subjects, is offered as a component of Makabayan. 8 focused on his study about Agriculture and the environment in Secondary Education in the Philippines, he stated that the Philippines belongs to a developing country and it is very important to include Agriculture and Environmental education in the basic curriculum at schools to satisfy the needs of the people.

Agriculture, as well as industrial arts and entrepreneurship, are already included in the curriculum of secondary schools. National Research Council stated in 2009 that Agriculture education addressed the increasing challenges related to food and Agriculture. One of the schools or universities that offers agriculture as a subject is the University of the Philippines Rural High School which is a vocational and science-oriented college preparatory school that made agriculture a major subject in all grade levels. Last August 2019, Study and Research in Agriculture along DepEd9 had an exploration program which has a primary goal of building up Agriculture in K to 12 curriculums.

This program may help improve the nutrition of the students as well as their education and economic well-being because not only that it will enhance their knowledge, but Agriculture will enhance also their skills. S+HGP or the School-Plus-Home Garden Project was created as their major program that will eventually enhance and promote the importance of Agriculture among students. Secretary Briones¹⁰ of the Department of Education, has a very positive approach in this

matter wherein she believes that «teaching agriculture to college students at the tertiary level will be a little too late.» Her goal was to strengthen and institutionalize the agriculture track of basic education in the Philippines. Students were disinterested in agriculture.

DepEd together with the Department of Agriculture formed a campaign wherein it uses schools as the main extension of agricultural practices. Agriculture Secretary Emmanuel Piñol¹² also added his insights and plans to add agriculture as a subject in elementary and high school. He encourages all agriculture graduates in the Philippines to be agriculture entrepreneurs to promote awareness of the importance of agriculture to the country. Secretary Piñol wants the children to have a passion and interest in agriculture.

Having an interest and passion in agriculture will be a stepping stone for the children to open their minds to the importance of agriculture to their lives, to society as well as to the country's economy. Agriculture is not only about digging soils for planting. People do not need to be Agriculturist or have a degree in Agriculture. Manalo IV¹³ of the Philippine Rice Research Institute said, «Educators must be able to promote agriculture as a viable and versatile career option to encourage high school students to take agriculture and related sciences as their course when they are in tertiary level.»By this, teachers must be equipped with much training and skills for them to serve as role models when it comes to applying agriculture in their lives.

743 entitled «Agriculture Education of 2010.» The bill's objective is to establish National Agriculture Education System, which aims «to stratify institutional goals, upgrade standards and increase the school's effectiveness in instruction, research, and extension within the nation, region or province.» The Senate bill was created to promote awareness of the importance of agriculture to society. NAES was established to assess the agriculture and rural development needs of the Philippines through different existing institutions inside the country may it be private or public. 1987 15 which aims to establish and maintain the National Agriculture Education System of the Philippines. Having agriculture as part of education not only opens up opportunities for students but also for future studies.

Now that we are facing changes in the environment like global warming, agriculture plays a vital role. Learning and researching new methods of farming for the plants and animals to adapt to harsh changes in the environment as well as making sure that productivity does not cease to decrease requires a lot of knowledge about agriculture. Teaching the benefits and role of agriculture will not only give them opportunities but also awaken their awareness of how they can contribute to saving the environment.

Methods

A qualitative research approach was used in this study since it is appropriate for this topic and for gathering the data required for it. This chapter includes the research designs and instruments that

were used in the study. It followed a set of details that explain and describe the implementation of teaching agriculture in Secondary Schools. The chapter started with a discussion of the intended method for this study. The first part included a discussion of the research methodology and design. The second part was concerned with the matter of interviews and interviewing. This data is followed by a discussion of the data analysis method and qualitative validity. The specific research design included subsections like Research Questions, Population, Confidentiality, Data Collection, and Data Analysis Methods. The chapter concluded by ensuring the research's validity and reliability.

Summary

This study determined the Metaphysics of Teaching Agriculture in Secondary Schools: Input for Curricular Enhancement. Specifically, it sought answers to the following questions:

1. What are the existing curricular activities and programs relevant to the promotion of Agriculture integration within and across the curriculum in Secondary Schools in Sorsogon City?
2. What are the best practices of Secondary Schools in teaching Agriculture particularly along:
 - a. Pedagogy
 - b. Instructional Materials
 - c. Classroom Management
 - d. Provision of Facilities
 - e. Assessment of Learning Outcomes
3. How do school heads and teachers implement the teaching of Agriculture and integration within and across the curriculum in Secondary Schools along with:
 - a. Pedagogy
 - b. Instructional Materials
 - c. Classroom Management
 - d. Provision of Facilities
 - e. Assessment of Learning Outcomes

4. What are the gaps and issues encountered by school heads and teachers in teaching Agriculture in Secondary Schools?

5. What curricular enhancement can be designed to enhance the teaching of Agriculture in Secondary Schools?

The present study is qualitative that focused on the implementation of Teaching Agriculture in Secondary Schools in Sorsogon City. The respondents of this study consisted of teachers and school heads of different schools respectively in Sorsogon City only. This study does not include other Secondary Schools outside Sorsogon City. This does not include private secondary schools in the city

Findings

Through careful and thorough analysis of the data gathered the following findings were obtained:

1. Existing Curricular Activities Programs Relevant to the Promotion of Agriculture Integration Within and Across the Curriculum

The school heads and teachers claimed that their schools are already conducting and performing the activities namely, Gulayan sa Paaralan, Nutrition Month Celebration, Division, Regional, and National Festival of Talents, Animal Production (Swine Production Project), Gulayan sa Tahanan, 4Ps Vegetable Garden Project, and Brigada Eskwela. The majority shared that this existing program in secondary schools is very useful in promoting agriculture integration, especially for students.

2. Best Practices of Secondary Schools in Teaching Agriculture

2.1 Pedagogy

School heads and teachers claimed that the best practices are structured experimental activities, classroom discussion or demo teaching, metacognitive strategies or analytical approaches, formative assessment, and collaborative learning. But it asserted that the best practice in teaching agriculture was the structured experiential activities that focus on the students to learn by doing.

2.2 Instructional Materials

It was revealed that the best practices in terms of utilizing instructional materials were mostly multimedia presentations (video and PowerPoint presentations), traditional resources (textbooks, printed lessons, and modules), and real-life objects (farming tools and equipment, seeds, and products). School head participants did mention that teaching agriculture should be realistic and learners should be exposed to actual real-life situations.

2.3 Classroom Management

Most school heads and teachers set classroom rules and regulations, manage and monitor activities, motivate students (acknowledging or praising positive behavior and addressing misbehavior of learners), and establish, maintain, and restore the student-teacher relationship. Setting classroom rules is still one of the top answers when it comes to managing classrooms.

2.4 Provision of Facilities

The participants did mention that having a school environment or gardening area, school buildings, multimedia room, piggery, and consumable electricity and water supply; and tapping the partner agencies (NGOs, DA, LGU's, DOST, DepEd, PTA, Alumni Association), and having DIY facilities using recycled materials had helped them to provide facilities in their schools. Participants emphasized that the facilities used in schools for agriculture subjects are from the help of the said partner agencies and the resourcefulness of the students and teachers.

2.5 Assessment of Learning Outcomes

It was discovered that using formative and summative assessment (knowledge-based instruction), and rubrics or criteria (skill-based instruction) was the best practice in assessing what the students learned. Knowledge-based instruction is all about written assessments which include quizzes and examinations while the latter, on the other hand, was being done through actual performances or laboratory activities.

3. Strategies Used to Implement the Teaching of Agriculture and Integration Within and Across the Curriculum

3.1 Pedagogy

School heads and teachers claimed that they implement and integrate Agriculture in their curriculum through exposure to the actual situation on the farm, enhancing integration and active participation during practicum and exercises, urban gardening, seminar or workshops, and field trips in farmlands and Agricultural sites. Participants gave more focus on exposing the students to actual agricultural sites and activities and letting them explore and develop their capabilities and skills.

3.2 Instructional Materials

The common instructional materials that were utilized are multimedia (video and PowerPoint presentations), real-life or actual objects and materials, and printed materials. Teacher participants claimed that they implement varied instructional materials depending on the teaching strategy they will employ. During outdoor activities, they used real-life or actual objects/materials, whereas, during classroom discussions, teachers used multimedia and printed materials.

3.3 Classroom Management

The participants revealed that they implement rules and regulations, manage group activities, monitor the performance of students, acknowledge the positive behavior of students, and using of varied learning activities in managing the classroom well. They asserted that rules and regulations are necessary for the whole class to have a guide in their do's and don'ts inside the classroom.

3.4 Provision of Facilities

Because of providing an operational facility, school heads, and teachers maintained a clean and safer horticultural facility, and a spacious classroom. School head and teacher participants ensured a spacious enough classroom and a clean and safer agricultural facility.

3.5 Assessment of Learning Outcomes

The most common form of assessing the learning outcomes of students as the participants said were rubrics, formative and summative assessments, pairing and grouping activities, written

board activities, and written project proposals or work plans. These classroom activities measure the extent of knowledge the learners gained during class discussions.

4. Gaps and Issues Encountered in Teaching Agriculture in Secondary Schools

According to the participants, there were many gaps and issues that they encountered such as student-related issues, teacher-related issues, materials or facility-related issues, and government-related issues. It was revealed that some demonstrate a lack of interest in the Agriculture course, negative attitude towards work, classroom management skills, lack of mastery in the concepts, fewer experiences in Agricultural activities, and lack of integration of the concept of entrepreneurship in teaching Agriculture. Another problem encountered is in the integration of the use of modern technology in Agricultural crop production, lack of learning materials (modules), incomplete supply of farm tools and equipment, not enough area for the vegetable garden, lack of water supply, lack of DepEd training for Agriculture teachers, lack of fund distribution for Agriculture programs, community-related issues, community's negative reaction towards "Gulayan sa Paaralan", and outsiders or burglars destroying Agricultural outputs of the school.

Conclusions

Based on the findings presented above, the researcher constructed the following conclusions.

1. Existing Curricular Activities Programs Relevant to the Promotion of Agriculture Integration Within and Across the Curriculum

There are already feasible and existing curricular activities and programs that are the anchor to promote Agriculture integration within and across the curriculum in Secondary Schools in Sorsogon City. However, there is a need to further enhance the existing curricular activities to improve the implementation and integration of Agriculture in schools.

2. Best Practices of Secondary Schools in Teaching Agriculture

2.1 Pedagogy

There is a need to propose new ways how to enhance the present practices that will catch the attention and interest of the students. The practices that must be imposed must focus on skills.

2.2 Instructional Materials

Mostly, modern technology is utilized in teaching Agriculture. However, for students to learn what Agriculture is all about, they must be engaged in real-life and actual activities rather than memorizing concepts.

2.3 Classroom Management

In managing the classroom, most teachers are proposing rules and regulations to maintain orderliness and discipline. However, teachers need to be stricter about these without affecting /her relationship with the student. Consistency in monitoring and guiding the students is also needed while motivating them at the same time.

2.4 Provision of Facilities

Due to having facilities and equipment supported by the different government agencies and school organizations, students and teachers are more likely to participate in activities including them. Given this opportunity, preserving is a required responsibility.

2.6 Assessment of Learning Outcomes

Continuing these types of assessments will guarantee that a student has managed to learn and hone their skills. It will show who are the students that excelled and be able to upgrade their skills.

3. Strategies Used to Implement the Teaching of Agriculture and Integration Within and Across the Curriculum

3.1 Pedagogy

Applying these integrations has proved that the students adapt to physical and mental involvement relating to Agriculture. Students who have experienced agricultural implementations are more likely to procure their learning easier.

3.2 Instructional Materials

With the use of technology like the use of multimedia specifically the use of PowerPoint presentations, audio-visual or video presentations, and pictures in teaching agriculture, they will be able to familiarize themselves with equipment and materials. The use of these technology-based materials has been very evident since they can be easily utilized through the help of the internet and computers.

3.3 Classroom Management

Since the participants applied this guidance through rules and regulations and monitoring their students, they will become used to following discipline and responsibility to learn fluently about their lessons. Applying those rules consistently makes it more effective in managing the classroom.

3.4 Provision of Facilities

Having a clean and safe workspace will allow the student to study and learn comfortably. The students can perform much better in a clean environment for their safety.

3.6 Assessment of Learning Outcomes

Assessing the students through solo and group activities will identify the student's capabilities. Also, evaluating them with formative and summative assessments will show what they have learned and understand in agriculture.

4. Gaps and Issues Encountered in Teaching Agriculture in Secondary Schools

Students related are the first gaps and issues towards teaching agriculture since some students are lacking enthusiasm about it. Teachers related are the second gap and issue, some teachers do not possess the required amount of training and experience to project their teachings properly. They also encountered a lack of learning materials especially when it involves technology. The third gaps and issues are material/facility-related, the absence of tools and equipment, and an inadequate number of facilities contributing to the problem.

Recommendations

Based on the presented findings and conclusions, the researcher formulated the following recommendations.

1. Seminars and workshops be given to students to familiarize works and products of agriculture by inviting resource speakers who are experts on Agriculture.

2. Film show be part of the regular activities to deepen students' knowledge on certain topics in agriculture.

3. Teachers be allowed to attend seminars and training to update and upgrade their teaching competencies along with Agriculture.

4. School heads and teachers be encouraged to research new techniques and strategies on how they can manage to encourage students to study hard. They can browse the internet and watch videos of many professionals like TED Talks, National Geographic, and other channels regarding agriculture.

5. Experts in the field of agriculture be invited to join in school activities and campaigns for them to have wider knowledge, facts, and ideas about it. They can also invite parents of other students which have agricultural jobs to share their experiences.

6. Schedule for Clean and Green every week to be implemented to maintain the cleanliness of the facility and tools. Teachers should teach their students about the proper cleaning, maintaining, and sanitizing of the equipment they used in their on-hand activities

7. School heads or teachers be given training on-farm management and how to use state-of-the-art technology in farming.

8. Updated materials on best farming practices be published and distributed to schools for information and updating.

9. Continuous and periodic monitoring and evaluation be done by school heads to teachers' competencies in teaching agriculture.

10. Partnership between the school and the barangay council be done to seek aid from barangay officials in securing their facilities and agricultural places from outsiders.

11. Parents' participation be encouraged particularly along with organic farming.

12. Programs and activities along with the integration of Agriculture in Secondary Schools be launched in the research site and other schools as well.

13. Teaching plan to enhance the teaching and learning process in Agriculture be used by teachers teaching Agriculture.

14. Parallel studies be conducted based on the following suggested titles:

a. THE EFFECTIVENESS OF TEACHING AGRICULTURE TO SECONDARY SCHOOLS

b. THE PERCEPTION OF SECONDARY STUDENTS ON HAVING AGRICULTURE AS THEIR SUBJECT.

c. PROACTIVE INSIGHTS ON INTEGRATING AGRICULTURE TO SECONDARY SCHOOLS OF TEACHERS: A PHENOMENAL STUDY

d. CORRELATIONAL STUDY ON THE INTEGRATION OF AGRICULTURE IN SECONDARY SCHOOLS TO THE PERFORMANCE OF STUDENTS IN TERTIARY LEVEL