

Implementing Agri-Fishery Arts Education in Junior High School in Cabarroguis, Quirino Province

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Publication history: Received: April 1, 2026; Revised: April 14, 2026; Accepted: April 19, 2026

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Abstract

This study examined the implementation of Agri-Fishery Arts (AFA) Education among junior high school students in Cabarroguis, Quirino Province, with the aim of determining students' demographic characteristics, factors influencing their choice of AFA, challenges encountered, and the relationships among these variables. Anchored on Constructivist Learning Theory, Human Capital Theory, and the Input–Process–Output (IPO) Model, the study employed a descriptive–comparative–correlational research design. A total of 75 Grade 9 and Grade 10 students participated as respondents, and data were collected using a validated structured questionnaire covering demographic profile, influencing factors, challenges, and perceived outcomes. Descriptive statistics and inferential techniques, including t-test, one-way ANOVA, and Pearson r correlation, were used for analysis. The findings revealed that respondents were predominantly middle adolescents with balanced representation in sex and grade level and generally average to above-average academic performance. Students were primarily influenced to enroll in AFA due to its practical value, development of life and livelihood skills, self-reliance, and relevance to real-life and community needs, indicating strong intrinsic motivation. However, moderate challenges were identified, particularly in limited hands-on learning opportunities and inadequate facilities and resources. Significant differences were found when grouped according to age, sex, and grade level, while academic performance showed no significant effect. A significant positive relationship between age and influencing factors indicated that older students demonstrate greater appreciation for practical and career-oriented aspects of AFA. The study concludes that AFA is an inclusive and relevant program that supports learners' practical skills and holistic development, but its effectiveness depends on improved instructional delivery and resource provision. It recommends strengthening experiential learning, enhancing facilities, and applying differentiated instruction. The study aligns with SDG 4 (Quality Education) by promoting competency-based learning and SDG 5 (Gender Equality) ensuring equal rights to economic resources and education. It also contributes to community and socio-economic sustainability by enhancing agricultural skills, workforce readiness, and local development in agricultural communities.

Keywords: Agri-Fishery Arts, agricultural education, demographic factors, experiential learning, student engagement, vocational education

1. Introduction

Agri-Fishery Arts (AFA) Education under the Technology and Livelihood Education (TLE) curriculum plays a critical role in developing practical skills, work values, and career readiness among junior high school learners, particularly in agricultural communities such as Cabarroguis, Quirino Province. Anchored on the MATATAG and K–12 curriculum frameworks and supported by national policies, AFA promotes experiential, competency-based, and contextualized learning. However, variations in student engagement, instructional delivery, and resource availability affect its effective implementation. This study examines AFA implementation from the students' perspective, focusing on demographic characteristics, influencing factors in course selection, and challenges encountered, to provide evidence-based insights for improving program delivery.

1.1 Background of the Study on Agri-Fishery Arts Education Implementation among Junior High School Students in Cabarroguis, Quirino Province

Education is fundamental to nation-building, equipping learners with competencies for lifelong learning and productivity. In the Philippines, the Department of Education strengthens curriculum relevance through the K–12 system, where TLE, particularly Agri-Fishery Arts, develops agricultural knowledge, skills, and entrepreneurial competencies aligned with community needs. AFA is especially significant in rural municipalities where agriculture is a primary livelihood. It

introduces learners to crop production, work values, and sustainable practices through experiential and contextualized instruction. Its implementation is anchored on Republic Act No. 10533 and Republic Act No. 9155, which emphasize competency development, shared governance, and contextualization of education programs. Under the MATATAG curriculum, AFA supports foundational skills, learner-centered instruction, and career readiness. However, implementation challenges persist, including variations in student interest, perceptions of agriculture, and access to facilities and resources. These factors influence learners' participation and highlight the need to assess AFA implementation from the students' perspective.

1.2 Themes and Insights on Student Demographics, Influencing Factors, and Pedagogical Approaches in Agri-Fishery Arts

Literature emphasizes that AFA contributes to developing functional knowledge, skills, and career awareness aligned with TLE and MATATAG goals (Department of Education, 2019). Experiential, competency-based, and contextualized learning approaches enhance student engagement and skill acquisition. Students' engagement in AFA is influenced by demographic characteristics such as age, sex, grade level, and academic performance, which affect learning readiness and participation. Agluba (2021) found a significant relationship between technical skills and academic performance, while Gaboy (2021) highlighted the role of perception and awareness in shaping student interest. Lavadia (2016) further emphasized the influence of family background and learning experiences on attitudes toward agriculture. Recent studies confirm that students' choices are shaped by intrinsic and extrinsic factors, including interest, social environment, and perceived career benefits (Alotaibi et al., 2024; Pervez et al., 2024; Aruleba, 2024). Experiential learning improves engagement (Xu et al., 2023), while interactive strategies enhance understanding (Ma et al., 2024). However, inadequate facilities and resources hinder effective implementation (Respicio, 2023; Ogunjobi and Idowu, 2024). Pedagogically, experiential, competency-based, and contextual teaching approaches are essential in AFA (DepEd, 2019). However, challenges such as teacher preparedness and limited resources affect instructional effectiveness (Gerona, 2025). These findings highlight the need to evaluate both learner-related and instructional variables in AFA implementation.

1.3 Local, National, and Global Context of Agri-Fishery Arts Education and Student Participation

Globally, agricultural education is vital for food security, sustainability, and workforce development, yet youth interest in agriculture is declining due to negative perceptions and limited awareness. In the Philippines, similar trends are observed as students prefer urban and technology-driven careers, underscoring the need to strengthen agricultural education at the basic level. At the local level, Cabarroguis, Quirino Province, relies heavily on agriculture, making AFA essential for community development. However, variations in student engagement, instructional strategies, and facilities affect implementation. Studies such as Respicio (2023), Gaboy (2021), and Gerona (2025) highlight issues in program delivery, student perception, and resource availability, reinforcing the importance of localized assessment.

1.4 Theoretical and Conceptual Basis of Agri-Fishery Arts Implementation and Student Choice

This study is grounded in Constructivist Learning Theory, which posits that learners construct knowledge through experience, and Human Capital Theory, which emphasizes skill development for economic productivity. These frameworks support experiential and competency-based learning in AFA. The study also adopts the Input–Process–Output (IPO) Model, where students' demographic profile and influencing factors serve as inputs, data collection and analysis as processes, and findings and recommendations as outputs. This model explains how variables interact to determine AFA implementation outcomes.

1.5 Research Gaps on AFA Implementation, Demographic Differences, and Age-Related Influence

Despite extensive studies on agricultural education, limited research focuses on AFA implementation at the municipal level from the students' perspective. While previous studies examined perceptions, interest, and demographic differences (Mkong et al., 2021; Tanpichai, 1998; Isyanto et al., 2024; Esters, 2007; Chemjor, 2016), few have analyzed how these factors specifically influence students' choice of AFA in local contexts. Moreover, limited studies have explored the relationship between age and influencing factors in AFA selection, despite evidence that age affects decision-making and career awareness (Isyanto et al., 2024; Mkong et al., 2021; Agluba, 2021). These gaps justify the need for a localized, student-centered study examining demographic variables, influencing factors, challenges, and their relationships in AFA implementation.

1.6 Alignment of Agri-Fishery Arts Education with Relevant Sustainable Development Goals (SDGs)

Agri-Fishery Arts Education aligns with several Sustainable Development Goals. It contributes to SDG 4 by promoting inclusive and skills-based learning through experiential and practical activities that enhance learners' competencies in agriculture and fisheries. It also supports SDG 5 by ensuring equal opportunities for both male and female learners to participate in agricultural education and related livelihood training. Furthermore, it contributes to SDG 11 by equipping students with knowledge and skills that promote sustainable practices and strengthen rural and community-based livelihoods. These alignments reflect the role of AFA in preparing learners for productive participation in society and sustainable community development.

1.7 Importance of the Study to Multidisciplinary Sustainability in Agricultural Education and Community Development

This study contributes to socio-economic sustainability by preparing learners with skills relevant to agriculture-based livelihoods. It supports educational sustainability through improved curriculum implementation and learner-centered instruction aligned with MATATAG principles. It also promotes community sustainability by strengthening agricultural productivity and food security in rural areas. Furthermore, the study contributes to policy and institutional sustainability by providing evidence-based insights for curriculum development, teacher training, and resource allocation. Overall, the research supports the continuous improvement of Agri-Fishery Arts Education, ensuring its relevance, effectiveness, and alignment with national development goals and sustainable practices.

2. Material and methods

2.1 Research Design

The study utilized a descriptive-comparative-correlational research design to systematically describe, compare, and determine relationships among variables without manipulation. The descriptive aspect was used to present the respondents' demographic profile, factors influencing their choice of AFA, and challenges encountered. Frequency, percentage, and weighted mean were applied to summarize the data. The comparative component examined differences in influencing factors when respondents were grouped according to sex, grade level, age, and academic performance using independent samples t-test and one-way analysis of variance (ANOVA). The correlational component determined the relationship between age and the influencing factors using the Pearson product-moment correlation coefficient (Pearson r), providing insights into how age relates to students' perceptions and decision-making. This integrated approach enabled a comprehensive analysis of AFA implementation.

2.2 Locale of the Study

The study was conducted in selected public junior high schools in Cabarroguis, Quirino Province, under the Schools Division Office of Quirino. Cabarroguis, as the provincial capital, serves as a center for educational and agricultural activities. The selected schools implement the TLE curriculum with AFA specialization for Grade 9 and Grade 10 students under the K-12 and MATATAG frameworks. The vicinity map (Figure 2) shows that the schools are strategically located within the municipality and serve both urban and rural communities. This geographical distribution reflects accessibility to learners from agricultural backgrounds and provides a relevant setting for examining AFA implementation. The locale was purposively selected due to its strong dependence on agriculture, making AFA a practical and contextually appropriate learning area. Data collection was conducted within the school premises to ensure systematic and context-specific results.

2.3 Respondents of the Study

The respondents were Grade 9 and Grade 10 students enrolled in the Agri-Fishery Arts specialization under the TLE curriculum in selected public junior high schools in Cabarroguis, Quirino Province. Students were chosen as respondents because they are the direct beneficiaries of AFA implementation and can provide relevant insights regarding their experiences, choices, and challenges in the program.

2.4 Sample and Sampling Procedure

The study focused on students enrolled in AFA classes in selected schools within Cabarroguis. The selection of respondents was based on their enrollment in the AFA specialization, ensuring that participants had direct exposure to the program. This approach allowed the study to gather relevant and context-specific data regarding AFA implementation from the learners' perspective.

2.5 Research Instrument

The study used an adapted survey questionnaire as the primary research instrument. It consisted of four parts: demographic profile (age, sex, grade level, and academic performance), factors influencing students' choice of AFA, challenges encountered in terms of pedagogy and facilities, and perceived outcomes related to engagement, satisfaction, and skill development. The instrument measured students' perceptions of agricultural careers, influences from family, peers, and teachers, and the adequacy of instructional resources. It underwent content validation by experts in education and Agri-Fishery Arts to ensure clarity, relevance, and alignment with the study objectives.

2.6 Data Gathering Procedure

Permission to conduct the study was secured from the Schools Division Office and school heads. Coordination with TLE teachers facilitated the administration of the questionnaires. The questionnaires were distributed manually to ensure proper explanation of items, and clarifications were provided when necessary. Respondents were given sufficient time to answer honestly. Data collection was conducted during the third and fourth quarters of School Year 2025-2026 to ensure that

students had adequate exposure to AFA classes. This timing allowed the collection of relevant and experience-based responses.

2.7 Data Analysis Techniques

Data were checked, organized, and encoded for analysis. Descriptive statistics such as frequency and percentage were used to present respondents' demographic profile, while weighted mean and standard deviation were used to analyze factors influencing students' choice of AFA and the challenges encountered. The Likert scale was applied to interpret the level of agreement. Inferential statistical tools were used to test differences and relationships. Independent samples t-test was applied for variables grouped into two categories, such as sex and grade level, while one-way ANOVA was used for variables with multiple groups, such as age and academic performance. The Pearson product-moment correlation coefficient (Pearson r) was used to determine the relationship between age and influencing factors. All tests were conducted at a 0.05 level of significance, where p-values determined the acceptance or rejection of null hypotheses.

2.8 Ethical Considerations

Ethical standards were strictly observed throughout the study. Participation was voluntary, and informed consent was obtained from all respondents. Confidentiality and anonymity were ensured, as no identifying information was collected. Participants were informed of their right to withdraw at any time without penalty. The study complied with the research ethics standards set by the Department of Education.

3. Results and Discussion

3.1 Demographic Profile and Characteristics of Students

3.1.1 Age, Sex, Grade Level, and Academic Performance Distribution

The results show that most respondents are 15 years old, followed by 16 and 14 years old, with only a few aged 17, indicating that the majority are in the middle adolescent stage. The distribution by sex is nearly equal, with slightly more males than females. Grade level representation is balanced between Grade 9 and Grade 10 students. In terms of academic performance, most respondents fall within the average to above-average range, particularly in the 86–90 and 91–95 brackets, with very few in the highest and lowest categories. Overall, the profile reflects a diverse group of learners across demographic categories. These findings suggest that students in the middle adolescent stage are actively forming interests and making educational decisions, which influences their participation in AFA. This supports Ani (2014), who emphasized that adolescence is a critical stage for developing agricultural interest, and Lavadia (2016), who noted that perceptions toward agriculture are shaped during this period. Alotaibi et al. (2024) further confirmed that developmental stage affects engagement and decision-making. The balanced sex distribution indicates inclusivity, aligning with Dyer et al. (2002) and Gaboy (2021), who found that participation is influenced more by exposure than gender. Similarly, the varied academic performance supports Agluba (2021) and Xu et al. (2023), emphasizing that skill-based education accommodates diverse learners, highlighting AFA as an inclusive and accessible program.

3.2 Factors Influencing Students' Choice of Agri-Fishery Arts

3.2.1 Perceived Practical Value, Interest, and External Influences

The results indicate that students generally agree that multiple factors influence their choice of AFA, with an overall positive evaluation. The highest ratings are associated with the subject's usefulness in providing life and livelihood skills, promoting self-reliance, and aligning with real-life and community needs. Personal interest and familiarity with agricultural practices are also rated highly. In contrast, family influence, peer influence, career plans, and school facilities receive lower but still moderate ratings, indicating secondary importance in decision-making. These findings imply that students are primarily motivated by intrinsic factors and the perceived practical benefits of AFA. This aligns with Alston et al. (2002) and Wildman and Torres (2001), who emphasized that perceived usefulness strongly influences enrollment in agricultural education. Aruleba (2024) also highlighted the role of employability and sustainability in increasing engagement. The importance of interest and familiarity supports Ani (2014) and Pervez et al. (2024), who found that intrinsic motivation and exposure significantly influence participation. Meanwhile, the lower influence of social factors suggests increasing student independence in decision-making, consistent with Isyanto et al. (2024), who noted that career awareness develops gradually and requires further guidance.

3.3 Challenges Encountered in Agri-Fishery Arts Implementation

3.3.1 Pedagogical and Facility-Related Constraints

The results reveal that students moderately experience challenges in AFA implementation. In terms of pedagogy, learners report difficulties related to the theoretical nature of lessons, limited time for hands-on activities, unclear instructions, and teaching strategies that are not aligned with their learning preferences. Regarding facilities, students agree that insufficient tools and equipment and limited access to water supply are significant concerns, while also noting that inadequate learning materials and poor tool conditions affect their learning experience. These findings indicate a gap between the intended experiential nature of AFA and its actual classroom implementation. The dominance of theoretical instruction limits skill

development, supporting Gerona (2025), who reported that lack of practical exposure reduces student engagement and competence. Xu et al. (2023) and Ma et al. (2024) emphasized that experiential and interactive approaches improve learning outcomes in vocational education. Similarly, the identified facility constraints align with Respicio (2023) and Ogunjobi and Idowu (2024), who highlighted the importance of adequate resources in effective program delivery. These results suggest that improving both teaching strategies and resource availability is essential for enhancing AFA implementation.

3.4 Differences in Factors Influencing AFA Choice Based on Demographic Variables

3.4.1 Variations Across Age, Sex, Grade Level, and Academic Performance

The results show that students generally have positive perceptions of AFA, but significant differences exist when grouped according to age, sex, and grade level, while no significant differences are observed based on academic performance. Younger students consistently demonstrate higher levels of interest, perceived usefulness, and optimism toward AFA, while older students show lower ratings. Male students exhibit slightly higher engagement than female students, although both groups remain positive. Grade 9 students show higher enthusiasm compared to Grade 10 students, while academic performance shows minimal variation across all indicators. These findings suggest that developmental stage strongly influences students' perceptions and motivation. Younger learners tend to be more enthusiastic, while older learners develop more realistic perspectives, consistent with Ani (2014) and Alotaibi et al. (2024). The influence of gender reflects differences in exposure rather than ability, as explained by Talbert and Balschweid (2004) and Dyer et al. (2002), while Pervez et al. (2024) emphasized the role of access and experience. Differences across grade levels support the spiral progression framework described by the Department of Education (2019), where understanding deepens over time. The lack of variation in academic performance aligns with Agluba (2021) and Xu et al. (2023), confirming that AFA is inclusive and accessible regardless of academic ability.

3.5 Relationship Between Age and Factors Influencing AFA Choice

3.5.1 Correlation Between Age and Decision-Making Factors

The results show that age has a statistically significant positive relationship with all factors influencing students' choice of AFA, with correlation values ranging from moderate to very strong. The strongest relationships are observed in factors related to school facilities, practicality of AFA, and alignment with real-life needs, while even the lowest correlation still indicates a meaningful association. This suggests that as students grow older, they place greater importance on practical application, learning environment, and real-world relevance. These findings indicate that maturity plays a key role in shaping students' perceptions and decisions. As learners age, they develop stronger cognitive abilities and clearer career goals, leading to more practical evaluations of AFA. This is consistent with Ani (2014) and Olagunju and Adesiyani (2019), who emphasized the influence of maturity and exposure on agricultural interest. Alotaibi et al. (2024) further explained that adolescent development affects decision-making and career awareness. The results highlight the need for developmentally appropriate strategies that provide early exposure for younger students and career-oriented learning for older students, reinforcing the importance of AFA in supporting livelihood readiness and sustainable development goals.

4. Conclusion & Recommendations

The study concludes that Agri-Fishery Arts Education in junior high schools is a relevant and meaningful learning area that supports students' developmental needs, practical interests, and career readiness. Students are primarily motivated to enroll in AFA due to its practical value, real-life applicability, and ability to develop livelihood skills and self-reliance, indicating strong intrinsic motivation over external influences. Despite positive perceptions, the implementation of AFA is affected by limitations in instructional delivery and insufficient facilities, which hinder the full development of students' technical competencies. The findings also establish that age, sex, and grade level significantly influence students' perceptions and engagement, while academic performance does not, confirming the inclusivity of the program. Furthermore, AFA contributes to learners' holistic development by enhancing both technical and life skills, and the significant relationship between age and influencing factors highlights the importance of developmental readiness in shaping students' appreciation and participation in agricultural education.

It is recommended that the implementation of Agri-Fishery Arts Education be strengthened by enhancing experiential and hands-on learning activities, improving the availability of facilities, tools, and instructional resources, and applying differentiated instructional approaches that consider students' age, sex, and grade level. Schools should promote inclusive learning opportunities regardless of academic performance while strengthening community and parental involvement through partnerships. Continuous professional development for teachers should be provided to improve instructional strategies, and policy support should be enhanced to ensure adequate resource allocation. Additionally, career guidance initiatives and the integration of modern agricultural technologies should be reinforced to further improve the effectiveness and relevance of the program.

The study is limited to Grade 9 and Grade 10 students enrolled in Agri-Fishery Arts in selected public junior high schools

in Cabarroguis, Quirino Province during the School Year 2025–2026, which restricts the generalizability of the findings to other contexts. It focuses solely on students' perceptions and self-reported experiences without including teachers, administrators, or other stakeholders, and does not incorporate direct classroom observations or objective performance measures. The analysis is confined to the variables specified in the study, particularly demographic characteristics and selected influencing factors, and the statistical findings establish relationships but do not determine causation.

Compliance with ethical standards

The authors declare no conflict of interest, and this study received no external funding. The research was conducted with the voluntary participation of Grade 9 and Grade 10 students from selected public junior high schools in Cabarroguis, Quirino Province, with informed consent obtained prior to data collection. Data were gathered using non-invasive survey methods in coordination with school authorities, and all responses were treated with strict confidentiality, with no identifying information disclosed. The researchers acknowledge the cooperation of the participants and the Schools Division Office and school administrators who facilitated the conduct of the study.

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