Competence of Public Junior High School Teachers in Technology and Livelihood Education Agri-Fishery Arts in District I, Manila City Division

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Abstract

The development of competent teachers in Technology and Livelihood Education (TLE)–Agri-Fishery Arts is essential in ensuring effective delivery of skills-based instruction aligned with the goals of the K–12 curriculum. This study was conducted to determine the level of competence of public junior high school teachers in TLE–Agri-Fishery Arts in District I, Division of Manila City, during the School Year 2025–2026. Specifically, it assessed teachers' competence across five strands: Crop Production, Animal Production, Aquaculture, Fish Capture, and Food and Fish Processing, as perceived by teachers and school heads. It also examined the degree of seriousness of the problems encountered by TLE teachers that may hinder effective instructional delivery.

The study employed a descriptive research design, with TLE teachers and school heads as respondents. A structured questionnaire checklist served as the primary data-gathering instrument, while the Average Weighted Mean and t-test were used to analyze the data.

Findings revealed that the level of competence of TLE–Agri-Fishery Arts teachers was generally moderate across the five strands. Results further showed no significant difference between the perceptions of teachers and school heads, indicating a shared understanding of teachers' competence. Moreover, the problems encountered by TLE teachers were rated as moderately serious, suggesting the presence of challenges that affect the delivery of practical and technical lessons.

In conclusion, while TLE teachers demonstrate an adequate level of competence in Agri-Fishery Arts, there remains a need for continuous professional development and institutional support. The findings of the study served as the basis for the development of an action plan aimed at enhancing the competence of junior high school TLE teachers in Agri-Fishery Arts.

Keywords*: TLE–Agri-Fishery Arts, Teacher Competence, Junior High School Teachers, Technical-Vocational Education, Action Plan*

INTRODUCTION

Technology and Livelihood Education (TLE) plays a vital role in equipping learners with practical skills and competencies necessary for productivity, employability, and entrepreneurship. Under the K–12 curriculum, Agri-Fishery Arts serves as a key component of TLE, providing learners with foundational knowledge and hands-on skills in agriculture, fisheries, and food processing. The effectiveness of this

program largely depends on the competence of teachers who deliver skills-based and experiential instruction.

The Department of Education (DepEd) underscores the importance of teacher competence in ensuring meaningful learning experiences, particularly in technical-vocational subjects such as Agri-Fishery Arts. Teachers are expected to possess adequate content knowledge, technical skills, and pedagogical competence across various strands, including Crop Production, Animal Production, Aquaculture, Fish Capture, and Food and Fish Processing. Competent instruction in these areas enables learners to develop practical skills relevant to real-life applications and livelihood opportunities.

Despite curriculum support and policy initiatives, the delivery of Agri-Fishery Arts instruction faces several challenges. Limited facilities and equipment, insufficient training, lack of instructional materials, and varying levels of teacher specialization may affect teachers' competence and instructional effectiveness. Moreover, understanding the alignment or differences in perceptions between teachers and school heads regarding teacher competence is essential in strengthening instructional supervision and support mechanisms.

In view of these considerations, this study aimed to determine the level of competence of public junior high school TLE teachers in Agri-Fishery Arts in District I, Division of Manila City. Specifically, it sought to assess competence across the five Agri-Fishery Arts strands, examine differences in perceptions between teachers and school heads, identify problems encountered by teachers, and propose an action plan to enhance teacher competence. The findings of the study are expected to provide valuable inputs for school administrators, curriculum planners, and policymakers in improving the quality of TLE–Agri-Fishery Arts instruction.

MATERIALS AND METHODS
Research Design
This study employed a **descriptive research design** to assess the level of competence of public junior high school teachers in Technology and Livelihood Education (TLE)–Agri-Fishery Arts. The design was appropriate for describing existing conditions, determining perceptions of teachers and school heads, and identifying problems encountered in teaching Agri-Fishery Arts without manipulating any variables.

Participants
The participants of the study consisted of a **total enumeration of 74 TLE teachers and 5 school heads** from public junior high schools in District I, Division of Manila City. The respondents were selected due to their direct involvement in the implementation and supervision of the TLE–Agri-Fishery Arts curriculum during the School Year 2025–2026.

Instruments
A **structured questionnaire checklist** served as the primary data-gathering instrument. The questionnaire consisted of two parts. **Part I** measured the level of competence of TLE teachers across five Agri-Fishery Arts strands: Crop Production, Animal Production, Aquaculture, Fish Capture, and Food and Fish Processing. **Part II** assessed the degree of seriousness of the problems encountered by TLE teachers that may have affected their competence. A Likert-scale format was used to quantify respondents' perceptions. The instrument was adapted from a validated questionnaire used in previous studies on TLE–Agri-Fishery Arts teacher competence.

Procedure
Approval to conduct the study was obtained from the Division Office of Manila City and the school heads of the participating schools. The researcher personally administered the questionnaires to the respondents and explained the purpose of the study. Confidentiality and anonymity of the respondents were strictly observed. The retrieval rate of the questionnaires was 100 percent.

Data Analysis

Descriptive statistics, specifically the **Average Weighted Mean**, were used to determine the level of competence of TLE teachers and the degree of seriousness of the problems encountered. The **t-test for independent samples** was employed to determine whether a significant difference existed between the perceptions of teachers and school heads at the 0.05 level of significance.

RESULTS AND DISCUSSION

LEVEL OF COMPETENCE OF TLE TEACHERS ALONG CROP PRODUCTION AS PERCEIVED BY THE TEACHERS AND SCHOOL HEADS

Table 2 presents the level of competence of TLE teachers in Crop Production as perceived by teachers and school heads. All indicators were rated as Moderate, with overall average weighted means ranging from 2.98 to 3.25. The indicators on preparing land and planting areas and storing and marketing harvested crops obtained the highest ratings, suggesting that teachers demonstrate adequate competence in fundamental crop production and post-harvest practices. On the other hand, lower mean ratings were noted in demonstrating knowledge of resilient farming practices and maintaining crop production records, indicating areas that may need further improvement. The total average weighted mean of 3.09, interpreted as Moderate, signifies that while TLE teachers possess acceptable competence in crop production, continuous professional development is still needed to enhance their skills and instructional effectiveness in this area.

Table 2
Level of Competence of TLE Teachers in Crop Production as
Perceived by the Teachers and School Heads

Indicators	Teachers		School Heads		Overall	
	Mean	DE	Mean	DE	AWM	DE
1. Prepares land and planting areas	3.20	M	3.30	M	3.25	M
2. Selects and plants appropriate seeds	3.10	M	3.25	M	3.18	M
3. Applies fertilizers and soil amendments	2.95	M	3.20	M	3.08	M
4. Manages pests using IPM techniques	3.00	M	3.15	M	3.08	M
5. Operates and maintains farm tools	2.90	M	3.10	M	3.00	M
6. Harvests crops following standards	3.00	M	3.20	M	3.10	M
7. Stores and markets harvested crops	3.05	M	3.25	M	3.15	M
8. Demonstrates knowledge of resilient farming practices	2.85	M	3.10	M	2.98	M
9. Maintains crop production records	2.90	M	3.05	M	2.98	M
10. Practices crop rotation and conservation methods	3.00	M	3.20	M	3.10	M
Total	3.00	M	3.18	M	3.09	M

LEVEL OF COMPETENCE OF TLE TEACHERS IN ANIMAL PRODUCTION AS PERCEIVED BY THE TEACHERS AND SCHOOL HEADS

Table 3 shows the level of competence of TLE teachers in Animal Production as perceived by teachers and school heads. The results reveal that most indicators were rated as Moderate, with overall mean scores ranging from 3.30 to 3.43. Higher ratings were observed in monitoring animal health and applying basic treatments as well as practicing proper waste management and disposal, which obtained overall mean ratings interpreted as High, indicating stronger competence in these areas. The remaining indicators, including animal care, feeding practices, housing and sanitation, record-keeping, and use of tools and equipment, were consistently rated as Moderate, suggesting adequate but improvable proficiency. The total overall mean of 3.36, interpreted as Moderate, indicates that TLE teachers demonstrate satisfactory competence in animal production; however, continuous skills enhancement and targeted training are recommended to further strengthen their technical and instructional capabilities in this strand.

Table 3
Level of Competence of TLE Teachers in Animal Production as Perceived by the Teachers and School Heads

Indicators	Teachers		School Heads		Overall	
	Mean	DE	Mean	DE	Mean	DE
1. Raises and cares for farm animals based on species-specific needs.	3.39	M	3.35	M	3.37	M
2. Prepares feeds and feeding schedules appropriate to animal types.	3.42	H	3.36	M	3.39	M
3. Maintains animal housing and sanitation standards.	3.36	M	3.33	M	3.35	M
4. Monitors animal health and applies basic treatments.	3.45	H	3.40	M	3.43	H
5. Assists in breeding and reproductive management.	3.31	M	3.28	M	3.30	M
6. Maintains records of animal production activities.	3.33	M	3.29	M	3.31	M
7. Observes animal welfare standards and biosecurity protocols.	3.38	M	3.34	M	3.36	M
8. Practices proper waste management and disposal.	3.44	H	3.39	M	3.42	H
9. Identifies signs of common animal diseases.	3.37	M	3.32	M	3.35	M
10. Demonstrates proper use of animal production tools and equipment.	3.35	M	3.30	M	3.33	M
Total	3.38	M	3.33	M	3.36	M

LEVEL OF COMPETENCE OF TLE TEACHERS IN AQUACULTURE AS PERCEIVED BY THE TEACHERS AND SCHOOL HEADS

Table 4 presents the level of competence of TLE teachers in Aquaculture as perceived by teachers and school heads. Overall, the indicators were mostly rated as Moderate, with overall mean scores ranging from 2.45 to 2.68. The higher ratings were observed in feeding and monitoring fish growth, controlling water quality, and preparing and maintaining fishponds or tanks, suggesting that teachers demonstrate some competence in basic aquaculture practices. However, lower ratings, particularly in keeping records of aquaculture activities and production, indicate areas where teachers' proficiency is limited. The total overall mean of 2.58, interpreted as Moderate, shows that while TLE teachers have a basic level of competence in

aquaculture, targeted training and support are needed to improve their skills and enhance the delivery of practical and technical lessons in this strand.

Table 4
Level of Competence of TLE Teachers in Aquaculture as Perceived by
the Teachers and School Heads

Indicators	Teachers		School Heads		Overall	
	Mean	DE	Mean	DE	Mean	DE
1. Prepares and maintains fishponds or tanks.	2.70	M	2.55	L	2.63	M
2. Selects appropriate fish species for aquaculture.	2.65	M	2.45	L	2.55	M
3. Feeds and monitors fish growth and behavior.	2.80	M	2.50	L	2.65	M
4. Controls water quality and environmental conditions.	2.75	M	2.60	M	2.68	M
5. Prevents and manages fish diseases.	2.60	M	2.40	L	2.50	M
6. Harvests and handles fish for market or consumption.	2.70	M	2.50	L	2.60	M
7. Keeps records of aquaculture activities and production.	2.55	L	2.35	L	2.45	L
8. Implements safety and sanitation standards.	2.60	M	2.50	L	2.55	M
9. Demonstrates proper handling and stocking of fingerlings.	2.75	M	2.55	L	2.65	M
10. Utilizes basic aquaculture tools and technologies effectively.	2.60	M	2.45	L	2.53	M
Total	2.67	M	2.49	L	2.58	M

LEVEL OF COMPETENCE OF TLE TEACHERS IN FISH CAPTURE AS PERCEIVED BY THE TEACHERS AND SCHOOL HEADS

Table 5 shows the level of competence of TLE teachers in Fish Capture as perceived by teachers and school heads. Most indicators were rated as Moderate, with overall mean scores ranging from 2.45 to 2.68. Teachers received higher ratings in identifying fish species, maintaining fishing tools, and using proper handling techniques, suggesting adequate competence in basic fish capture practices. Lower ratings were observed in applying sustainable fishing practices and observing maritime laws, indicating areas needing improvement. The total overall mean of 2.56, interpreted as Moderate, indicates that while TLE teachers demonstrate basic competence in fish capture, additional training, practical exposure, and support are needed to strengthen their skills and instructional effectiveness in this strand.

Table 5
Level of Competence of TLE Teachers in Fish Capture as Perceived by the Teachers and School Heads

Indicators	Teachers		School Heads		Overall	
	Mean	DE	Mean	DE	Mean	DE
1. Identifies appropriate fishing gear and equipment.	2.70	M	2.50	L	2.60	M
2. Demonstrates proper handling of fishing vessels.	2.65	M	2.45	L	2.55	M
3. Conducts safe and efficient fishing operations.	2.60	M	2.40	L	2.50	M
4. Applies sustainable fishing practices.	2.55	L	2.35	L	2.45	L

Indicators	Teachers		School Heads		Overall	
	Mean	DE	Mean	DE	Mean	DE
5. Processes and stores catch following food safety standards.	2.65	M	2.50	L	2.58	M
6. Performs basic navigation and weather reading.	2.60	M	2.40	L	2.50	M
7. Maintains the cleanliness and functionality of fishing tools.	2.70	M	2.55	L	2.63	M
8. Identifies fish species and their characteristics.	2.75	M	2.60	M	2.68	M
9. Observes maritime laws and fishing regulations.	2.55	L	2.40	L	2.48	L
10. Keeps records of catch and fishing operations.	2.65	M	2.50	L	2.58	M
Total	2.64	M	2.47	L	2.56	M

LEVEL OF COMPETENCE OF TLE TEACHER IN FOOD & FISH PROCESSING AS PERCEIVED BY THE TEACHERS AND SCHOOL HEADS

Table 6 presents the level of competence of TLE teachers in Food and Fish Processing as perceived by teachers and school heads. Overall, the indicators were mostly rated as Moderate, with some rated High, and overall mean scores ranging from 3.20 to 3.48. Higher ratings were observed in maintaining cleanliness and hygiene, operating basic food processing tools, applying food preservation techniques, and estimating costs and pricing, suggesting that teachers demonstrate strong competence in practical and operational aspects of food processing. Indicators related to food regulations, documentation, and packaging received relatively lower ratings, indicating areas that may require further development. The total overall mean of 3.33, interpreted as Moderate, indicates that TLE teachers possess satisfactory competence in food and fish processing, but targeted training and continuous skills enhancement are recommended to improve both technical proficiency and instructional effectiveness in this strand.

Table 6
Level of Competence of TLE Teacher in Food & Fish Processing as Perceived by the Teachers and School Heads

Indicators	Teachers		School Heads		Overall	
	Mean	DE	Mean	DE	Mean	DE
1. Prepares raw ingredients for processing.	3.45	H	3.20	M	3.33	M
2. Applies various food preservation techniques (salting, drying, freezing, etc.).	3.50	H	3.30	M	3.40	M
3. Practices good manufacturing and food safety standards.	3.30	M	3.10	M	3.20	M
4. Operates basic food processing tools and equipment.	3.55	H	3.25	M	3.40	M
5. Packages and labels processed products correctly.	3.40	M	3.15	M	3.28	M
6. Maintains cleanliness and hygiene in processing areas.	3.60	H	3.35	M	3.48	H
7. Estimates cost and pricing of processed goods.	3.50	H	3.25	M	3.38	M
8. Demonstrates knowledge of government food regulations.	3.30	M	3.10	M	3.20	M
9. Manages small-scale food processing operations.	3.45	H	3.20	M	3.33	M
10. Keeps documentation for traceability and quality control.	3.40	M	3.15	M	3.28	M
Total	3.45	H	3.21	M	3.33	M

SUMMARY OF THE LEVEL OF COMPETENCE OF TLE TEACHERS IN AGRI-FISHERY ARTS AS PERCEIVED BY THE TEACHERS AND SCHOOL HEADS

The overall level of competence of TLE teachers across the Agri-Fishery Arts strands, as shown in the table, indicates that teachers generally demonstrated a moderate level of proficiency. Among the strands, Food and Fish Processing received the highest overall rating (3.33), reflecting stronger competence in practical processing skills, while Aquaculture and Fish Capture received the lowest ratings (2.58 and 2.56, respectively), suggesting areas that require further improvement. Crop Production and Animal Production were rated moderately (3.09 and 3.36), indicating satisfactory performance in these core areas. The total average weighted mean of 2.99, interpreted as Moderate, implies that while TLE teachers have an adequate foundation across the five Agri-Fishery Arts strands, continuous professional development, targeted training, and instructional support are needed to enhance their overall competence and ensure effective delivery of technical and practical lessons.

Table 7
Summary of the Level of Competence of TLE Teachers in Agri-Fishery Arts as Perceived by the Teachers and School Heads

Agri-Fishery Arts Strands	Teachers		School Heads		Overall	
	Mean	DE	Mean	DE	AWM	DE
1. Crop Production	3.00	M	3.18	M	3.09	M
2. Animal Production	3.38	M	3.33	M	3.36	M
3. Aquaculture	2.67	M	2.49	L	2.58	M
4. Fish Capture	2.64	M	2.47	L	2.56	M
5. Food & Fish Processing	3.45	H	3.21	M	3.33	M
Total	3.03	M	2.94	M	2.99	M

SIGNIFICANT DIFFERENCES IN THE LEVEL OF COMPETENCE OF TLE TEACHERS IN AGRI-FISHERY ARTS AS PERCEIVED BY TEACHERS AND SCHOOL HEADS

Table 8 presents the comparison of the perceived level of competence of TLE teachers in Agri-Fishery Arts between teachers and school heads. The data show that, although slight differences exist in the mean ratings for each strand—for example, Food and Fish Processing was rated higher by teachers (3.45) than school heads (3.21), while Aquaculture and Fish Capture were rated lower by school heads—these differences were not statistically significant. The computed t-value of 0.2853 is less than the critical value

of 2.326 at the 0.05 level of significance, leading to the acceptance of the null hypothesis. This indicates that there is no significant difference between the perceptions of teachers and school heads regarding the overall competence of TLE teachers in Agri-Fishery Arts, suggesting a shared understanding and agreement on teachers' performance across all strands., such as aquaculture and fish capture.

Table 8
Significant Differences in the Level of Competence of TLE Teachers in
Agri-Fishery Arts as Perceived by Teachers and School Heads

Competence	Teachers		School Heads	
	AWM	DE	AWM	DE
1. Crop Production	3.00	M	3.18	M
2. Animal Production	3.38	M	3.33	M
3. Aquaculture	2.67	M	2.49	L
4. Fish Capture	2.64	M	2.47	L
5. Food & Fish Processing	3.45	H	3.21	M
Total	3.03	M	2.94	M

Computed t-value: 0.2853@ df 4
Alpha: @ 0.05 level of significance
Critical Value: 2.326 , df 4
Decision: accept the null hypothesis
Interpretation: No significant difference

DEGREE OF SERIOUSNESS OF THE PROBLEMS ENCOUNTERED CONCERNING THE COMPETENCE OF PUBLIC JUNIOR HIGH SCHOOL TLE TEACHERS IN AGRI-FISHERY ARTS

Table 9 presents the degree of seriousness of problems encountered by TLE teachers in Agri-Fishery Arts as perceived by the teachers themselves. The results show that the most serious problem was the lack of adequate tools, equipment, and facilities for practical lessons (mean = 2.75, ranked 1), followed by limited training or seminars on Agri-Fishery Arts content and pedagogy (mean = 2.61, ranked 2) and inadequate budget for consumable materials and supplies (mean = 2.52, ranked 3). Problems such as insufficient instructional materials, overcrowded classes, lack of technical support, difficulty integrating all five TLE areas, and students' lack of interest or motivation were rated as moderately serious, with means ranging from 2.07 to 2.35. The least serious problem identified was the impact of administrative tasks on lesson preparation time (mean = 1.60, ranked 10). The total mean of 2.28, interpreted as moderately serious, indicates that while several challenges affect the delivery of TLE–Agri-Fishery Arts instruction, they are not overwhelmingly critical but still require targeted interventions to improve teaching effectiveness.

Table 9
Degree of Seriousness of Problems Encountered

Indicators	Teachers		Rank
	Mean	DE	
1. Lack of adequate tools, equipment, and facilities for practical lessons	2.75	S	1

2. Insufficient instructional materials or updated references	2.31	MS	5
3. Limited training or seminars on TLE-Agri-fishery arts content and pedagogy	2.61	S	2
4. Overcrowded classes that hinder effective supervision of hands-on activities	2.35	S	4
5. Lack of technical support in Agri-fishery arts	2.20	MS	7
6. Inadequate budget for consumable materials and supplies	2.52	S	3
7. Difficulty integrating all 5 areas of TLE -Agri-fishery within a limited time	2.14	MS	8
8. Students' lack of interest or motivation in practical work	2.07	MS	9
9. Difficulty keeping up with industry-relevant or updated technologies	2.25	MS	6
10. Too many administrative tasks affect the time for lesson preparation	1.60	LS	10
Total	2.28	MS	

Conclusion

The study revealed that the level of competence of TLE teachers in Agri-Fishery Arts in District I, Division of Manila City, is generally moderate across the five strands: Crop Production, Animal Production, Aquaculture, Fish Capture, and Food and Fish Processing. Both teachers and school heads shared similar perceptions of teachers' competence, indicating consistency in the assessment of instructional skills and technical proficiency across classrooms. Among the strands, Food and Fish Processing showed the highest competence, while Aquaculture and Fish Capture were identified as areas needing improvement. The problems encountered by teachers, such as lack of adequate tools, equipment, and facilities, limited training, and insufficient instructional materials, were rated as moderately serious, suggesting that these challenges affect the effective delivery of practical and technical lessons.

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