

Developing Technical Skills of Technology and Livelihood Education Secondary Teachers in the Province of Batangas

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Abstract: The study assessed the level of competencies of TLE teachers in the Province of Batangas relative to their instructional performance in accordance with prescribed TESDA regulations. It determined the teachers' profile and their extent of manifestation of competencies along the areas of TLE. It also measured the teachers' level of competencies in content knowledge, methods, classroom management, ICT integration and evaluation. The descriptive design was used, with a research-made questionnaire as main data gathering instrument. Interviews and FGD's were conducted to substantiate key findings. Results revealed that teachers greatly manifest competencies in Home Economics and Industrial Arts, while they moderately manifest competencies in Agri-Fishery Arts and ICT. Teachers are generally very competent in terms of knowledge content, use of strategies and methods, classroom management, integration of ICT, and assessment and evaluation. Further, teachers need to strengthen their skills in applying a range of teaching strategies. They also need to attend more TLE-focused trainings and improve their ICT skills for lesson integration. As a result of the findings, a competency management program was developed to enhance the level of competencies of TLE teachers in the Province of Batangas.

Keywords: Competency management program, level of competencies, technical skills, technology, livelihood education.

1. Introduction

In any professional field, the basic pre-requisite for recruitment and promotion is competence, or the combination of basic skills, knowledge, and attitude of an individual. It involves the acquired knowledge, exerted effort, and professional experience all of which facilitate task completion. (Nijveldt, et al., 2001). Main and Hammond (2008) contend that competency also encompasses personal characteristics which, when owned and used, lead to completion of task or position. In school, competencies strengthen one another and start with the basic then move on to the advanced levels as learning progresses. (Council on Education for Public Health, 2006).

In the professional world of teaching, a teacher's competency comprises of personal, professional, and social aspects. This includes teaching, as an expert in the subject and in theories related to teaching and learning, as well as in managing learning processes and adapting oneself in the community (Klassen & Chiu, 2010). Teacher education institutions in many parts of the

world explore ways of using competencies to assist the professional development of teachers without undermining the quality of instruction. Pre-service education programs that teachers usually undergo do not guarantee competence that would meet the demands of development. Thus, it becomes imperative that schools continue to examine and reinforce the initial and ongoing formation of teachers to make them more effective and competent.

Educators, play a great role in training and preparing the youth for the country to become competitive in the 21 centuries. They are considered the most important resources in an educational system. They bring organization to life, make it work, and give its distinctive character. The quality of an educational institution to a great extent depends on the excellence and competency of its faculty. Hence, teacher competency should be ensured, especially in subject areas that have a direct relevance and impact to society, such as Technology and Livelihood Education.

Technology and Livelihood Education is one of the subjects in the Enhanced Basic Education Curriculum of the Department of Education (DepEd). This subject teaches competencies to students that are very useful in everyday living. To highlight its worth in the K-12 Basic Education Program (BEP), the DepEd has formed a Technical Vocational unit in the Bureau of Secondary Education. For them, this unit needs strengthening as one of the three key strands that will prepare high school graduates by arming them with skills for employment.

The main goal of teaching technical and vocational education in the K to 12 Basic Education Program is to prepare students for the world of work through the acquisition of theoretical and practical skills. The students are expected to be equipped with the necessary knowledge within their trades in order to face the challenges of the labor market.

In view of the above, the K-12 program trains students to join the workforce, as one of its key mandates. The TLE or technological livelihood education subjects in junior high school or JHS follow the rules of the Technical Education and Skills Development Authority or TESDA. This will allow the students to earn a national certification (NC) required by the industry, which students can eventually get once they enter

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senior high school.

Each TLE subject in Grades 7 and 8 is exploratory in nature. This means that each student has the chance to explore the following four main courses of TLE. Agri-Fishery Arts, Home Economics, Information and Communications Technology (ICT), and Industrial Arts. Students can choose a maximum of four TLE mini courses in Grade 7 and another four in Grade 8 whichever the school offers per locality's needs and school assets. In Grades 7 and 8, the student does not yet earn a Certificate of Competency (COC). The exploratory courses are a prelude to earning a COC in Grade 9 and an NC I/II in 10th grade.

In Grade 9, the student chooses one course to focus on from among the exploratory courses chosen in 7th and 8th grades. Under this level, the student can earn a COC. In Grade 10, the student pursues the TLE specialization course chosen in 9th grade. This allows the student to get at least an NC Level I or II (NC I or II) based on the TLE course chosen.

Incoming Grade 11 students will study core compulsory subjects and a required specialty. They can choose from the three main tracks: Academic, Technical-Vocational-Livelihood (TVL), and Sports and Arts. If the students pick the TVL track as specialty in senior high school, they will continue the TLE course they studied in 9th and 10th grades. This will allow them to earn NC II that they can use as credentials in applying for a job if they want to work after SHS graduation. Yet, if the students will study further, they can pursue the TVL track and earn a bachelor's degree in a related field.

Despite this well-designed program, a lot of challenges have been taking place in the global academic arena including TVET institutions, which has resulted in the need for continuous learning and updating competencies of TVET teachers across all ages (Ali, 2015). Therefore, developing country in the world need to have competent teachers by ensuring that effective education, training, and preparation are in place. In order to be among the world players, institutions need to provide competent teachers with new and advanced skills so that they could meet the challenges of real time in their respective institutions or workplace (Salleh, Sulaiman & Frederiksen, 2014). One of these challenges is the apparent gap between what is learned in school and what is needed in the industry.

The existing technical skills gap between the students of technical and vocational education and the industry has become a major concern by parents, business leaders, and educators in the country. Employers have continually expressed their concern over the present graduates of technical and vocational education programs for their lack of relevant skills required for employment. Therefore, the technical teachers who are responsible for the education, training, and preparation of students for skills acquisition have to address the issues in the cause of delivering their duties.

Indeed, the prospect of competent TVET teachers will bring about the needed manpower development in related fields of science and technology and will advance career opportunities by producing competent workforce who will drive dynamic economic growth and development (Njati, 2016). Therefore, it could be argued that the competent TVET teacher means a

teacher with sufficiency of skills, knowledge, and attitude or behavior. By extension these attributes can be regarded as competencies that teachers need to achieve academic outcomes.

It is for these reasons that the researcher is motivated to conduct this study to assess the level of competency of TLE teachers and to develop a competency management program that will optimize their competencies in the delivery of instruction especially in teaching specialization subjects. It is hoped that this provides a direct contribution that would help bridge the skills gap and enhance the competency of teachers towards optimum development.

2. Objectives

This study assessed the level of competency of Technology and Livelihood Education teachers in the Province of Batangas relative to their instructional performance in accordance with the prescribed TESDA regulations. Specifically, it aimed to accomplish the following:

1. Describe the personal and professional characteristics of TLE teachers in terms of:
 - 1.1 age;
 - 1.2 sex;
 - 1.3 area of specialization;
 - 1.4 number of years teaching;
 - 1.5 highest educational attainment;
 - 1.6 seminars and trainings attended and;
 - 1.7 number of completed and presented researches
2. Determine the level of manifestation of competencies along the four areas of TLE, namely:
 - 2.1 Home Economics;
 - 2.2 Industrial Arts;
 - 2.3 Information and Communications Technology, and;
 - 2.4 Agri-Fishery Arts
3. Measure the level of competencies of TLE teachers in terms of:
 - 3.1 knowledge of content within and across curriculum teaching areas;
 - 3.2 strategies and methods;
 - 3.3 classroom management;
 - 3.4 integration of ICT and;
 - 3.5 assessment and evaluation.
4. Show whether there is a significant relationship between the level of competencies of TLE teachers and their profile variables.
5. Identify the competency needs of TLE teachers.
6. Develop a competency management program for TLE teachers.

3. Methods

The study used the descriptive method of research as it aimed to assess the level of competencies of TLE teachers in the Province of Batangas. According to Frankel (2010), descriptive research involves looking into the present situation and describing it using quantitative measurements. This method involves collection of data as an attempt to examine the situation in order to establish the norm and to predict what will

happen under same circumstances.

This research design was selected as it can be used to assess the characteristics of individuals or groups of physical environments such as teachers of particular schools. The study used this method in gathering data and information towards the development of a competency management program for TLE, geared of enhancing the instructional performance of TLE teachers in the Province of Batangas.

A researcher-constructed questionnaire was utilized in this study to gather important data relative to the study. To substantiate the data gathered, the researcher also conducted interviews and focus group discussion.

Subjects of the Study:

The respondents of the study were 284 TLE teachers from selected secondary schools in the Province of Batangas. These respondents were chosen through stratified random sampling. Moreover, to arrive at the actual number of respondents, the sample size determination formula was used at 0.5 level of significance. In order to validate the instrument of this study, a pilot run was conducted involving 20 teachers who are not part of the actual study.

Data Gathering Instrument:

The study utilized a research-made questionnaire, as main gathering tool. Interviews and focused group discussion (FGD) were done to substantiate relevant findings. Unstructured questions for the interview were used to guide the researcher in getting additional information while the FGD agenda was used to provide direction during the FGD.

Questionnaire: The survey questionnaire was developed in fidelity to the specific objectives stated as reasons for constructing the study. It was based on the concepts and related studies as inputs to the instrument.

Construction: The instrument was used to answer the research objectives related to the level of competencies of TLE junior high school teachers and their competency needs in teaching specialization courses of TLE. The questionnaire consisted of three parts. The first part focuses on the personal and professional characteristics of TLE teachers, including age, sex, are of specialization, number of years in teaching, highest educational attainment, seminars and trainings attended, and number of completed and presented researches. The second part includes the level of competencies along the four areas: home economics, agri-fishery arts, information, and communications technology and industrial arts. The last part involves the competencies of TLE teachers.

Validation: Experts in the field of research were requested to evaluate, in independent rounds, if the questionnaire has theory, construction or content validity. The results of the validation were incorporated in the final design of the instrument.

Also, a reliability test was conducted to ensure the reliability of the instrument. Cronbach's alpha was used for this purpose. Results of the test showed high reliability and internal consistency with values ranging from 0.8102 to 0.9841 which meant good to excellent reliability and consistency.

Administration: Necessary permits were acquired by the researcher in order to distribute the questionnaires, as well as to conduct interviews and Focus Group Discussion. Permits were

secured from various offices in order to follow the protocols of research and instrument distribution in DepEd Batangas. The respondents were asked to answer the questionnaire after permission was granted. The responses were kept confidential; Data Privacy Act was also strictly followed in the use of information given by the respondents. The respondents were also guided in cases where they need additional explanations related to the items given in the questionnaire.

A week was given to the respondents in order for them to analyze the items carefully. Follow-ups were made as necessary, while still ensuring that no pressure was given to the respondents. After the allotted time, retrieval was done ensuring 100% retrieval rate.

Scoring of Responses: A four-point scale was used to score responses to the questionnaire items. The range and verbal interpretations are as follow:

Option	Scale/Range	Verbal Interpretations
4	3.50 – 4.00	Greatly Manifested/Very Competent
3	2.50– 3.49	Moderately Manifested/ Moderately Competent
2	1.50 – 2.49	Slightly Manifested/ Slightly Competent
1	1.00 – 1.49	Least Manifested/Least Competent

Interview. Unstructured interview were conducted to add necessary information to the data obtained from the questionnaire. There were five questions answered by teachers and heads to assess the level of competencies of TLE teachers in order to identify the competency needs in teaching specialization courses. The interviews were done after the retrieval of the questionnaires. A total of 55 teachers were interviewed, and their responses were recorded and provided support to the quantitative data.

Focus Group Discussion. This was conducted among the respondents to verify the responses obtained from the research instrument. Selected public secondary TLE junior high school teachers were invited to serve as discussants on matters regarding the level of competencies of TLE junior high school teachers, and the competency needs in teaching specialization courses of TLE. The FGD agenda were developed to facilitate the flow of group discussion. TLE teachers had insightful conversations regarding the issues and concerns in TLE instruction. The FGD took place on December 10, 2020, via google meet.

Assessing the level of competencies of TLE junior high school teachers in teaching specialization courses was at the core of the discussion. Issues and concerns regarding the attainment of learner's National Certificate I and II were also discussed. The group shared some of the issues and concerns in their respective schools, as well as the responsibilities that they undertake.

Data Gathering Procedure:

Prior to any data gathering activity, an initial permit from the Schools Division Superintendent was solicited. Afterwards, the researcher asked permission from the principals of the target schools. Upon securing the necessary permission, the

researcher started to distribute the questionnaire to the respondents. The distribution of questionnaires was done according to the date and time agreed by the researcher and the administrators. The data gathered were tabulated for statistical treatment.

The interview was done through a face-to-face encounter to solicit new ideas from the interviewees using guidelines to ensure that the same general ideas were generated. The questions were prepared beforehand, and all the responses were recorded. The interviews were done in separate instances. On the other hand, the Focus Group Discussion was done at a pre-determined time and place. The discussions were facilitated by the researcher and the ideas were recorded to ensure complete capturing of ideas. The topics for discussion were prepared before the FGD and the discussants were made aware of the objectives of the study, as well as the recording of the discussion to verify gathered information.

Statistical Treatment of Data:

The data gathered were tabulated, analyzed, and interpreted using the following statistical tools:

Frequency Count. This was used to determine the distribution of responses in terms of personal and professional characteristics with their corresponding categories for each profile.

Percentage. This was used to determine the weight of certain profile variables to the totality of the responses.

Weighted Mean. This was used to measure the degree or level of responses in each item.

Chi-Square Test. This was used to test the relationship between the personal and professional characteristics of TLE teachers and their profile variables.

4. Results and Discussion

This study assessed the level of competency of TLE teachers relative to their instructional performance in accordance with the prescribed TESDA regulation. Likewise, it described the personal and professional characteristics of TLE teachers and determined the competencies along the four areas of TLE: Home Economics, Industrial Arts, Information and Communications Technology and Agri-Fishery Arts.

It also measured the level of competencies of TLE teachers in terms of knowledge of content within and across curriculum teaching areas, strategies and methods, classroom management, integration of ICT, and assessment and evaluation. Furthermore, it tested whether there was a significant relationship in the level of competencies of TLE teachers and their profile variables.

The study utilized the descriptive research design, with a researcher-made questionnaire as primary data gathering instrument. Quantitative results are supported by interview and focus group discussion. A total of 284 TLE teachers from the Province of Batangas served as respondents.

After a careful and thorough analysis of the gathered data, this study yielded these salient findings:

1. Profile of the TLE Teachers

The profile of TLE teachers in terms of age, sex, specialization, years in teaching, highest educational

attainment, seminars attended, and research productivity was determined in this study.

1.1. **Age.** Majority of the respondents are 36 years old or older, comprising 58.45% of the TLE teachers. Only 24.65% are 26-35 years old, while those who are 25 years old or younger comprise 16.9% of the population.

1.2. **Sex.** A great majority of the respondents (246 or 86.62%) are female while only 38 or 13.38% are male teachers, showing how female teachers greatly outnumber their male counterparts.

1.3. **Area of specialization.** There are 186 Home Economics majors, 42 Industrial Arts majors and 38 Information and Communications Technology, and 18 Agri-Fishery Arts majors among the respondents.

1.4. **Number of years teaching.** In terms of length of service, 141 respondents have served for less than 10 years, 85 respondents have served for 10 to 19 years already, and 58 respondents have served for 20 years or more. This shows that the majority of TLE teachers in Batangas are still relatively young in the field.

1.5. **Highest Educational Attainment.** Out of the 284 respondents, 172 have finished their Baccalaureate degree and 112 respondents have advanced degrees. Advanced degrees include those with Masters' and Doctorate Degrees showing that very few TLE teachers have engaged in post-graduate studies.

1.6. **Seminars and Training attended.** Majority of the respondents or 55.99% have attended six to eight seminars while 29.58% have attended less than five seminars. There were also only 41 respondents or 14.44% who claimed to be very active in participating in seminars and trainings as they have attended nine or more seminars.

1.7. **Number of Completed and Presented Researches.** Majority or 187 of the respondents (65-85) have presented at most one research. There are 97 respondents (34.15%) have experienced presenting research work twice or more.

2. Respondents' Level of Competencies on the Four Areas of TLE

The TLE teachers' level of competencies in Home Economics, Industrial Arts, Agri-Fishery Arts and Information and Communications Technology was assessed in this study.

2.1. **Home Economics.** Competencies relative to Home Economics are greatly manifested by the respondents. Further analysis revealed that respondents show great manifestations in terms of improving attitudes toward home economics which got the highest mean value.

2.2. **Industrial Arts.** Competencies related to Industrial Arts are also greatly manifested by teachers. The analysis showed that the respondents greatly manifest practices on basic housekeeping procedures, observation of safety precaution in doing work, reading and following instructions before using any equipment.

2.3. **Agri-Fishery Arts.** Competencies related to Agri-Fishery arts are moderately manifested by the respondents. Specifically, they observe the 5C's principle in their work area, determine areas of concern for safety measures, and apply appropriate safety measures in the workplace.

2.4. **Information and Communications Technology.**

Competencies relative to Information and Communications Technology are moderately manifested by the respondents. Generally, teachers use computers to collect and communicate information to students, colleagues, and parents.

3. Competencies of TLE teachers

The study also assessed the competencies of TLE teachers along five areas.

3.1. Knowledge of content within and across curriculum teaching areas. TLE teachers were found to be very competent in terms of knowledge of content within and across curriculum teaching areas. Having the highest assessment was their skills in motivating learners to create and establish connections between topics.

3.2. Strategies and Methods. In terms of strategies and methods, it was revealed that the respondents are very competent, especially in encouraging students to articulate thoughts and ideas clearly and effectively.

3.3. Classroom Management. The data revealed that the respondents are very competent when it comes to maintaining a safe and orderly classroom that facilitates student learning, as well as in managing student behavior positively through effective communication to defuse and deescalate disruptive or dangerous behavior.

3.4. Integration of ICT. The analysis showed that the respondents are very competent in terms of ICT integration. It was seen that they integrate technology into their instruction to maximize student learning.

3.5. Assessment and Evaluation. In terms of assessment, the respondents were found to be very competent, especially in monitoring student progress toward instructional goals, and reporting assessment results for school-level analysis, evaluation, and decision-making.

4. Relationship in the level of competencies of TLE teachers and their profile variables

There are no significant relationship between the respondents' age and sex. The level of competencies on knowledge of content within and across curriculum teaching areas, strategies and methods, classroom management, integration of ICT, and evaluation and assessment. There are significant relationship between their area of specialization and strategies and method, classroom management, integration of ICT, and evaluation and assessment.

Similarly, significant relationships are established between respondents' number of years of teaching experience and their knowledge of content within and across curriculum teaching areas, strategies and methods, classroom management, integration of ICT, and evaluation and assessment. However, there are no significant relationship between the respondents' highest educational attainment and their knowledge of content within and across curriculum teaching areas, strategies and methods, classroom management.

Significant relationship were seen between the teachers' highest educational attainment and their integration of ICT. Significant relationship were also observed between the number of seminars and trainings attended and their strategies and methods, classroom management, integration of ICT, and evaluation and assessment.

Lastly, there was a significant relationship between the respondents' number of completed and presented researches and their knowledge of content within and across curriculum teaching areas, classroom management, integration of ICT and evaluation and assessment.

5. Competency needs of TLE teachers.

Analysis yielded that there is a need to strengthen the teachers' skills in applying a range of teaching strategies through LAC sessions. Teachers also need to attend different TLE-focused seminars and trainings to develop competencies in teaching TLE. Improving TLE teachers' ICT skills to address learning goals for daily lesson integration was also found to be a need among teachers.

There was also a need in terms of engaging faculty members in collegial coaching to brainstorm on best teaching methodologies, supporting TLE teachers by transforming weak areas into strengths through technical assistance, and equipping laboratory rooms with complete tools, equipment and paraphernalia for each course offered.

6. Competency Management Program for TLE teachers

As a result of the key findings, the researcher proposed a competency management program specifically for TLE teachers. This program has three major activities, all geared towards the enhancement of competencies of TLE teachers. The program is designed for TLE teachers in Batangas, and focuses on improving their capacities on research, ICT integration, and participation in professional development activities.

This below tables presents the data gathered in the study.

Table 1
Distribution of Respondents

Division	TLE Teachers	
	Population	Sample size
Batangas Province	702	201
Batangas City	127	36
Lipa City	61	17
Tanauan City	105	30
Total	995	284

Table 2
Personal and Professional Characteristics of TLE teachers in terms of Age

Age	Frequency	Percentage
36 - 45 years old	105	36.97
26 - 35 years old	70	24.65
46 years old or older	61	21.48
25 years old or younger	48	16.90
Total	284	100

Table 3
Personal and Professional Characteristics of TLE teachers in terms of Sex

Sex	Frequency	Percentage
Female	246	86.62
Male	38	13.38
Total	284	100

Table 4
Personal and Professional Characteristics of TLE teachers in terms of Area of Specialization

Specialization	Frequency	Percentage
Home Economics	186	65.49
Industrial Arts	42	14.79
Information and Communications Technology	38	13.38
Agri-Fishery Arts	18	6.34
Total	284	100

Table 5
Personal and Professional Characteristics of TLE teachers in terms of Number of Years Teaching

Number of years teaching	Frequency	Percentage
less than 10 yrs.	141	49.65
10-19 yrs.	85	29.93
20 yrs. or more	58	20.42
Total	284	100

Table 6
Personal and Professional Characteristics of TLE teachers in terms of Highest Educational Attainment

Educational Attainment	Frequency	Percentage
Bachelor's Degree	172	60.56
Graduate Studies (Master's / Doctorate Degree)	112	39.44
Total	284	100

Table 7
Personal and Professional Characteristics of TLE teachers in terms of Number of Seminars and Trainings Attended

Number of Seminars and Training attended	Frequency	Percentage
9 and above	41	14.44
6 – 8	159	55.99
5 and below	84	29.58
Total	284	100

Table 8
Personal and Professional Characteristics of TLE teachers in terms of Number of Completed and Presented Researches

Number of Research presented	Frequency	Percentage
At most 1	187	65.85
2 or more	97	34.15
Total	284	100

Table 9
Level of Competencies in Home Economics

ITEMS	W.M.	V.I.
1. Improve attitudes toward home economics	3.63	GM
2. Promote transfer of learning from the classroom to the home	3.62	GM
3. Create more interest in and understanding of concepts of homemaking	3.54	GM
4. Be responsible citizens and informed consumers willing to contribute to the well-being of individuals, families and society in terms of meeting basic human needs	3.54	GM
5. Demonstrate good use of management and organizational skills in handling physical and socio-economic resources for self, family, community and society	3.54	GM
6. Develop capability, values, and attitudes to make informed decisions that foster a healthy lifestyle and contribute positively to the social and economic future of a society	3.52	GM
7. Analyze contextual factors contributing to the well-being of individual, family, and society with application of knowledge from the Home Economics	3.49	MM
8. Implement strategies to solve complicated problems in technological contexts in particular, food / fashion, using a range of appropriate techniques and procedures	3.46	MM
9. Evaluate critically the impact of social, cultural, economic scientific and technological developments on the well-being of individuals, families, and society as a whole	3.46	MM
10. Assist in the development of critical thinking and independent study habits	3.45	MM
11. Develop an aesthetic sense and creativity through the design and production processes	3.45	MM
Composite Mean	3.52	GM

Table 10
Level of Competencies in Industrial Arts

ITEMS	W.M.	V.I.
1. Practice basic housekeeping procedures	3.60	GM
2. Observe safety precaution in doing his work	3.58	GM
3. Read and follow instruction before using equipment	3.57	GM
4. Observe occupational health and safety practices	3.56	GM
5. Be able to work effectively with team members and maintain effective relationship	3.50	GM
6. Perform mensuration and calculations in jobs related problems	3.49	MM
7. Supervise proper use and maintenance of tools and equipment	3.49	MM
8. Observe economy in the use of supplies and materials	3.48	MM
9. Ensure compliance with standard procedures, specifications, and manuals of instructions	3.46	MM
10. Demonstrate proper handling and maintenance of electrical measuring instruments	3.45	MM
11. Can share skills and ideas when asked to provide support to peers in the workplace	3.44	MM
12. Use the required working uniform, <u>mask</u> and goggles in the shop room	3.42	MM
Composite Mean	3.50	GM

Table 11
Level of Competencies in Agri-Fishery Arts

ITEMS	W.M.	V.I.
1. Clean the work area according to 5S principles	3.32	MM
2. Determine areas of concern for safety measures	3.31	MM
3. Apply appropriate safety measures	3.31	MM
4. Wear appropriate PPE as prescribed by OSHA	3.25	MM
5. Apply principles of 3Rs (reduce, reuse, and recycle) accordingly	3.25	MM
6. Perform preventive maintenance of tools and equipment through routine check-up and maintenance	3.21	MM
7. Perform basic workplace calculation and estimation	3.21	MM
8. Select and operate farm tools and equipment	3.19	MM
9. Safekeep tools, materials and outfit as determined by safety protocols	3.19	MM
10. Explain fisheries and environmental laws, rules, and regulations	3.12	MM
11. Process farm waste following environmental legislation and codes	3.07	MM
12. Prepare and maintain aquaculture facilities	3.06	MM
13. Perform monitoring of pests' incidence based on the prescribed procedure	3.06	MM
Composite Mean	3.20	MM

Table 12
Level of Competencies in Information and Communications Technology

ITEMS	W.M.	V.I.
1. Use computers and other technologies to collect and communicate information to students, colleagues, parents, and others	3.49	MM
2. Use appropriate office and teaching productivity tools	3.47	MM
3. Reflects on the use of ICT in their profession for development and innovation	3.47	MM
4. Demonstrate knowledge and skills in basic computer operation and other information devices, including basic troubleshooting and maintenance	3.46	MM
5. Make use of networks to access information, colleagues, and outside experts	3.45	MM
6. Understand and effectively use the internet and network applications and resources	3.43	MM
7. Apply technology to develop students' higher order thinking skills and creativity	3.43	MM
8. Provide performance tasks that require students to locate and analyze information and use a variety of media to clearly communicate results	3.43	MM
9. Apply technology to facilitate a variety of appropriate assessment and evaluation strategies recognizing the diversity of learners	3.43	MM
10. Demonstrate knowledge and skills in information and data management	3.42	MM
11. Conduct open and flexible learning environments where technology is used to support a variety of interactions among students, cooperative learning, and peer instruction	3.40	MM
12. Evaluate usage of ICT integration in the teaching-learning process and use the results to refine the design of learning activities	3.40	MM
Composite Mean	3.44	MM

Table 13
Competencies of TLE teachers in terms of Knowledge of Content Within and Across Curriculum Teaching Areas

ITEMS	W.M.	V.I.
1. Motivate learners to create and establish connections between subject matters	3.63	VC
2. Use examples from other teaching areas to make explanations concrete and forceful	3.62	VC
3. Encourage students to investigate the content area to expand their knowledge and satisfy their natural curiosity	3.61	VC
4. Demonstrate a knowledge of their subject by relating it to other disciplines	3.59	VC
5. Demonstrate an appropriate level of content knowledge in their specialty	3.58	VC
6. Understand students' cultural backgrounds, interests, skills, and abilities as they apply across a range of learning domains and/or subject areas	3.58	VC
7. Understand the influence of diversity and planning instruction accordingly	3.56	VC
8. Relate subject matter to contents from other learning areas	3.56	VC
9. Understand students' motivations and their interests in specific class content	3.56	VC
10. Use materials or lessons that counteract stereotypes and acknowledge the contributions of all culture	3.51	VC
11. Incorporate different points of view in instruction	3.51	VC
12. Relate global awareness of the subject	3.51	VC
Composite Mean	3.57	VC

Table 14

Competencies of TLE teachers in terms of Strategies and Methods		
ITEMS	W.M.	V.I.
1. Encourage students to articulate thoughts and ideas clearly and effectively	3.62	VC
2. Help engage students in active learning opportunities	3.61	VC
3. Integrate specific instruction that helps students develop the ability to apply processes and strategies for critical thinking and problem solving	3.59	VC
4. Use a variety of methods and materials suited to the needs of all students	3.59	VC
5. Promote the development of critical thinking, problem solving, and performance capabilities	3.58	VC
6. Help students assume responsibility for identifying and using learning resources	3.58	VC
7. Identify gains and difficulties students are experiencing in learning and performing	3.58	VC
8. Use a variety of methods to communicate effectively with all students	3.57	VC
9. Adjust instruction as needed	3.57	VC
10. Give contingent, specific, and credible praise and feedback	3.54	VC
11. Reflect on the impact of strategies used in teaching based on actual results	3.52	VC
12. Use a variety of research-verified approaches to improve teaching and learning	3.42	MC
Composite Mean	3.56	VC

Table 15

Competencies of TLE teachers in terms of Classroom Management		
ITEMS	W.M.	V.I.
1. Maintain a safe and orderly classroom that facilitates student learning	3.74	VC
2. Manage student behavior positively through effective communication to defuse and deescalate disruptive or dangerous behavior	3.70	VC
3. Maintain a positive and nurturing learning environment	3.70	VC
4. Promote teamwork, planning, and communication	3.69	VC
5. Implement policies and practices positively affecting students' learning	3.68	VC
6. Promote positive relationships, cooperation, and purposeful learning	3.67	VC
7. Maximize efficiency through maintained discipline and morale	3.66	VC
8. Use positive methods of discipline	3.66	VC
9. Set rules that are age appropriate	3.66	VC
10. Use safe and appropriate seclusion and restraint techniques	3.64	VC
11. Ensure the active and equitable engagement of students in productive tasks through organizing, assigning, and managing time, space and activities	3.64	VC
12. Structure the classroom accordingly to maintain order and	3.63	VC
Composite Mean	3.67	VC

Table 16

Competencies of TLE teachers in terms of Integration of ICT		
ITEMS	W.M.	V.I.
1. Integrate technology into their instruction to maximize student learning	3.55	VC
2. Apply technology to facilitate a variety of appropriate assessment and evaluation strategies recognizing the diversity of learners	3.54	VC
3. Know when and how to use current educational technology, as well as the most appropriate type and level of technology	3.53	VC
4. Utilize ICT as a means for efficient and effective teaching and learning situation	3.53	VC
5. Demonstrate knowledge and skills in information and data management	3.51	VC
6. Use computers and other technologies to collect and communicate information to students, colleagues, parents, and others	3.51	VC
7. Show real materials of tools and equipment to understand the key concepts or skills	3.49	MC
8. Consider the learning resource management and development system portal as source of teaching materials	3.48	MC
9. Understand and effectively use the internet and network applications and resources	3.48	MC
10. Know the most appropriate type and level of technology	3.48	MC
11. Utilize ICT to create and manage complex projects	3.48	MC
12. Manage students' computer skills in performing tasks	3.44	MC
Composite Mean	3.50	VC

Table 17

Competencies of TLE Teachers in terms of Assessment and Evaluation		
ITEMS	W.M.	V.I.
1. Monitoring student progress toward instructional goals	3.64	VC
2. Report assessment results for school-level analysis, evaluation, and decision-making	3.64	VC
3. Evaluate student progress using a variety of assessment-data measuring goals draw on appropriate data to develop classroom and instructional plans	3.63	VC
4. Collaborate with colleagues to monitor student performance and making instruction responsive to cultural differences and individual learning needs	3.61	VC
5. Communicate strengths and weaknesses based on assessment results to students, and parents or guardians	3.60	VC
6. Use multiple indicators, both formative and summative, to monitor and evaluate student progress provide evidence that students are attaining 21st-century knowledge, skills and dispositions	3.57	VC
7. Use data to provide ideas about what can be done to improve student learning	3.57	VC
8. Evaluate the effectiveness of instruction	3.56	VC
9. Articulate the performance outcomes expected of students	3.55	VC
10. Analyze assessment information gathered before and during instruction to understand each students' progress to date and to inform future instructional planning	3.55	VC
11. Display an ability to use appropriate data to identify areas of need that should be addressed in a school improvement plan	3.54	VC
12. Evaluate the effectiveness of the curriculum and materials in use	3.54	VC
13. Identify developmental levels of individual students and planning instruction accordingly assess and use resources needed to address the strengths and weaknesses of students	3.50	VC
Composite Mean	3.58	VC

Table 18

Relationship of respondents' age and their level of competencies in TLE					
Variables		Chi square-value	p-value	Decision on H0	Interpretation
Age	Knowledge of content	3.596	0.7311	Failed to Reject	Not Significant
	Strategies and Methods	5.691	0.4587	Failed to Reject	Not Significant
	Classroom Management	4.262	0.6413	Failed to Reject	Not Significant
	Integration of ICT	7.037	0.3174	Failed to Reject	Not Significant
	Evaluation and Assessment	2.462	0.8727	Failed to Reject	Not Significant

Table 19

Relationship of respondents' Sex and their Level of Competencies in TLE					
Variables		Chi square-value	p-value	Decision on H0	Interpretation
Sex	Knowledge of content	1.130	0.5683	Failed to Reject	Not Significant
	Strategies and Methods	0.620	0.7334	Failed to Reject	Not Significant
	Classroom Management	0.318	0.8528	Failed to Reject	Not Significant
	Integration of ICT	1.952	0.3768	Failed to Reject	Not Significant
	Evaluation and Assessment	2.510	0.2851	Failed to Reject	Not Significant

Table 20

Relationship of respondents' Area of Specialization and their Level of Competencies in TLE					
Variables		Chi square-value	p-value	Decision on H0	Interpretation
Area of Specialization	Knowledge of content	22.350	.0010	Reject	Significant
	Strategies and Methods	39.914	.0000005	Reject	Significant
	Classroom Management	19.769	.0030	Reject	Significant
	Integration of ICT	26.437	.0002	Reject	Significant
	Evaluation and Assessment	14.932	.0208	Reject	Significant

Table 21

Relationship of respondents' Number of Years of Teaching Experience and their Level of Competencies in TLE					
Variables		Chi square-value	p-value	Decision on H0	Interpretation
Years of Teaching	Knowledge of content	10.218	0.0369	Reject	Significant
	Strategies and Methods	13.020	0.0112	Reject	Significant
	Classroom Management	12.873	0.0119	Reject	Significant
	Integration of ICT	10.756	0.0294	Reject	Significant
	Evaluation and Assessment	10.064	0.0394	Reject	Significant

Table 22
Relationship of respondents' Highest Educational Attainment and their Level of Competencies in TLE

Variables		Chi square -value	p-value	Decision on H0	Interpretation
Highest educational attainment	Knowledge of content	5.434	0.0661	Failed to Reject	Not Significant
	Strategies and Methods	1.287	0.5255	Failed to Reject	Not Significant
	Classroom Management	5.907	0.0522	Failed to Reject	Not Significant
	Integration of ICT	7.009	0.0301	Reject	Significant
	Evaluation and Assessment	7.776	0.0205	Reject	Significant

Table 23
Relationship of respondents' Number of Seminars and Trainings Attended and their Level of Competencies in TLE

Variables		Chi square -value	p-value	Decision on H0	Interpretation
Number of seminars and trainings attended	Knowledge of content	20.864	0.0003	Reject	Significant
	Strategies and Methods	19.593	0.0006	Reject	Significant
	Classroom Management	16.591	0.0023	Reject	Significant
	Integration of ICT	21.584	0.0002	Reject	Significant
	Evaluation and Assessment	19.712	0.0006	Reject	Significant

Table 24
Relationship of respondents' Number of Completed and Presented Researches and their Level of Competencies in TLE

Variables		Chi square -value	p-value	Decision on H0	Interpretation
Number completed and presented researches	Knowledge of content	8.493	0.0143	Reject	Significant
	Strategies and Methods	2.611	0.2710	Failed to Reject	Not Significant
	Classroom Management	6.674	0.0355	Reject	Significant
	Integration of ICT	11.857	0.0027	Reject	Significant
	Evaluation and Assessment	15.723	0.0004	Reject	Significant

Table 25
Competency Needs of TLE Teachers

ITEMS	Agree		Disagree	
	Frequenc y	Percent	Frequenc y	Percent
1. Aligning the curriculum guide with the current trends of industry operations and in accordance with TESDA	272	95.77	12	4.23
2. Updating learning modules sufficient to all learners for each offered exploratory and specialization courses	270	95.07	14	4.93
3. Utilizing IDEA lesson exemplars in accordance with Philippine Professional Standards for Teachers	274	96.48	10	3.52
4. Improving TLE teachers' ICT skills to address learning goals for daily lesson integration	280	98.59	4	1.41
5. Engaging faculty members in collegial coaching to brainstorm on best teaching methodologies	278	97.89	6	2.11
6. Integrating the learners' competency assessment in the budget of work to attain National Certificates from TESDA	271	95.42	13	4.58
7. Encouraging TLE teachers to enroll in graduate studies for professional growth and development	270	95.07	14	4.93
8. Strengthening teachers' skills in applying range of teaching strategies through LAC sessions	284	100.00	0	0.00
9. Attending to the different TLE-focused seminars and trainings in developing competencies in teaching TLE	282	99.30	2	0.70
10. Supporting TLE teachers by transforming weak areas into strength through technical assistance	278	97.89	6	2.11
11. Conducting action researches that will focus on the enhancement of content knowledge and pedagogy	267	94.01	17	5.99
12. Equipping laboratory rooms with complete tools, equipment and paraphernalia for each course offered	278	97.89	6	2.11

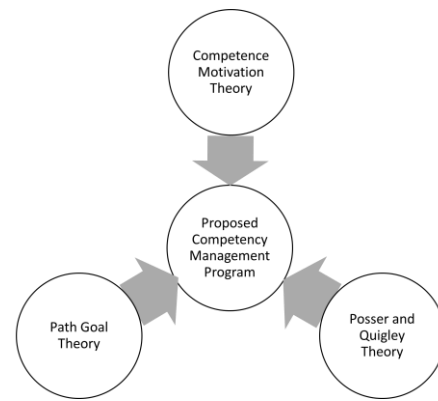


Fig. 1. Theoretical framework

Figure 1 presents the Theoretical Framework of the study, anchored on the Competence Motivation Theory, Path Goal Theory, and Prosser and Quigley Theory. The Competence Motivation Theory was used in the study as it relates to the variables concerning teacher competencies which serve as the core of the present work. Path-Goal Theory supported the management side of the study, while the Theory posted by Prosser and Quigley cover the specific content of the study, that is, Technology and Livelihood Education.

Through these theories, all aspects of the study were fully substantiated and grounded on scholarly insights. These guided the researcher in designing the study's output, which is the competency management program for TLE teachers.

Figure 2 shows the conceptual paradigm that guided the conduct of the study.

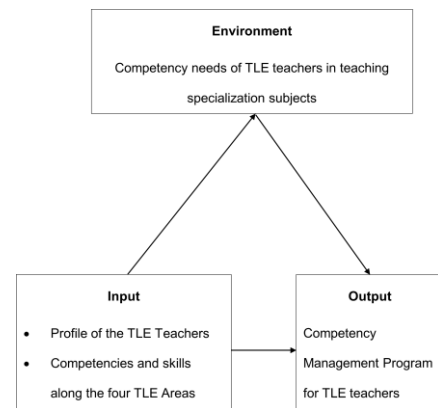


Fig. 2. Conceptual paradigm on the competency management program for TLE teachers

The Input-Environment-Outcome (IEO) model was used to visualize the flow of the research work. The input box shows items including professional and personal characteristics of the respondents. These includes age, sex, area of specialization, number of years teaching, highest educational attainment, seminars and trainings, and number of completed and presented research. It also includes the level of competencies in terms of competency in teaching TLE in specialization and exploratory courses, knowledge of content within across curriculum, strategies and methods, classroom management, integration of ICT, assessment, and evaluation.

Figure 1 presents the inter connection of the theories cited to form the study's Theoretical Framework.

The second box presents the competency needs of TLE teachers in teaching specialization subjects: Home Economics, ICT, Agri-Fishery Arts and Industrial Arts. This point to the third box which offers the output of the study. The arrows from the input box pointing towards the other two boxes signify the relationship which may directly influence the outcome of the research work.

5. Summary

This study assessed the level of competency of TLE teachers relative to their instructional performance in accordance with the prescribed TESDA regulation. Likewise, it described the personal and professional characteristics of TLE teachers and determined the competencies along the four areas of TLE: Home Economics, Industrial Arts, Information and Communications Technology and Agri-Fishery Arts.

It also measured the level of competencies of TLE teachers in terms of knowledge of content within and across curriculum teaching areas, strategies and methods, classroom management, integration of ICT, and assessment and evaluation. Furthermore, it tested whether there was a significant relationship in the level of competencies of TLE teachers and their profile variables.

The study utilized the descriptive research design, with a researcher-made questionnaire as primary data gathering instrument. Quantitative results are supported by interview and focus group discussion. A total of 284 TLE teachers from the Province of Batangas served as respondents.

After a careful and thorough analysis of the gathered data, this study yielded these salient findings:

1. Profile of the TLE Teachers

The profile of TLE teachers in terms of age, sex, specialization, years in teaching, highest educational attainment, seminars attended, and research productivity was determined in this study.

1.1. Age. Majority of the respondents are 36 years old or older, comprising 58.45% of the TLE teachers. Only 24.65% are 26-35 years old, while those who are 25 years old or younger comprise 16.9% of the population.

1.2. Sex. A great majority of the respondents (246 or 86.62%) are female while only 38 or 13.38% are male teachers, showing how female teachers greatly outnumber their male counterparts.

1.3 Area of specialization. There are 186 Home Economics majors, 42 Industrial Arts majors and 38 Information and Communications Technology, and 18 Agri-Fishery Arts majors among the respondents.

1.4. Number of years teaching. In terms of length of service, 141 respondents have served for less than 10 years, 85 respondents have served for 10 to 19 years already, and 58 respondents have served for 20 years or more. This shows that the majority of TLE teachers in Batangas are still relatively young in the field.

1.5 Highest Educational Attainment. Out of the 284 respondents, 172 have finished their Baccalaureate degree and 112 respondents have advanced degrees. Advanced degrees include those with Masters' and Doctorate Degrees showing that very few TLE teachers have engaged in post-graduate

studies.

1.6. Seminars and Training attended. Majority of the respondents or 55.99% have attended six to eight seminars while 29.58% have attended less than five seminars. There were also only 41 respondents or 14.44% who claimed to be very active in participating in seminars and trainings as they have attended nine or more seminars.

1.7. Number of Completed and Presented Researches. Majority or 187 of the respondents (65-85) have presented at most one research. There are 97 respondents (34.15%) have experienced presenting research work twice or more.

2. Respondents' Level of Competencies on the Four Areas of TLE

The TLE teachers' level of competencies in Home Economics, Industrial Arts, Agri-Fishery Arts and Information and Communications Technology was assessed in this study.

2.1. Home Economics. Competencies relative to Home Economics are greatly manifested by the respondents. Further analysis revealed that respondents show great manifestations in terms of improving attitudes toward home economics which got the highest mean value.

2.2. Industrial Arts. Competencies related to Industrial Arts are also greatly manifested by teachers. The analysis showed that the respondents greatly manifest practices on basic housekeeping procedures, observation of safety precaution in doing work, reading and following instructions before using any equipment.

2.3. Agri-Fishery Arts. Competencies related to Agri-Fishery arts are moderately manifested by the respondents. Specifically, they observe the 5C's principle in their work area, determine areas of concern for safety measures, and apply appropriate safety measures in the workplace.

2.4. Information and Communications Technology. Competencies relative to Information and Communications Technology are moderately manifested by the respondents. Generally, teachers use computers to collect and communicate information to students, colleagues, and parents.

3. Competencies of TLE teachers

The study also assessed the competencies of TLE teachers along five areas.

3.1. Knowledge of content within and across curriculum teaching areas. TLE teachers were found to be very competent in terms of knowledge of content within and across curriculum teaching areas. Having the highest assessment was their skills in motivating learners to create and establish connections between topics.

3.2. Strategies and Methods. In terms of strategies and methods, it was revealed that the respondents are very competent, especially in encouraging students to articulate thoughts and ideas clearly and effectively.

3.3. Classroom Management. The data revealed that the respondents are very competent when it comes to maintaining a safe and orderly classroom that facilitates student learning, as well as in managing student behavior positively through effective communication to defuse and deescalate disruptive or dangerous behavior.

3.4. Integration of ICT. The analysis showed that the

respondents are very competent in terms of ICT integration. It was seen that they integrate technology into their instruction to maximize student learning.

3.5. Assessment and Evaluation. In terms of assessment, the respondents were found to be very competent, especially in monitoring student progress toward instructional goals, and reporting assessment results for school-level analysis, evaluation, and decision-making.

4. Relationship in the level of competencies of TLE teachers and their profile variables

There are no significant relationship between the respondents' age and sex. The level of competencies on knowledge of content within and across curriculum teaching areas, strategies and methods, classroom management, integration of ICT, and evaluation and assessment. There are significant relationship between their area of specialization and strategies and method, classroom management, integration of ICT, and evaluation and assessment.

Similarly, significant relationships are established between respondents' number of years of teaching experience and their knowledge of content within and across curriculum teaching areas, strategies and methods, classroom management, integration of ICT, and evaluation and assessment. However, there are no significant relationship between the respondents' highest educational attainment and their knowledge of content within and across curriculum teaching areas, strategies and methods, classroom management.

Significant relationship were seen between the teachers' highest educational attainment and their integration of ICT. Significant relationship were also observed between the number of seminars and trainings attended and their strategies and methods, classroom management, integration of ICT, and evaluation and assessment.

Lastly, there was a significant relationship between the respondents' number of completed and presented researches and their knowledge of content within and across curriculum teaching areas, classroom management, integration of ICT and evaluation and assessment.

5. Competency needs of TLE teachers.

Analysis yielded that there is a need to strengthen the teachers' skills in applying a range of teaching strategies through LAC sessions. Teachers also need to attend different TLE-focused seminars and trainings to develop competencies in teaching TLE. Improving TLE teachers' ICT skills to address learning goals for daily lesson integration was also found to be a need among teachers.

There was also a need in terms of engaging faculty members in collegial coaching to brainstorm on best teaching methodologies, supporting TLE teachers by transforming weak areas into strengths through technical assistance, and equipping laboratory rooms with complete tools, equipment and paraphernalia for each course offered.

6. Competency Management Program for TLE teachers

As a result of the key findings, the researcher proposed a competency management program specifically for TLE teachers. This program has three major activities, all geared towards the enhancement of competencies of TLE teachers. The

program is designed for TLE teachers in Batangas, and focuses on improving their capacities on research, ICT integration, and participation in professional development activities.

6. Conclusions

In light of the findings of this study, the following conclusions were drawn.

1. Majority of the TLE teachers are over 35 years old, female, Home Economics majors, teaching for less than 10 years and baccalaureate degree holders. Most of them have attended six to eight seminars and have completed and presented only one research study.
2. The TLE teachers greatly manifest competencies in Home Economics, and Industrial Arts, while they moderately manifest competencies related to Agri-Fishery Arts and Information and Communications Technology.
3. Teachers are generally very competent in terms of knowledge of content within and across curriculum teaching areas, use of strategies and methods, classroom management, ICT integration, and assessment and evaluation.
4. Age and sex did not show any association with the teachers' level of competencies. On the other hand, a significant relationship exists between the teachers' area of specialization and teaching experience and their level of competencies across the areas of TLE. Only strategies and methods are not related with research productivity, while ICT integration and assessment and evaluation are significantly related with their highest educational attainment.
5. Teachers need to strengthen their skills in applying a range of teaching strategies through LAC sessions, attend more TLE-focused training and seminars, and improve their ICT skills for daily lesson integration.
6. A competency management program with three major activities was prepared to enhance the level of competencies of TLE teachers in the Province of Batangas.

7. Recommendations

Based on the findings and the conclusions drawn, the following recommendations are offered by the researcher:

1. The TLE teachers and the school administrators should have a goal-oriented action in attaining proficiency through integrative and collaborative activities as part of the competency management program.
2. The TLE teachers and the school administrators should inclusively create equal opportunities for everyone to tap their knowledge bases and resources.
3. The proposed competency management program may be tried out to test the usefulness of its implementation.
4. Similar researches in other learning areas may be done to further validate and strengthen the findings of this study.

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