



COMPETENCY NEEDS ANALYSIS OF TECHNOLOGY AND LIVELIHOOD EDUCATION TEACHERS: BASIS FOR DEVELOPMENT PROGRAM

ROED BERT P. SALAZAR

Institute of Graduate and Professional Studies,
Lyceum-Northwestern University
Dagupan City

Abstract :

This descriptive study was conducted to assess the level of competency needs analysis of Technology and Livelihood Education (TLE) teachers which will serve as basis for development program. This study covered select Technology and Livelihood Education teachers and school administrators from the Second Congressional District of Schools Division Office I Pangasinan for the School Year 2024-2025. Percentage, mean/average, t-test, f-test, and analysis of variance (ANOVA) were used as statistical tools to quantify the data. It utilized the survey form through the use of questionnaire designed by the researcher for the purpose of the study. The instrument was validated by a group of experts. Their corrections, comments, and suggestions were considered in improving the questionnaire. The findings of the study show that there is no significant difference on the competency level when the teachers are grouped according to demographic profile. Findings also imply that there are significant differences identified in all the six components of standard competency and the competency level of the teachers. Three major needs identified are activities that would enhance competency of students in motivation and opportunities to acquire or enhance their skills, renewed professionalism, and rejuvenated teaching advocacy and calling. The study concludes that there exists a significant gap between the present competency level and the desired standard competency requirements of TLE teaching among the teachers. This study, thereby, recommends enhancement program, projects, and activities to address the competency needs requirement of the TLE teachers. The findings, conclusions, and recommendations of this study can be used as a basis for policy formulation on teachers' development/enhancement programs.

Keywords: competency, training needs, development program

INTRODUCTION

A teacher's role in the present time involves more than simply standing in front of a group of students, sharing their thoughts on what they find meaningful. Teaching is one of the most complicated jobs today. Teaching the subject Technology and Livelihood Education (TLE) is even more challenging. It demands broad knowledge of the four components (Agri-Fishery, Computer and Entrepreneurship, Industrial Arts, and Home Economics) of the subject matter, curriculum and standards, enthusiasm, a caring attitude, creativity, love for learning, classroom management techniques, and a desire to make a difference in the lives of young people (Great Schools, n.d.).

The need to ensure the presence of highly qualified teachers in every classroom and to determine how best to define and prepare these qualified teachers has been an old age issue. One could be the best teacher with the best course materials, course activities, learning outcomes, and assessments at one point in time. But as time changes, courses are revised as in the case of TLE to suit the needs of the society, the employers, and the diversity of students; hence teachers, must keep abreast of these changes. A way to find out what needs to be changed, improved or updated is to evaluate the actual state of the teachers' knowledge, attitudes, skills, and strong aspects of their practice, as well as their weaknesses (Stronge & Tucker, 2003).

Professional development keeps teachers up-to-date on new research, on how children learn, on emerging technology tools for the classroom, and on new curriculum resources; but effective professional development enables educators to develop the competencies, such as the knowledge and skills they need to address students' learning challenges. To be effective, professional development, according to Mizell (2010), requires thoughtful planning followed by careful implementation with feedback to ensure it responds to educators' learning needs.

The issuance of Department Order No. 43 in 2002, popularly known as BEC Order, restructured the elementary and secondary curriculum for the purpose of improving the standard of education in the country. The Guidelines for the Pilot Implementation of the 2002 Secondary Education Curriculum (DepEd Order No.43 series of 2002) describes *Teknolohiya at Edukasyong Pantahanan at Pangkabuhayan* (TEPP) as one of the four component subjects of *Makabayan*, a learning area that serves as a practice environment for holistic learning to develop a healthy personal and national self-identity, designed to develop the personal, social, and work/spatial of learners especially interpersonal skills, empathy with the culture, vocational efficiency, problem solving, and decision making in daily life.

TLE (per DepEd Order No. 37 series of 2003) is one of the learning areas of the Secondary Education Curriculum in Philippine secondary schools. As a subject, its component areas are: Home Economics, Agri-Fishery Arts, Industrial Arts, and Information and Communication Technology. It is also referred to as CP-TLE for Career Pathways in Technology and Livelihood Education. Technology and Livelihood Education is taught in schools, among other subjects, for students to learn how to have the basic necessities and the means to improve upon them in order to have a better life. Students in this subject are taught things like home education, sewing, cooking, etc., as well as how to be innovative with current technology so that they can find solutions to problems they may face in everyday life.

The 2010 Secondary Education Curriculum allocates 240 minutes per week for CP-TLE, which is equivalent to 1.2 units. However, CP-TLE is required to include practical work experience in the community, which may extend beyond its specified school hours.

Two types of curriculum are provided for regular high schools (public and private). These are: Technical-Vocational Education-based TLE and Entrepreneurship Education-based TLE. The Technical-Vocational Education-based TLE is focused on technical skills development in any area. Five common competencies, based on the training regulations of the [Technical Education and Skills Development Authority \(TESDA\)](#), are covered in the exploratory phase (Grades 7 and 8): mensuration and calculation, technical drafting, use of tools and equipment, maintenance of tools and equipment, and occupational health and safety. The specialization phase is from Grades 9 to 12. The Entrepreneurship Education-based TLE is focused on the learning of some livelihood skills every quarter so that the student may be equipped to start a small household enterprise with family members. It covers three domains: Personal Entrepreneurial Competencies, Market and Environment, and Process and Delivery.

Having set the goals of TLE, what would the standard qualifications of a teacher that would best impart the curriculum contents of TLE? These qualifications are often referred to as competencies and are defined in general or specific terms.

Competency, in general, is defined as a set of knowledge, skills, behaviors, attitudes, and characteristics that distinguishes one person from another. While personal competencies refer to individual attitudes and skills required to handle professional relationships and facilitate learning and personal development (e.g., communication), functional competencies relate to technical knowledge or skills required by a particular field or profession (e.g., accounting principles).

In a study conducted by WONG Yu Fai (2016), he opted the definition of the concept of competence offered by the European Tuning project as competencies represent a dynamic combination of knowledge, understanding, skills, abilities, and values.

In the training world, a comprehensive definition of competency is given as a cluster of related knowledge, skills, and attitudes that affects a major part of one's job (a role or responsibility), that correlates with performance on the job, that can be measured against well-accepted standards, and that can be improved via training and development (Training magazine: July, 2016). In combination with the proficiency plan for a specific occupation, the proficiency scale enables individuals to compare their current level of proficiency to top performers in the same occupation. This scale serves as the guide to understanding the expected proficiency level of top performers at each level. The five scales are as follows:

1. **Fundamental Awareness.** An individual has a common knowledge or an understanding of basic techniques and concepts.
2. **Novice.** An individual has the level of experience gained in a classroom and/or experimental scenarios or as a trainee on-the-job; and can discuss terminology, concepts, principles, and issues related to this competency. A novice is expected to need help when performing this skill and focus is on developing through on-the-job experience. He/she utilizes the full range of reference and resource materials in this competency.
3. **Intermediate. An individual at this step is able** to successfully complete tasks as requested. He/she understands and can discuss the application and implications of changes to processes, policies, and procedures in this area. Help from an expert may be required from time to time, but can usually perform the skill independently.
4. **Advanced. An individual** can perform the actions associated with this skill without assistance. He/she can consistently provide practical/relevant ideas and perspectives on process or practice improvements which may easily be implemented; is capable of coaching others in the application of this competency by translating complex nuances relating to this competency into easy to understand terms; participates in senior level discussions regarding this competency; and assists in the development of reference and resource materials in this competency. A person at this stage is certainly recognized within the organization as "a person to ask" when difficult questions arise regarding this skill.
5. **Expert. An individual is** known as an expert in this area. He/she can provide guidance, troubleshoot, and answer questions related to this area of expertise and the field where the skill is used; has demonstrated consistent excellence in applying this competency across multiple projects and/or organizations; is considered the "go to" person in this area within and/or outside the organization; can create new applications for and/or lead the development of reference and resource materials for this competency; and is able to diagram or explain the relevant process elements and issues in relation to organizational issues and trends in sufficient detail during discussions and presentations to foster a greater understanding among internal and external colleagues and constituents (Wong, 2006).

A competency-based training system includes more than just training courses related to job performance. It identifies the level of competence required for different levels of performance within a given work function. Looking at the competencies required for different job levels would allow employees to set professional development goals. Developing competency-based training requires performing a job skills analysis. Every job description must be examined to determine the knowledge and skills required to perform the job and the level of competence required to perform the job. Once competencies are defined, training can be organized to support performance at different levels - from entry-level to upper management.

When an organization is set on employee development, focus should be on competencies - not titles of training courses. Competency-based training can help organization prioritize training resources to achieve results. In the training world, this means separating the "need to know" from the "nice to know." If it is not required for job performance, it shouldn't be included as a training requirement (Learning design, 2011).

Competency-based training is applicable under the following circumstances: when resources are available to research and validate a quality competency model; when the job and the training content have significantly high strategic impact on organizational success; when time is available to devote to competency identification, validation, and modeling; When the training content shelf life is sufficiently long enough to warrant the additional expense of researching and validating the competency model; when the training population is large enough to warrant resource expenditure; and when it's essential, or deemed most appropriate, to focus performance that will achieve exemplary rather than merely successful performance when the learners return to their jobs (Dubois, D. & Rothwell, W.2004).

Studies conducted in the past on TLE teaching competencies were very limited. A local study focusing on TLE teaching was conducted by Retome et al. (2012) on attitudes of TLE teachers towards work and the students' personal view on the subject; while Guiner (2013) determined teachers' competency in terms of knowledge, skills, and attitudes for the purpose of developing a training module in Industrial Arts for TLE faculty in Region I.

It is, therefore, imperative that an assessment of existing competency of TLE teachers be conducted. The assessment could lead to a well-planned development of activities that could help teachers achieve competencies identified for teaching the subject, or target an improvement of a specified knowledge, skill or attitude to attain a higher competency level. It is along these thoughts that the author pursued the current study.

The study assessed the suitability of existing TLE teachers in teaching the subject. It, likewise, described the level of competencies in teaching TLE in terms of six teaching competencies. Moreover, the author determined specific focus areas for inclusion in the enhancement program for TLE teachers from the Second Congressional District of SDO1 Pangasinan.

Statement of the Problem

The study sought to determine the competency and training needs of Technology and Livelihood Education (TLE) teachers of the Second Congressional District of SDO1 Pangasinan during the school year 2024-2025.

Specifically, it sought to answer the following sub-problems:

1. What is the demographic profile of Technology and Livelihood Education (TLE) teachers and administrators?
2. What is the competency level of TLE teachers as perceived by the teachers themselves and their department heads in terms of:
 - 2.1 Personal and professional competence,
 - 2.2 Competence in using knowledge of student skills and talents,
 - 2.3 Competence in using teaching techniques,
 - 2.4 Competence in monitoring and evaluation skills,
 - 2.5 Competence in establishing relations with family and society, and
 - 2.6 Competence in using knowledge of curriculum and content?
3. Is there a significant difference in competency level of TLE teachers when they are grouped according to demographic profile?
4. Is there a significant difference between the competency level of the TLE teachers as assessed by themselves and the administrators?
5. What are the standard teaching competency requirements of TLE teachers?
6. What are the gaps between the present competencies of TLE teachers and the standard teaching competencies?
7. What are the competency needs of TLE teachers?
8. Based on the findings, what professional development program could be proposed to address the needs of the TLE teachers?

METHODOLOGY

This chapter presents the research design, sources of data, instrumentation and data collection and the tools for data analysis.

Research Design

The study utilized the descriptive research design. Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection. It often uses visual aids such as graphs and charts to aid the reader in understanding the data distribution. Because the human mind cannot extract the full import of a large mass of raw data, descriptive statistics is very important in reducing the data to manageable form. When in-depth, narrative descriptions of small number of cases are involved. Researchers use description as a tool to organize data into patterns that emerge during analysis. Those patterns aid the mind in comprehending a qualitative study and its implications (Knupfer & McLellan, 2001).

Descriptive research holds a valuable place within education because in contrast to laboratory experiments, the human nature of educational research is critical to the result. Educational environments and experiences inherently contain many extraneous variables that cannot be controlled in a realistic situation which often call for careful observation of specific life situations, and can require the collection of data from a large number of people spread throughout a wide geographic region. The descriptive component is critical to educational research because educational events cannot be reduced to a controlled laboratory environment. The types of questions generated in educational research require descriptions that help to explain the data and direct emergent prescriptions for educational events.

This method was used in the study to gather, organize, analyze, and present the level of competency of TLE teachers. Gap analysis was used to determine the gaps between the competencies of TLE teachers and the acceptable competency levels.

Sources of Data

The population was composed of 5 administrators and 76 teachers, 19 males and 57 females from the select Technology and Livelihood Education teachers of the Second Congressional District of Pangasinan.

Instrumentation and Data Collection

Two sets of assessment questionnaire were prepared and administered by the researcher - one for TLE teachers and another for school administrators. Inputs to the instrument were taken from the Ministry of National Education, Turkey (n.d.); National Institute of Health, USA; Teacher Education Council, DepEd Module 6.9; DepEd RPMS-PPST; and other foreign and local sources summarized in the review of literature. It was modified by the researcher to make it appropriate for teachers teaching TLE in the country.

Both assessment questionnaires were a checklist of 34 essential competencies for teaching TLE - 8 items for the personal and professional values, 3 items for knowledge of student skills and talents, 7 items each for teaching techniques and monitoring and evaluation skills, 4 items for relations with family and society, and 5 items on knowledge of content. Each of the 34 items was a short description of the skills. The teachers were requested to rate themselves while the administrators were requested to rate the teachers using the following guide.

Prior to the preparation of the self-assessment form for TLE teachers, a pre-testing, instrument was conducted to TLE teachers to determine the need to conduct the current study. In the pre-survey, more than 50% of the teachers indicated their need for training in the listed knowledge and skills related to teaching TLE.

The self-constructed questionnaire was forwarded to the adviser for comments and suggestions. Revisions were incorporated for the improvement of the instrument. The instrument was then validated by a group of experts. These experts are members of the faculty of the Graduate Studies and have been teaching Educational Management for more than a decade in the same institution. Their suggestions were considered in improving the questionnaire.

The researcher used the following steps in gathering the data.

1. The researcher prepared a letter of intent to conduct the study and sent it to the Schools Division Superintendent of SDO1 Pangasinan.
2. After the approval, copies of the endorsement letter from the Office of the Schools Division Superintendent were sent to the five public secondary schools in the Division through their school administrators and the researcher distributed the questionnaires.
3. The respondents were given a questionnaire and oriented by the researcher in answering the questions.
4. A week after, the questionnaires were retrieved. Finally, the data were analyzed and interpreted.

Gap analysis was done to identify the existing competency skills of the teachers, the gap between the present and the standard competency skills, and the needed skills for improvement among the TLE subject teachers.

A gap analysis is a quality-measurement tool used to identify the difference between present competency and desired (standard) competency and to recommend strategies for bringing the desired competency into actual practice. The process is summarized as follows:

1. *Set targets/expectations*

Gap analysis began with a thorough identification of the expectations from an external perspective which were used as benchmark in the interpretation of the competency scores of the TLE teachers.

The formulation of the six standard competencies and the skills under each of the competency was discussed in chapter 3. The numerical standard competency score was taken from RPMS-PPST, and was slightly modified based on the concepts presented in literatures reviewed in the course of the study.

Table 2. Scale and descriptive ratings used in the analysis of the competency scores of the respondents

RPMS-PPST Rating		Used in the current study	
Numerical	Descriptive	Numerical	Descriptive
		4.51 - 5.00	Outstanding
3.51 – 4.00	Expert	3.51 – 4.50	Very Satisfactory
2.51 – 3.50	Experienced	2.51 – 3.50	Satisfactory
1.51 – 2.50	Fair	1.51 – 2.50	Poor
1.00 – 1.50	Lack	1.00 – 1.50	Needs Improvement

Being improved, relevant data about the process were collected. To determine the current-competency level of TLE teachers, the assessment tools proposed by the author were used.

2. Identify the gaps

Present competencies against desired (standard) competencies were identified. The causes of deviation from the ideal were, likewise, referred. The competency needs and specific improvement efforts that could bring greater efficiency to different parts of the process, i.e. to increase the competency of the TLE teachers, were also identified

3. Present and use the result.

In the present study, the results served as inputs in the design and development of an enhancement program for TLE teachers.

Tools for Data Analysis

To derive valid and accurate results, appropriate statistical tools were employed.

1. **Percentage (%)**. This was used to describe the demographic profile of TLE teachers in problem 1 and the distribution of teachers under specified competency categories in problem 2.
2. **Mean/Average**. This was used to provide a description of the collective assessment of the respondents of the study. The mean competency scores are presented by demographic profile in problem 2 and according to the six competency components in problem 4.
3. **T-test** for two independent samples. This was used to answer problem 3 by testing the first hypothesis regarding the differences between gender and competency level. It was also used to answer problem 5 by determining the existence of significant difference between the rating of the teachers and the administrators as stated in the second hypothesis.
4. **T-test** for one sample population. This was used to answer problem 8 by testing the third hypothesis on the differences between the present competency scores of TLE teachers and the standard competency score requirement.
5. **F-test or ANOVA**. F-test was used to answer part of problem 3 by testing the first hypotheses on the differences among existing competency when the teachers were grouped according to age, undergraduate courses, teaching experience, and seminars/training attended.

RESULTS AND DISCUSSION

This chapter deals with the presentation, analysis and interpretation of the data gathered relative to sub-problems in the study.

Demographic Profile of TLE Teachers and Administrators

Table 1. Profile of the Teacher - respondents according to Sex and Age

Sex/Age	Number of Teachers	Percentage
Sex		
Male	19	25%
Female	57	75%
Age (years)		
20-30	21	27.60%
31-40	31	40.80%
41-50	18	23.70%
51-60	6	7.90%

Table 1 shows that 57 or 75% of the TLE 9 teacher-respondents are female and 19 or 25% are male. According to age, 21 or 27.60% are 20 to 30 years old, 31 or 40.80% are 31 to 40 years old, 18 or 23.70% are 41 to 50 years old, and 6 or 7.90% are 51 to 60 years old. The youngest TLE teacher is 23 years old and the oldest is 58 years old.

The data reveals that majority of the TLE teachers are mostly female. It also shows that most of the respondents are 31 to 40 years old.

Table 2. Profile of the Respondents according to Undergraduate Degree/ Major of TLE Teachers

Undergraduate Degree/Major	Number of Teachers	Percentage
Computer-Related Courses	14	18.40%
BSIT - Computer Education	6	
BSIT - Electronics	2	
BSE - Computer Education	1	
BS Computer Science	2	
BS Math - Computer	1	
BSOA - Computer Education	1	
BS Computer Education	1	
Home Economics	28	36.80%
BSIE – Home Economics	19	
BSTLE – Home Economics	1	
BSIE – Garments Trade	3	
BSIE – Girls Trade	2	
BSIE – Food Technology	3	
Industrial Arts	16	21.10%
BSIE –Industrial Arts	13	
Mechanical Technology	1	
Civil Engineering Technology	2	
Agri-Business	7	9.20%
Agri-Fishery	4	
Animal Husbandry	1	
Agriculture Education	1	
Agribusiness Management	1	
Business Related Courses	7	9.20%
Entrepreneurship	1	
Management	2	
Office Administration	1	
Marketing Management	1	
Distributive Arts	2	
Others	4	5.30%
BSE – English	1	
Nutrition	1	
Hotel and Restaurant Management	2	

The table shows that most of the teachers, 28 or 36.80%, are majors of Home Economics, followed by 16 or 21.10% who are graduates of Industrial Arts, and then by 14 or 18.40% who are computer-related graduates. The least numbers of TLE teachers, 7 or 9.20%, have Agri-business education; and another, 7 or 9.20%, have business-related courses. Four or 5.30% are graduates of other courses like BSE English, Hotel Management, and Nutrition.

Based from the above data, 5.30% of teachers who are teaching TLE subject are graduates of other courses and 9.20% are graduates of business-related courses. This results to lack of pedagogical skills, as well as of adequate knowledge of the subject matter they teach (Figueredo, V. and Anzalone S. 2003).

Table 3. Profile of the Respondents according to Years of Teaching Experience of TLE Teachers

Teaching Experience	Number of Teachers	Percentage
IJNRD2507219	International Journal of Novel Research and Development (www.ijnrd.org)	c132

0 -5	34	45%
6-10	20	26%
11-15	9	12%
16-20	8	11%
21-25	3	4%
26-30	1	1%
31-35	1	1%
Total	76	100%

The table shows that 34 or 45% of the TLE teachers have 0 to 5 years of teaching experience, 20 or 26% have 6 to 10 years of teaching experience, 9 or 12% have 11 to 15 years of teaching experience, 8 or 11% have 16 to 20 years of teaching experience, and 3 or 4% have 21 to 25 years of teaching experience. One teacher has 26 to 30 years of teaching experience and another one has 31 to 25 years of teaching experience.

The data shows that majority of the TLE teachers have six years or less teaching experience. A detailed inspection of the data gathered indicates that the teaching experiences of the teachers are spent on teaching the TLE subject.

Table 4. Profile of the Respondents according to Attendance to Seminars of TLE Teachers

Attendance to Seminars (hours)	Number of Teachers	Percentage
None	37	48.68%
1 - 5	27	35.53%
6 - 10	9	11.84%
11 - 15	2	2.63%
16 - 20	1	1.32%
Total	76	100%

The table shows that most of the TLE teachers, 37 or 48.68% have not attended any seminar/training, 27 or 35.53% have attended 1 to 5 hours of seminar/ training, and 9 or 11.84% have attended 11 to 15 hours of seminar/training. Two (2) teachers have attended 11 to 15 hours of seminar/training, and one teacher has attended 16 to 20 hours of seminar/training.

Table 5. Profile of Administrators according to Sex, Age, Undergraduate Degree/Major, Years as Administrator, Years as a Teacher, and Years as TLE Teacher

Gender	Age	Undergraduate Degree/Major	Years as Administrator	Years as Teacher	Years as TLE Teachers
M	41	BSIE/Industrial Arts	6	16	10
M	41	BSIE/Architecture	7	16	11
F	40	BSE/Mathematics	6	17	None
F	42	BSIE/Home Economics	5	16	16
F	55	BSA/Agronomy	13	20	NA

Table 5 shows that out of the five administrators, two are males and three are females. In terms of age, one is 40 years old, two are 41 years old, one is 42 years old, and one is 55 years old. All the administrators are 40 years or older. According to undergraduate degree, three of the administrators completed BS Industrial Engineering, one completed BS Education, and one completed BS Agronomy. All of them have been administrators for 6 years or more, where in one has been for 13 years, the longest so far. All of the administrators have more than 16 years of teaching experience, in which 10 years or more is spent on teaching TLE subject, except for one who has not taught TLE in her 17 years of teaching experience.

The data shows that the administrators have long enough experience in the teaching profession and probably have been promoted to their current position.

Table 6. Competency Level according to Years of Teaching Experience

Teaching Experience (years)	Competency Score	
	Numerical	Descriptive
0 – 10	2.66	Intermediate
6 – 10	2.92	Intermediate
11 – 15	2.80	Intermediate
16 – 20	2.69	Intermediate
21 – 25	3.27	Intermediate
26 – 30	3.37	Intermediate
31 – 35	3.37	Intermediate
Over-all mean	3.01	Intermediate

It can be observed in Table 6 that the competency scores are within the range of intermediate competency; however, the numerical score generally increases as teaching experience increases. Teachers with the highest competency score of 3.37 are those with more than 25 years of teaching experience and the lowest at 2.66 are those with less than 5 years of experience.

The data shows that the distribution is an indication that experience in teaching results to a gain in competency skills.

Table 7. Competency Level according to Undergraduate Degree/major

Undergraduate Degree/Major	Competency Score	
	Numerical	Descriptive
Computer-Related Courses	2.76	Intermediate
BSIT - Computer Education		
BSIT - Electronics		
BSE - Computer Education		
BS Computer Science		
BS Math - Computer		
BSOA - Computer Education		
BS Computer Education		
Home Economics	2.93	Intermediate
BSIE – Home Economics		
BSTLE – Home Economics		
BSIE – Garments Trade		
BSIE – Girls Trade		
BSIE – Food Technology		
Industrial Arts	2.79	Intermediate
BSIE –Industrial Arts		
Mechanical Technology		
Civil Engineering Technology		
Agri-Business	2.73	Intermediate
Agri-Fishery		
Animal Husbandry		
Agriculture Education		
Agribusiness Management		
Business-Related Courses	2.44	Limited
Entrepreneurship		
Management		
Office Administration		
Marketing Management		
Distributive Arts		
Others	2.66	Intermediate
BSE – English		
Nutrition		
Hotel and Restaurant Management		
Over-all mean	2.82	Intermediate

In terms of undergraduate degree completed, shown in Table 7, the highest competency score is the Home Economics Majors at 2.93, followed by the Industrial Arts graduates at 2.79, and then by the graduates of Computer Related Courses at 2.76, which all mean intermediate competency. The lowest is the graduates of Business-Related Courses, at 2.44, which implies limited competency.

The data reveal that the teachers who have business related-courses have limited competency.

Table 8. Competency Level according to Seminars Attended

Attendance to Seminars (hours)	Competency Score	
	Numerical	Descriptive
None	2.92	Intermediate
1 – 5	2.70	Intermediate
6 – 10	2.64	Intermediate
11 – 15	3.12	Intermediate
16 – 20	3.12	Intermediate
Over-all Mean	2.68	Intermediate

The competency level of TLE teachers, when grouped according to number of hours of seminar attended, is highest among those who have attended more than 15 hours of seminar/training, at 3.12, followed by teachers who have not attended any seminar/training, at 2.92.

Upon examination of the data gathered, the 37 teachers who have not attended any seminar/training have teaching experience ranging from 0 to 27 years. It implies that there are teachers who have been teaching for as long as 27 years, yet have not attended any seminar/ training on TLE. The lowest competency score of 2.64 is among those with 6 to 10 hours attendance to seminars. All the scores are within the range of intermediate competency.

Competency level of TLE teachers, in terms of the six areas of competency

2.1 As Assessed by the Teachers Themselves

The competency scores of the teachers are presented in terms of the Key Skill Requirements (KSR) in the six components of the Standard Competency for TLE teachers in two ways: 1) by number of teachers and percentage on three groupings of numerical competency scores, and 2) by mean of the numerical response of the teachers on the assessment form. The competency scores are grouped into three ranges: numerical score of 1.00 to 2.50 to include scores of 1 (Basic competency) and 2 (Limited competency), numerical score of 2.51 to 3.50 to include scores of 3 (Intermediate competency), and numerical score of 3.51 to 5.00 to include scores of 4 (Advanced competency) and 5 (Expert competency).

Table 9. Frequency and Percentage of Teachers by Competency Score in Component I: Personal and Professional Competency

Competency Skill Requirement	1.00-2,50		2.51-3.50		3.51-5.00	
		Percentage		Percentage		Percentage
1. Conduct of researches to improve learning-teaching process	15	20%	46	60%	15	20%
2. Conduct of regular self – assessment	31	41%	32	42%	13	17%
3. Preparation of papers for presentation in technical conferences/symposia	16	21%	41	54%	19	25%
4. Use of tools for critical assessment	28	37%	36	47%	12	16%

As shown in Table 9, almost half of the TLE teachers assessed themselves with intermediate competency (2.51-3.50) in all the four areas under component 1: 61% on conduct of researches, 42% on conduct of regular self-assessment, 54% on preparation of papers for presentation, and 47% on use of tools for critical assessment. At most, 25% of the teachers assessed themselves as having advanced competency or expert competency (3.51-5.00): 19% on conduct of researches, 17% on conduct of regular self-assessment, 25% on preparation of papers for presentation, and 16% on use of tools for critical assessment. A big percentage of the teachers assessed themselves as having limited competency or basic competency (1.00–2.50): 20% on conduct of researches, 41% on conduct of regular self-assessment, 21% on preparation of papers for presentation, and 37% on use of tools for critical assessment. The distribution of scores is indicative of the teachers' need to enhance their skills on the conduct of researches, on conduct of regular self-assessment, preparation of papers for presentation, and most importantly on the use of tools for critical assessment. Another way of looking at the competency scores of the teachers is by the mean competency scores in the key skill requirements under each of the 6 components of competency.

Table 10. Numerical and Descriptive Mean Competency Score in Component I: Personal and Professional Competency

Competency Skill Requirement	Competency Assessment Score	
	Numerical	Descriptive
1. Conduct of researches to improve learning-teaching process	3.01	Intermediate
2. Conduct of regular self –assessment	2.63	Intermediate
3. Preparation of papers for presentation in technical conferences/symposia	3.00	Intermediate
4. Use of tools for critical assessment	2.64	Intermediate
Over-all mean	2.82	Intermediate

Table 10 shows the mean numerical competency scores of the TLE teachers in each of the key areas under component 1. The highest competency score is on the conduct of researches to improve learning-teaching process at 3.01, followed by on preparation of technical papers for presentation in technical conferences/ symposia at 3.00, on use of tools for critical assessment at 2.74, and last, on conduct of regular assessment at 2.73. The over-all mean competency is 2.82 which means intermediate competency.

The data shows that the low scores on the conduct of regular assessment and on use of critical tools emphasize the need to motivate teachers to learn and use such tools.

Table 11. Frequency and Percentage of Teachers by Competency Score in Component II: Knowledge of Student Skills and Talents

Competency Skill Requirement	1.00-2,50		2.51-3.50		3.51-5.00	
		Percentage		Percentage		Percentage
1. Measurement and evaluation of talents, skills, and interests of students	5	7%	48	63%	23	30%
2. Planning and conduct of outdoor activities	38	50%	24	32%	14	18%
3. Conduct of interview/ conference with students and their parents to identify their talents, skills, and interests in the different learning areas of TLE	33	43%	28	37%	15	20%

Table 11 shows 63% assessed themselves with intermediate competency (2.51- 3.50) in measurement and evaluation of talents, skills, and interest of students under component II: 50% assessed themselves with limited to basic competency (1.00-2.50) on planning and conduct of outdoor activities; and 43% assessed themselves with limited to basic competency (1.00-2.50) on conduct of interview/conference with the students and their parents to identify their talents, skills, and interest in the different learning areas of TLE.

Table 12. Numerical and Descriptive Mean Competency Score in Component II: Knowledge of Student Skills and Talents

Competency Skill Requirement	Competency Assessment Score	
	Numerical	Descriptive

Competency Skill Requirement			Numerical	Descriptive
1.	Measurement and evaluation of talents, skills, and interests of students		3.32	Intermediate
2.	Planning and conduct of outdoor activities		2.55	Intermediate
3.	Conduct of interview/ conference with the students and their parents to identify their talents, skills, and interests in the different learning areas of TLE		2.64	Intermediate
Over-all mean			2.84	Intermediate

The mean competency scores of TLE teachers in component II, as shown in table 12, are all within the range of intermediate competency. Numerical score is highest at 3.32 on measurement and evaluation of talents, skills, and interests of students; followed by 2.64 on conduct of interview/conference with the students and their parents to identify their talents, skills, and interest in the different learning areas of TLE; and last at 2.55 on planning and conduct of outdoor activities.

The scores imply that outdoor activities are not prioritized by TLE teachers as learning activity and most of the teaching-learning processes only take place inside their classroom.

Table 13. Frequency and Percentage of Teachers by Competency Score in Component III: Teaching Techniques Competency

Competency Skill Requirement	1.00-2,50	Percentage	2.51-3.50	Percentage	3.51-5.00	Percentage
1. Knowledge on the proper use of the latest tools and techniques in relation to teaching TLE	10	13%	43	57%	23	30%
2. Resource management strategies	15	20%	45	59%	16	21%
3. Access to and how to use technological sources related to teaching – learning (database, online sources and etc.) materials	20	26%	35	46%	21	28%
4. Motivating students to improve themselves	7	9%	38	50%	31	41%
5. Finding alternative means if the school has no provisions for a laboratory site in the area being taught	15	20%	37	49%	24	31%
6. Development of new ideas and new designs and skills in doing project making activities	15	20%	42	55%	19	25%
7. Improvising tools to supplement the available tools in the school	11	14%	43	57%	22	29%

As presented in table 13, almost half of the TLE teachers assessed themselves with intermediate competency (2.51- 3.50) in all the seven areas under component III: 59% on resource management strategies, 57% on knowledge on the proper use of the latest tools and techniques in relation to teaching TLE and on improvising tools to supplement the available tools in the school, 55% on development of new ideas and new designs and skills in doing project making activities, 50% on motivating students to improve themselves, and 49% on finding alternative means if the school has no provisions for a laboratory site in the area being taught.

Table 14. Numerical and Descriptive Mean Competency Score in Component III: Teaching Techniques Competency

Competency Requirements	Competency Assessment Score	
	Numerical	Descriptive
1. Knowledge on the proper use of the latest tools and techniques in relation to teaching TLE	3.18	Intermediate
2. Resource management strategies	3.00	Intermediate
3. Access to and how to use technological sources related to teaching – learning (database, online sources and etc.) materials	3.01	Intermediate
4. Motivating students to improve themselves	3.39	Intermediate
5. Finding alternative means if the school has no provisions for a laboratory site in the area being taught	3.12	Intermediate
6. Development of new ideas and new designs and skills in doing project making activities	3.11	Intermediate
7. Improvising tools to supplement the available tools in the school	3.13	Intermediate
Over-all mean	3.13	Intermediate

Table 14 presents that the mean competency scores of TLE teachers on the seven skills under component III are within the range of intermediate competency. The numerical competency scores equivalent are as follows: 3.39 on motivating students to improve themselves, 3.18 on knowledge on the proper use of the latest tools and techniques in relation to teaching TLE, 3.13 on improvising tools to supplement the available tools in the school, 3.12 on finding alternative means if the school has no provisions for a laboratory site in the area being taught, 3.11 on development of new ideas and new designs and skills in doing project making activities, 3.01 on access to and how to use technological sources related to teaching-learning (database, online sources and etc.) materials, and 3.00 on resource management strategies.

Table 15. Frequency and Percentage of Teachers by Competency Score in Component IV: Monitoring and Evaluation Skills

Competency Skill Requirement	1.00-2,50	Percentage	2.51-3.50	Percentage	3.51-5.00	Percentage
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1. Preparation of reliable test questionnaire	13	17%	38	50%	25	33%
2. Preparation of diversified and alternative testing tools for students	21	28%	36	47%	19	25%
3. Use of teachers' evaluation results of students in the improvement of the teaching process	15	20%	44	58%	17	22%
4. Conversion of test results into visual form such as tables and graphs	28	37%	34	45%	14	18%
5. Selection and application of the proper statistical technique in data analysis	33	43%	35	46%	8	11%
6. Doing data analyses using computer software and other information and communication technologies	15	20%	40	52%	21	28%
7. Testing validity and reliability and calibration of testing instruments and tools	20	26%	41	54%	15	20%

Table 15 shows the percentage of teachers who rated themselves with intermediate competency (3) in Component IV: Monitoring and Evaluation Skills: 50% on preparing of valid and reliable tests, 47% on use of evaluation results for the improvement of the teaching process, 58% on use of computer software and other information and communication technologies in analyzing test results, 45% on preparing of diversified and alternative testing tools for students, 46% on establishing the validity and reliability of testing instruments and tools, 52% on preparing of test results in visual form such as tables and graphs, and 20% on selection and application of the proper statistical technique in data analysis.

Table 16. Numerical and Descriptive Mean Competency Score In Component IV: Monitoring and Evaluation Skills

Competency Requirements	Competency Assessment Score	
	Numerical	Descriptive
1. Preparation of reliable test questionnaire	3.20	Intermediate
2. Preparation of diversified and alternative testing tools for students	3.00	Intermediate
3. Use of teachers' evaluation results of students in the improvement of the teaching process	3.12	Intermediate
4. Conversion of test results into visual form such as tables and graphs	2.76	Intermediate
5. Selection and application of the proper statistical technique in data analysis	2.57	Intermediate
6. Doing data analyses using computer software and other information and communication technologies	3.05	Intermediate
7. Testing validity and reliability and calibration of testing instruments and tools	2.91	Intermediate
Over-all mean	2.94	Intermediate

Table 16 gives the numerical competency scores of the teachers on Component IV: Monitoring and Evaluation Skills. The scores are all within the range of intermediate competency. The highest is on preparation of valid and reliable test questionnaires at 3.20, followed by on use of teachers' evaluation results of students in the improvement of the teaching process at 3.12, and then on doing data analyses using computer software and communication technologies at 3.05. The lowest are on use of statistical tools for data analysis at 2.57 and on conversion of test results to visual forms at 2.76.

The data shows the skills that need to be acquired by means of training programs which can be initiated by the school administrators.

Table 17. Frequency and Percentage of Teachers by Competency Score in Component V. Relations with Family and Society

Competency Skill Requirement	1.00-2,50	Percentage	2.51-3.50	Percentage	3.51-5.00	Percentage
1. Organization of meetings and seminars in accordance with interests and needs of families and students	42	55%	24	32%	10	13%
2. Inviting professionals from fields such as industry, trade, agriculture, etc. within the same environment to lessons related to their professions.	47	62%	21	28%	8	10%
3. Tapping institutions and organizations in the vicinity for educational purposes	43	57%	27	35%	6	8%
4. Membership/leadership in any of non-governmental organization, society and educational groups, and other technology related organizations	38	50%	27	36%	11	14%

Table 17 shows that quite a small percentage of the TLE teachers rated themselves 4 or 5 (Advanced or Expert) in Component V: Relation with Family and Society: 13% on organizing meetings and seminars in accordance with interests and needs of families and students; 10% on inviting professionals from fields such as industry, trade, agriculture, etc. within the same environment to give lecture/talk on lessons related to their professions; 8% on tapping institutions and organizations in the vicinity for educational purposes; and 14% on membership/leadership of any non-governmental organizations, society and educational groups, and other technology related organizations. On the other hand, more than half of the teachers rated themselves 3 (Intermediate) in Component V: 55% on organizing meetings and seminars in accordance with interests and needs of families and students; 62% on inviting professionals from fields such as industry, trade, agriculture, etc. within the same environment to give lecture/talk on lessons related to their professions; 57% on tapping institutions and organizations in the vicinity for educational

purposes; and 50% on membership/leadership of any non-governmental organizations, society and educational groups, and other technology related organizations. Among the six components, the lowest percentage of teachers with Basic and Limited competency is on component V.

Table 18. Numerical and Descriptive Mean Competency Score in Component V: Relations with Family and Society

Competency Requirements	Competency Assessment Score	
	Numerical	Descriptive
1. Organization of meetings and seminars in accordance with interests and needs of families and students	2.43	Limited
2. Inviting professionals from fields such as industry, trade, agriculture, etc. within the same environment to lessons related to their professions.	2.30	Limited
3. Tapping institutions and organizations in the vicinity for educational purposes	2.30	Limited
4. Membership/leadership in any of non-governmental organization, society and educational groups, and other technology related organizations	2.46	Limited
Over-all mean	2.37	Limited

Table 18 is another view of the TLE teachers' competency rating in Component V: Relation with Family and Society: 2.43 on organizing meetings and seminars in accordance with interests and needs of families and students; 2.30 on inviting professionals from fields such as industry, trade, agriculture, etc. within the same environment to give lecture/talk on lessons related to their professions; 2.30 on tapping institutions and organizations in the vicinity for educational purposes; and 2.46 on membership/leadership of any non-governmental organizations, society and educational groups, and other technology related organizations.

The numerical ratings vividly suggest low competency level on the skills required in component V. Possible explanation is the bureaucratic structure of the community officials, industry, and private organization which provides a not so easy access on the part of the academic community.

Table 19. Frequency and Percentage of Teachers by Competency Score in Component VI: Knowledge of Curriculum and Content

Competency Skill Requirement	1.00-2,50		2.51-3,50		3.51-5.00	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1. Full awareness of the objectives of TLE	5	6%	31	41%	40	53%
2. Full awareness of the learning competencies to develop among students in each of the TLE areas						
2.1 Industrial Arts	35	46%	20	26%	21	28%
2.2 Home Economics	22	29%	25	33%	29	38%
2.3 Computer and Entrepreneurship	35	46%	22	29%	19	25%
2.4 Agriculture and Fishery Arts	53	70%	11	14%	12	16%

In table 19, the percentages of the TLE teachers who rated themselves 4 or better in Component VI: Knowledge of Curriculum and Content are as follows: 53% on awareness of the objectives of Technology and Livelihood Education; and 38%, 28%, 24%, and 16% on awareness of the learning competencies to be developed among the students in Home Economics, Industrial Arts, Computer and Entrepreneurship, and Agriculture and Fishery Arts, respectively. The percentages of the TLE teachers who rated themselves as having intermediate competency (3.00) in Component VI are as follows: 41% on awareness of the objectives of Technology and Livelihood Education; and 26%, 33%, 29%, and 14% on awareness of the learning competencies to be developed among the students in Home Economics, Industrial Arts, Computer and Entrepreneurship, and Agriculture and Fishery Arts, respectively.

The percentages of the TLE teachers who rated themselves as having basic or limited competency (1 or 2) in Component VI are as follows: 6% on awareness of the objectives of Technology and Livelihood Education; and 46%, 29%, 46%, and 70% on awareness of the learning competencies to be developed among the students in Home Economics, Industrial Arts, Computer and Entrepreneurship, and Agriculture and Fishery Arts, respectively.

Table 20. Numerical and Descriptive Mean Competency Score in Component VI: Knowledge of Curriculum and Content

Competency Requirements	Competency Assessment Score	
	Numerical	Descriptive
1. Full awareness of the objectives of TLE	3.61	Intermediate
2. Full awareness of the learning competencies to develop among students in each of the TLE areas		
2.1 Industrial Arts	2.62	Intermediate
2.2 Home Economics	3.00	Intermediate
2.3 Computer and Entrepreneurship	2.59	Intermediate
2.5 Agriculture and Fishery Arts	2.08	Limited
Over-all mean	2.78	Intermediate

Table 20 shows the mean numerical competency scores of the TLE teachers in Component VI as follows: 3.61 on awareness of the objectives of Technology and Livelihood Education; and 2.62, 3.00, 2.59, and 2.08 on awareness of the learning competencies to be developed among the students in Home Economics, Industrial Arts, Computer and Entrepreneurship, and Agriculture and Fishery Arts, respectively.

Summary

The study sought to analyze the gap between the competency level and the standard teaching competencies and to identify the competency needs of TLE teachers in the Second Congressional District of Pangasinan. The study employed a descriptive type

research method wherein 76 TLE teachers and 5 administrators served as respondents of the study. Two sets of assessment questionnaires for each set of respondents were used as instruments of the study. Both assessment questionnaires were a checklist of 34 essential competencies for teaching TLE. The standard competency skills were based with some modifications on the mapping of the DepEd RPMS-PPST and Generic Teaching Competencies as determined by the Ministry of Education, Turkey (2006), as an output of a 4 year study funded by the European Union.

The study was guided by the Organization-Task-Person (OTP) framework of needs assessment described by McGehee and Thayer (2011) to provide information about where and when training is needed in an organization.

Percentages and averages were used to summarize and describe the data. Gap analysis was done to answer the problems posted in the study. T-test and Analysis of Variance were used to test the hypotheses of the study.

The data gathered from the study after a careful detailed analysis yielded the following significant findings:

1. Seventy five percent (75%) of the TLE teachers are female and 69% are below 40 years old. Thirty seven percent of the teachers are Home Economics majors, 21 percent are Industrial Arts majors, 18 percent are graduates of computer related courses, 9 percent are graduates of Agri- business courses, and 14 percent are graduates of business-related and other courses. Seventy one percent have less than 10 years teaching experience and 49 percent have not attended any seminar/training. All of them have less than 24 accumulated hours of seminar/training. Administrators are more than 40 years old with more than 15 years teaching experience and have been administrators for more than 5 years.
2. The existing competency level of the TLE 9 teachers is intermediate competency (2.51- 3.50). Numerical rating of the teachers was 2.82 and the numerical rating of the administrators was higher at 3.50. The numerical competency rating of the teachers, as assessed by the teachers and the administrators in each of the 6 components, were: 2.82 and 3.30 on Personal and Professional Values, 2.84 and 3.40 on Knowledge of Student Skills and Talents, 3.14 and 3.57 on Learning and Teaching Techniques, 2.94 and 3.40 on Monitoring and Evaluation Skills, 2.38 and 3.35 on Relationship with School-Family and Society, and 2.78 and 3.90 on Knowledge of Curriculum and Content, respectively.
3. The present competency levels of TLE teachers are lower than the desired standard competency. Significant differences (gaps) were identified in all the six components of standard competency. Three major needs identified were activities that would enhance competency of students; motivation and opportunities to acquire/enhance, and apply enhanced skills; and renewed professionalism and rejuvenated teaching advocacy and calling. Specifically, the needs include programs/ projects/activities related to 1) tapping institutions and organizations in the vicinity for educational purposes; 2) organizing meetings and seminars in accordance with interests and needs of families and students; and 3) membership/leadership on any non-governmental organizations, society and educational groups, and other technology related organizations. There is also a need for enhanced skills on 1) application of the proper statistical techniques in data analysis, 2) conduct of researches to improve learning-teaching process, 3) planning and conducting outdoor activities, and 4) assessment and development of the learning competencies among the students in Agriculture and Fishery Arts.

Conclusions

Based on the findings of the study, the following conclusions were drawn:

1. The TLE teachers are mostly female aged 40 years or less, with less than 10 years of teaching experience. The undergraduate courses of most of the teachers are related to TLE; however, most of them have not attended seminar/training programs related to TLE. The administrators are male and female aged 40 years and older with more than 15 years teaching experience. All, except one, are graduates of TLE-related courses and have taught TLE for more than 10 years.
2. The administrators rated the TLE teachers' competency level significantly higher than the self-rating of the teachers; however, the ratings were both interpreted as intermediate competency.
3. There are no significant differences in the competency rating of TLE teachers when they are grouped according to demographic profile. Ratings are interpreted as intermediate competency.
4. There exists a significant gap (difference) between the present competency level and the desired standard competency requirements of TLE teaching among the teachers.

Recommendations

Based on the conclusions drawn from the findings of the study, the following enhancement programs were recommended.

1. Programs/projects/activities to make the teachers closer to the community. Programs to include tapping resources and personalities from the industry, government agencies, and non-government organizations.
2. Development of an effective Observation Process for both administrators and teachers to include not only the criteria for rating of existing competencies but also feedback mechanism and observer-teacher conferencing strategies for the improvement of the teachers' teaching competency. The process should be able to identify excellent and low performing teachers. It should also include a monitoring scheme to determine improvements along areas that need improvement for low performing teachers. Mandatory monthly retooling activities on topics like:
 1. Conduct of research,
 2. Preparation of paper for presentation,
 3. Construction of test instruments,
 4. Alternative testing methods, and
 5. Non-traditional assessment tools.
2. Moral and value recovery programs to remind the teachers on the advocacies of teaching and to rekindle their interest for self-improvement for the benefit of the students and the community.
3. An evaluation of the assessment tool used in this study is, likewise, recommended. It is suggested that teacher evaluation be conducted by peers, students, and administrators.

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