

# Related Factors of Technology and Livelihood Education Program and Learning Competencies of Junior High School

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**Abstract:** *The study investigated related factors and level of attainment of learning competencies of Grade 10 Technology and Livelihood Education (TLE) Program at Agusan del Sur National High School, San Francisco, Agusan del Sur. Research questions were answered and hypothesis was tested. The population of the study was 91, made up of 79 students and 12 TLE teachers. Validated questionnaire was used to collect data. Analysis of the results was carried out after which, a focused group discussion (FGD) was conducted. Mean and standard deviation were used to answer the research questions. The analysis of variance was used to test the hypothesis at 0.05 level of significance. Findings of the study showed that goals and objectives were highly implemented among the factors; tools and equipment were slightly implemented. The competencies on crop production and refrigeration and air-conditioning were moderately attained. On the other hand, the competencies on cookery and electric installation and maintenance were slightly attained. In general, the extent of implementation on technology and livelihood education factors was moderately implemented and the level of attainment of the desired learning competencies was slightly attained. At 0.05 level of significance, there was no significant relationship between related factors and desired learning competencies. It is recommended that TLE teachers and school administrators must revisit training regulations of involved specializations and consider the proposed intervention program.*

**Keywords**—Technology and Livelihood Education, Related Factors, Learning Competencies

## 1. INTRODUCTION

Investment in education is done at three levels the primary, secondary and tertiary. A more educated society may lead to higher rates of investment, make everybody more productive through the capacity to introduce new and better production methods, and lead to introduction of new technologies [1]. Investing in education leads to faster growth for developed and newly industrialized countries [2].

Education is a continuous and never ending process in response to the needs and demands of the times and conditions. In the past, people viewed education as a process of only developing skills, attitudes and values required citizenship and active participation in society. Today, more people view education as a product to be used in a market place, to be bought and sold by academic institutions, wherein the mark brand is quality, the mark for global competitiveness [3].

The Philippines has begun a fundamental overhaul of its educational system through introduction of the “K to 12” program and the country is seeking to highlight basic education and overcome difficulties in the system such as low student learning performance, congested curricula, shortness of secondary education, and shortcomings that Filipino scholar have pointed out [4]. The learning goal in the new K to 12 Curriculum is the attainment of 21st century skills notably learning and innovation skills, IT and media skills, effective communication skills, life and career skills. It aims to bring holistically developed Filipinos within 21st century skills who are ready for employment, have entrepreneurship and also possess mid-level skills and higher education upon graduation from high school [5].

Agusan del Sur National High School (ASNHS) is a learning institution aims to scientifically provide every learner a quality secondary education and develop a value-oriented, academically competent and technically prepared learners through formal and non-formal education. The program includes Technology and Livelihood Education (TLE) for junior high school students from Grades 7 to 10 having various specializations in the field of cookery, crop production, refrigeration and air conditioning and electric installation and maintenance and others as an exploratory in junior high school in preparation for the senior high school. It provides a continuum toward preparation for skills development qualifications for National Certificates I and II (NC I and NC II) or Certificate of Competencies (COC).

Apparently, the TLE students with various specializations were facing problems specifically on low student performance on a certain competency and low number of passers during the national assessment. These problems were supported by ASNHS-TLE Accomplishment Report S.Y. 2015-2016. It showed the students who were certified by TESDA as NC II and COC holders as they were recognized during the completion ceremonies where 52 out of 123 students were Cookery NC II holders, 34 out of 117 students were Crop Production NC II holders, 15 out of 54 students were Electric Installation and Maintenance COC holders and 4 out of 51 students were Refrigeration and Air-conditioning COC holders. The accomplishment report shows the poor performance of the students in the assessment of COC and NC where few of them passed. These are the reasons why the researcher was prompted to conduct the study in order to ascertain whether the existing related factors of the TLE influence the learning competencies of the students.

## 2. STATEMENT OF THE PROBLEM

This study ascertained the related factors and level of attainment of learning competencies of TLE Program in Agusan del Sur National High School, San Francisco, Agusan del Sur.

Specifically, it sought to answer the following questions:

1. What is the extent of implementation of technology and livelihood education related factors in terms of the following:
  - 1.1 goals and objectives;
  - 1.2 teaching-learning materials;
  - 1.3 tools and equipment; and
  - 1.4 physical facilities?
2. What is the level of attainment of the desired learning competencies in terms of knowledge and skills of the following specializations:
  - 2.1 cookery;
  - 2.2 crop production;
  - 2.3 refrigeration and air conditioning; and
  - 2.4 electric installation and maintenance?
3. Is there a significant relationship between the extent of implementation of related factors and level of attainment of learning competencies?

## 3. METHODOLOGY

This study utilized descriptive-correlational method using an assessment technique anchored on K to 12 Curriculum and Technical Education Skills and Development (TESDA) Training Regulations (TR) in various specializations.

The study was conducted in Agusan del Sur National High School (ASNHS), San Francisco, Agusan del Sur. It involved 79 out of 334 Grade 10 students with various field of specialization in the TLE and 12 TLE teachers handling grade 10 cookery, crop production, refrigeration and air conditioning and electric installation and maintenance subjects. The study employed stratified random sampling for student respondent and complete-enumeration for teacher respondents. The student respondents focused on the related factors of technology and livelihood education program. Likewise, the teacher respondents were responsible on the level of attainment of learning competencies of students in various field of specialization such as cookery, crop production, refrigeration and air conditioning as well as electrical installation and maintenance. A Sloven's formula which  $N = \frac{N}{e}$  where  $N =$  population and  $e = 0.05$ , the minimum sample size of 79 was applied to represent the population of 334 student respondents.

The data obtained from the study were subjected to different statistical treatment namely: 1. Computation of arithmetic mean to determine the extent of implementation of the TLE factors and the level of attainment of the desired learning competencies of specializations, and 2. Pearson-R was used to compute the co-efficient of correlation between

the extent of implementation of TLE related factors and level of attainment of the desired learning competencies. T-test of significant correlation was used to determine if a significant relationship exists between the extent of implementation of TLE related factors and the level of attainment of the desired learning competencies.

## 4. RESULTS

### Extent of Implementation of TLE Related Factors

Based on the responses given by students, it reveals that among the related factors, goals and objectives got the highest over-all mean of 3.52 as highly implemented as these were very implementable while tools and equipment got the lowest over-all mean of 2.54 (slightly implemented) as upon its implementation. Meanwhile, teaching and learning materials and physical facilities got 2.87 and 2.73 respectively or moderately implemented.

### Level of Attainment of Desired Learning Competencies

The competencies for crop production got the highest mean scores of 89.02 verbally described as moderately attained; refrigeration & air-conditioning gained a mean of 86.58 or moderately attained, cookery with a mean score of 84.61 (slightly attained), however, the competencies of electric installation and maintenance got the lowest mean scores of 81.36 with the verbal description of slightly attained.

### Significant Relationship of TLE Factors and Learning Competencies in Cookery

Based on the cookery specialization, it reveals the over-all  $r$ -value of -0.190 and  $p$ -value of 0.342 that is greater than 0.05, therefore null hypothesis is accepted. This means that in Cookery, the related factors are not significant to learning competencies; it also implies that the related factors of TLE in cookery do not directly affect the knowledge and skills of the learners. Moreover, the factors goals and objectives, teaching-learning materials, and physical facilities all got  $p$ -values of greater than 0.05 level of significance. This emphasized that null hypothesis is accepted. However, for the factors tools and equipment, it gained the  $p$ -value of 0.028 and  $r$ -value of -.422 that is lesser than 0.05 which reflects the null hypothesis is rejected.

### Significant Relationship of TLE Factors and Learning Competencies in Crop Production

For crop production, findings showed that the over-all  $r$ -value of 0.260 with  $p$ -value of 0.199 that is greater than 0.05 which denotes that null hypothesis is accepted. The goals and objectives gained an  $r$ -value of 0.165 and a  $p$ -value of 0.421. The factor, teaching-learning materials had  $r$  and  $p$  values of -0.058 and 0.779, respectively. Tools and equipment attained an  $r$ -value of 0.286 and  $p$ -value of 0.157

while the factor, physical facilities with its r-value of 0.161 and p-value of 0.433. The null hypothesis of all the factors for crop production were accepted since their p-values were all greater than 0.05 level of significance. This means that related factors had no significant relationships with learning competencies and it denotes that related factors of crop production do not directly affect the competencies of students in terms of knowledge and skills.

### **Significant Relationship of TLE Factors and Learning Competencies in Refrigeration and Air – Conditioning**

The responses for refrigeration and air-conditioning indicate the over-all r-value of 0.388 with the p-value of 0.191 a greater than significant level of 0.05 which means that the null hypothesis is accepted. The null hypothesis of all the factors was accepted since all p-values were greater than 0.05. This means that the related factors are not significant to learning competencies.

### **Significant Relationship of TLE Factors and Learning Competencies in Electric Installation and Maintenance**

The result tells that the related factors are not significant to learning competencies of electric installation and maintenance. For goals and objectives, -0.140 of r-value and 0.649 of p-value which means that the null hypothesis is accepted. Teaching-learning materials as related factor in Electric Installation and Maintenance gained a not significant of p-value of 0.447 and r-value of 0.231. Moreover, the tools and equipment attained -0.283 of r-value and 0.348 of p-value which means the null hypothesis is accepted. Lastly, the physical facilities has r-value of 0.278 and p-value of 0.357 that is interpreted as no significant relationship between its related factors and learning competencies.

## **5. CONCLUSION**

The findings of the study clearly viewed a greater emphasis given to the goals and objectives as it was highly implemented and manifested since it was easy to implement guided with the curriculum. On the other hand, lesser emphasis was given to tools and equipment as perceived by the students in various specialization since it was difficult for the school to invest on sophisticated and highly modernized tools and equipment due to budget constraints and priorities.

The students with the specialization of Crop Production and Refrigeration and Air-Conditioning were more competent than Cookery and Electric Installation and Maintenance as manifested since cookery has varied core competencies and requires technical know-how. Furthermore, electric installation and maintenance had minimal core competencies but the mastery of the details during the application is required specifically on the technical aspects where students find it difficult to acquire skills and competencies. It means that cookery and electric

installation and maintenance had to be properly evaluated especially during the application and execution of the desired learning skills and competencies where mastery of the procedure is a must. In addition, related factors are not significant to learning competencies of the students.

All of the factors of various specialization are not significant to the learning competencies.

## **6. RECOMMENDATION**

The students must have regular and self-paced trainings and hands-on activities accompanied with the availability and adequacy of the tools and equipment and participation on institutional assessments especially for the cookery and electric installation and maintenance students must be given full attention which found necessary during the assessment in order to become competent. On the other hand, teachers must conduct individual monitoring or pre and post assessment on the students to ensure that proper skills have been acquired by these students in preparation for the assessment especially in cookery and electric installation and maintenance. They must follow the Training Regulation to align the training standards and assessment standards. The school administrators should adopt a program aimed at addressing the least implemented factors and least attained competencies. The department heads or coordinators must make it a practice of diagnosing the level of mastery of the students based on the Training Regulation. They must provide the needed learning resources of teachers and learners to attain favourable teaching-learning process. Furthermore, as one of the pillars of students' learning, parents must strengthen their partnership with educators by standing as a support mechanism outside the school premises. They can help the school by providing additional resources and monitoring the learning competencies of their child.

It is recommended that as equal study must be conducted in a wider scale and across the different field of specialization and/or subject areas.

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