



Determinants of Learners' Academic Achievement in Technology and Livelihood Education

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ABSTRACT

This study determined the influence of selected determinants such as teacher competence, learners' work motivation and availability of materials and equipment on academic achievement in TLE of junior high school learners in secondary schools in Bustos, Bulacan during the School Year 2024–2025. With explanatory sequential of mixed methods as research design and 4 school heads, 3 head teachers, 18 TLE teachers and 516 learners as respondents of the study, findings showed that the TLE teachers are highly competent as to instructional skills, classroom management skills, guidance skills and personal and professional skills. The junior high school learners are highly motivated as to their work in terms of work skills and work attitudes. The materials/tools/equipment in TLE as to cookery was "adequate", in Agri-Crops Productions was "slightly adequate" and in ICT was "adequate." The academic achievement of junior high school learners in TLE was described as "satisfactory." Significant relationship was found between the teachers' competence and learners' academic achievement in TLE. Likewise, significant relationship was found between the work motivation of junior high school learners and their academic achievement in TLE. Similarly, significant relationship was found between the availability of materials/tools/equipment and learners' academic achievement in TLE. Based on the findings of the study, this conclusion was drawn: the teacher competence, learners' work motivation and availability of materials and equipment are significant predictors of learners' academic performance in TLE.

Keywords: *Academic Achievement, Agri-Crops Productions, Availability of Materials/Tools/Equipment, Classroom Management Skills, Cookery*

Introduction

These days, teaching Technology and Livelihood Education (TLE) is a very difficult task. It requires in-depth understanding of the curriculum, standards, and subject matter, as well as passion, empathy, inventiveness, a love of learning, and a desire to improve the lives of the students. In order to create certified National Certificate holders, it also requires high-quality training in terms of mastery of learning competencies in each TLE field of expertise. Furthermore, the stage of a teacher's life, especially for those teaching TLE, has never been adequately acknowledged. TLE is a subject that many students nowadays overlook and take for granted, even though it has a huge impact on their lives. The need to look back and discern on the competencies of the TLE teachers in the field is an existing scenario which needs to be addressed.

Numerous issues that impact the students' performance in TLE were further discovered. The first is the students' financial capacity, which is determined by their teaching experiences and the opinions of TLE teachers and other subject teachers in various topic areas. The bulk of the students come from low-income families. Some of the students are unable to pay for the necessary ingredients during the practicum. Poorer school facilities and a shortage of supplies, tools, and equipment—students must carry their own materials—are the second issue. Students use the study shed because the school does not have a laboratory room. The intended performance outcome is never guaranteed by the learners' desired outputs. Some schools do have technology and facilities, but their capacity to accommodate students with ICT and cooking specializations is constrained. Finally, some educators lack the training and experience necessary to teach TLE. Teachers are multi-talented, especially when it comes to the several instructional responsibilities they are allocated. Teachers should have been hired by human resources and placed in their areas of expertise. As a result, the learning process fails (Segundo, 2022).

According to Cariaso and Tacico's (2020) observations, many students today overlook and take for granted the topic, failing to understand its enormous impact on their lives despite its obvious importance. Sometimes, the importance of this subject in giving pupils real-world knowledge and skills is overlooked. It is clear that TLE is not always given priority. But TLE is a tool to enhance the quality of life, as it gives necessary skills and knowledge to the youth, developing a constructive work attitude and responsible resource utilization.

The enclosure of DepEd order 67, series 2012, which offers two types of curriculum for regular high schools, reflects the guidelines for the implementation of Technology and Livelihood Education (TLE) in public and private schools of the K–12 Basic Education Program. These are as

follows: The Tech-Voc-based TLE is designed based on the training regulation (TR) of the Technical Education and Skills Development Authority (TESDA). The development of technical skills in whatever field of specialization that the students wanted to pursue was therefore prioritized.

Therefore, in order to implement DepEd Order 67, series 2012, real-world learning experiences that will undoubtedly improve students' skills must be provided by facilities, equipment, and trainer-certified teachers who hold NCs (DepEd Order, 2012).

Additionally, the secondary level development and provision of Technology and Livelihood Education (TLE) is thought to be the answer to the industry's ongoing needs, especially in addressing the issue of employment mismatch in the Philippines (Gregorio, 2020). The primary foundation of the TLE subject is the requirement to impart occupational knowledge and expertise. Additionally, it emphasizes the development of critical thinking, particularly in the younger generation. However, there are still certain issues that arise in the conduct of teaching TLE at the high school or secondary level. These issues and challenges include the following: a lack of appropriate and efficient trainings that are offered and that are related to the field of specialization; the lack of enough capital investment; the planning of TLE subjects does not usually include allowances for contingencies especially for the development and establishment of various needed instructional facilities and teaching strategies and that there is also the unrepaired equipment and tools which is due to the absence or lack of adequate allocated budget and allowance and thus providing further challenges in the teaching of the TLE subject in secondary school levels and also posing a more significant challenge for teachers in making adjustments on how they can better deal with such challenges that are becoming a hinder in the way they are teaching the specific subject to the students who are expected to learn a lot from the particular subject that can make them well-equipped and business-ready (Palafox et al., 2021).

Harina (2021) pointed out that since Technology and Livelihood Education (TLE) is a subject that aims to give students the opportunity to engage with real-world activities that will subsequently improve their skills in a new component, teachers must validate the learning process by letting students experience the learning concept. For pupils to use the skill concept, there must be enough readily available tools and resources that are tangible. To provide TLE students with learning and skill practice, additional facilities, tools, materials, or equipment are required to accommodate all of the students enrolled in the course. Tan (2021) emphasized that it is necessary to pay attention to how the institutions teaching practical themes distribute the tools, resources, and equipment. Such learning resources must be available for a skill subject in order to inspire students to practice and effectively carry the abilities necessary for the particular component.

In light of this, the main goal of this research is to examine the factors that influence students' academic performance in Technology and Livelihood Education.

Conceptual/Theoretical Framework

Technology and Livelihood Education (TLE), which focuses on activities meant to improve students' individual and group development, is a major component of the secondary education development program curriculum. This course gives high school students the skills they need to pursue profitable and productive endeavors, especially if their access to postsecondary education is restricted for any number of reasons. In essence, TLE is a vocational education program that fosters a sincere love of work and develops skills that allow people to make financial contributions to their families, communities, and country (Tan, 2021).

The goal of the Technology and Livelihood Education curriculum is to give students a broad range of abilities, including knowledge, skills, work values, and critical life skills. According to the K–12 Toolkit, these proficiencies cover a wide range of subjects, including home economics, computer-aided design, carpentry, clothing construction, electricity and electronics, agriculture, food and beverage, handicrafts, cosmetology, home nursing, industrial arts, agri-fishery arts, and information and communication technology (ICT). TLE's efficacy depends on developing a strong work ethic, mastering information and knowledge, applying skills and procedures effectively, and supporting the growth of critical life skills (Ssemugenyi, 2023).

By teaching industry-specific skills and knowledge, TLE instructors were important in preparing students for the workforce. However, there are several challenges in making sure that students truly thrive in both knowledge and skills while providing immersive, hands-on learning opportunities.

The K–12 curriculum prepares kids for entering the workforce as early as the seventh grade, despite popular belief. Junior High School (JHS) technology and livelihood education (TLE) courses according to the guidelines set forth by the Technical Education and Skills Development Authority (TESDA). As a result, the students would be able to obtain the national certificate (NC) that the business requires.

In Grades 7 and 8, every TLE topic is exploratory. This indicates that every student had the opportunity to investigate the four primary TLE courses: [1] Industrial Arts; [2] Home Economics; [3] Information and Communication Technology; and [4] Agri-Fishery Arts. According to the demands of the community and the resources available to the school, students are allowed to select a minimum of four mini-courses in Grade 7 and an additional four in Grade 8.

A Certificate of Competency (COC) has not yet been obtained by learners in grades 7 and 8. Earning a COC in Grade 9 and an NC I/II in Grade 10 are prerequisites for the exploratory courses.

Out of the exploratory courses he selected in seventh and eighth grade, the student choose one to concentrate on in ninth grade. The student may receive a COC at this level. The TLE specialized course that the student selected in ninth grade is pursued in grade ten. According to the TLE course he selected, this enabled him to receive at least an NC Level I or II (NC I or II).

In the global community, technology and livelihood education are crucial because they enable students to expand their knowledge and acquire practical skills that will change their life. Education is crucial since it molds young students' minds to include all of the information pertaining to home economics, livelihood education, and even the world they live in. By teaching and learning the subject, students are able to step outside of their comfort zones and eventually explore the world. These learning experiences can even transform their life in the long run and prepare them to meet demands from around the world.

Even while the topic has been discussed as being important, it hasn't gotten as much attention as the others. The problem with the situation that is being described here is that TLE instruction should focus on giving each student tangible experiences related to the concepts they need to learn. It therefore came down to the traditional perspective of "learning by doing," which can only be achieved when students employ the right resources, facilities, and equipment and relate them to how well they really complete the activities that are required of them. Because the specialized field in TLE is not treated seriously, the students' performances suffer.

The foundation of this work is Expectancy-Value Theory (EVT). Cook and Artino Jr. (2020) claim that this theory defines motivation by two primary factors: value, which refers to people's perceived worth or interest in finishing tasks, and expectancy, which refers to people's expectations of success (for instance, the extent to which they believed they would be successful). According to this study, interest is a particular kind of motivation that is an effective process that drives learning, directs academic and professional paths, and is necessary for academic achievement.

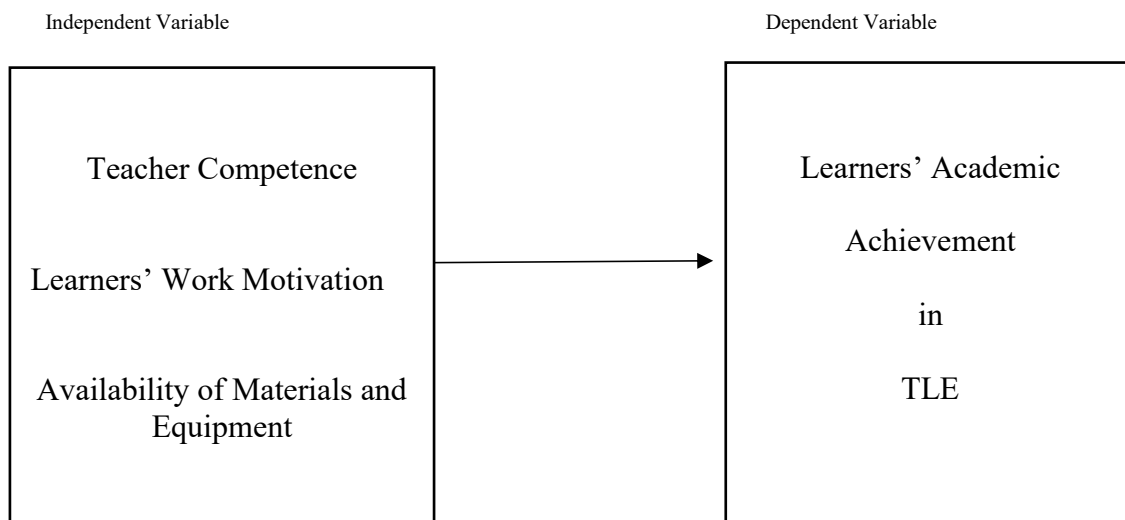
This study aims to give a thorough grasp of the complex factors that contribute to the different levels of learning interest displayed by students within the TLE subcomponents' competences, drawing on the well-established theory of the Expectancy-Value Model. According to this hypothesis, students' expectations of success and the perceived worth of TLE education have an impact on their enthusiasm in learning TLE competencies. Students' motivation in learning is likely to rise when they think they can succeed in TLE classes and see the importance of the skills they acquire.

The concepts and theories presented and discussed above will serve as guide in the conduct of the study. Further, this serve as basis in arriving at the conceptual framework of the study which is illustrated in Figure 1. It can be seen from the figure that the independent variables of the study are the possible determinants of learners'

The dependent variable in this study is academic achievement in TLE. The graphic illustrates the chosen factors, which include the availability of resources and tools for teaching TLE, learner motivation for their work, and instructor competency.

Figure 1.

Paradigm of the Study



Statement of the Problem

This study determined the influence of selected determinants such as teacher competence, learners' work motivation and availability of materials and equipment on academic achievement in TLE of junior high school learners in secondary schools in Bustos, Bulacan during the School Year 2024–2025.

Specifically, it sought answers to the following questions:

1. How may the competence of teachers in TLE as perceived by themselves, learners, and school heads be described in terms of:

1.1 instructional skills;

1.2 classroom management skills;

1.3 guidance skills; and

1.4 personal and professional skills?

2 How may the work motivation of junior high school learners be described in terms of:

2.1 Work skills; and

2.2 Work attitudes?

3 How may the availability of materials/tools/equipment in TLE as perceived by the learners, teachers, and school heads be described as to:

3.1 Cookery;

3.2 Agri-Crops Productions; and

3.3 ICT?

4 Is there a significant difference in the academic achievement of junior high school learners in TLE based on their grades in the first grading period?

5 Is there a significant relationship between the teachers' competence and learners' academic achievement in TLE?

6 Is there a significant relationship between the work motivation of junior high school learners and their academic achievement in TLE?

7 Is there a significant relationship between the availability of materials/tools/equipment and learners' academic achievement in TLE?

8 How may the respondents' views and insights with regard to the importance of teachers' competence, learners work motivation and availability of materials/tools/equipment on academic achievement in TLE of junior high school students?

9 What program of activities can be crafted from the results of the study?

Hypotheses

The following hypotheses were tested in the study:

1. There is no significant difference in the academic achievement of junior high school learners in TLE based on their grades in the first grading period.
2. There is no significant relationship between the teachers' competence and learners' academic achievement in TLE.
3. There is no relationship between the work motivation of junior high school learners and their academic achievement in TLE.
4. There is no significant relationship between the availability of materials/tools/equipment and learners' academic achievement in TLE.

RESEARCH METHODS

The information about the research and sampling procedures utilized by the researcher were provided in this chapter. The research design employed, as well as the data gathering techniques, and data analysis scheme were also discussed in this chapter.

Research Design

The researcher applied explanatory sequential design of mixed methods research in order to answer the research problem of the study. According to Creswell and Plano Clark (2017), explanatory sequential design consists of first collecting quantitative data and then collecting qualitative data to help explain or elaborate on the quantitative results. The rationale for this approach was that the quantitative data and results provided a general picture of the research problem; more analysis, specifically through qualitative data collection was needed to refine, extend or explain the general picture.

In this research, the influence of selected determinants such as teacher competence, learners' work motivation and availability of materials and equipment on learners' academic achievement in TLE were determined first. Formulation of guided questions followed immediately. These questions were utilized in the conduct of interview to gather the qualitative data. After the thematic analysis for the collected qualitative data, results were integrated to the quantitative findings. This was done to validate and support the results of the study.

Sampling and Respondents

Two kinds of data (quantitative and qualitative) were collected in order to answer the problems raised in the preceding chapter. For the quantitative data, simple random technique was applied to get the sample for learners. Only 20 percent of these learners were chosen at random to participate in the quantitative data collection. While the sampling method that used in selecting the teacher/s, head teacher/s and school head was the total population sampling.

Table 1.*Respondents of the Study*

School	Specialization	Grade	Learners		Teacher/s	Head Teacher/s	School Head
			N	n			
1. Alexis G. Santos National High School	Cookery	9	84	17	1		
		10	90	18	1		
	Agriculture	9	242	48	1	1	1
		10	208	42	1		
	ICT (Illustration)	9	169	34	1		
		10	175	35	1		
2. Aguinaldo J. Santos National High School	Cookery	9	145	29	1		
		10	158	32	2	1	1
	ICT (Illustration)	9	146	29	1		
		10	120	24	1		
3. Dr. Pablito V. Mendoza Sr. High School	Cookery	9	263	53	2	0	1
		10	283	57	1		
4. Cambaog National High School	Cookery	9	123	25	1		
		10	126	25	1	1	1
	ICT (Illustration)	9	122	24	1		
		10	120	24	1		
Total			2574	516	18	3	4

5. For the qualitative part of the study, two learners per specialization in each school were requested to participate in the interview. They were selected using the lottery technique. In this method all learners' names were numbered on separate slips of paper of same size, shape and color. These papers were then folded and mixed up in a box. A blindfold selection was made to select the learners subjected to be interviewed.

Instruments

Two types of data, quantitative and qualitative data were collected in order to address the aim of this study.

To collect the quantitative data required for the investigation, a modified questionnaire consisting of three sections was employed. The questionnaire's first section, which was modified from Villegas (2022), was used to characterize the teachers' proficiency in instructing TLE. The work motivation of junior high school students was also described in Part II, which was adopted from Villegas (2022). However, Part III, which described the equipment, tools, and materials that were available, was modified from the TLE modules. These amended surveys were altered to conform to the nation's present educational framework. Additionally, for the sake of uniformity, some items were removed from certain categories.

The researcher developed questions for the qualitative data collection based on the study's quantitative results. The adviser was consulted in order to verify the validity of the interview questions.

Data Gathering Procedure

Before the conduct of the study, the researcher accomplished first all the documents required by the DepEd-Bulacan and by the Institute of Education-BASC. After accomplishing all the requirements, a requested letter was sent to the Schools Division Superintendent of Bulacan to use Alexis G. Santos National High School, Aguinaldo J. Santos National High School, Cambaog National High School and Dr. Pablito V. Mendoza Sr. located in Bustos, Bulacan as respondents of the study. Upon receiving the approved permit to conduct the study, the researcher coordinated with the principals of the school respondents for the schedule of quantitative and qualitative data collection.

The researcher personally administered the questionnaire to collect the quantitative data so that if the respondents needed some clarifications, she easily explained anything about it. Likewise, the conduct the interview with the respondents was personally done by the researcher. Prior to the interview, respondents were given adequate information of the topics that were discussed in the said interview.

Meanwhile, the grades of the respondents were obtained from the TLE teachers.

Data Analysis

Mean and standard deviation was used to describe the junior high school learners' academic achievement in TLE. Meanwhile, weighted mean was computed in order to describe the teachers' competence and learners' work motivation. On the other hand, frequency distribution was presented to describe the availability of materials/tools/equipment in TLE. Finally, correlation analysis was performed to determine if significant relationship existed between teacher competence, learners' work motivation and availability of materials and equipment and the academic achievement in TLE of junior high school learners. To interpret the collected qualitative data, thematic analysis was done.

Ethical Considerations

Some guidelines were needed to be taken into consideration and to be observed by the researcher in the conduct of the study. These included the need to express respect for the confidentiality and privacy of the respondents and maintain and assure their participation were voluntary and that confidentiality of the gathered data were maintained, as well as with all of the information collected during the data collection method. Moreover, the researcher also respected the participants' time and was polite and prepared at all times, particularly during the interview. Tactfulness was essential and was expressed if the respondents needed more time to be ready to explain or elaborate. They was not forced to open up but should be offered the opportunity to try and explain their thoughts in the data collection.

Additionally, consent and assent forms were secured before obtaining the needed data in the study. Further, respondents were given assurance that after passing the final defense in May 2025, all gathered data stored in the researcher's laptop were deleted permanently. In the same manner, the hard copy of the administered questionnaires were destroyed through shredding.

RESULTS AND DISCUSSIONS

This chapter deals with the presentation, analysis and interpretation of the data collected and the results of the statistical treatment employed in the study with the purpose of determining the relationship between selected determinants such as teacher competence, learners' work motivation and availability of materials and equipment and the academic achievement in TLE of junior high school learners in secondary schools.

The Academic Achievement of Junior High School Learners in TLE

In this part of the study, Table 11 presents the frequency and descriptive measures of the academic achievement of the junior high school learners in TLE.

Table 2.

Distribution of Learners According to Academic Achievement in TLE

Grading Scale	f (N=516)	%	Descriptor	Remarks
90 – 100	32	6.20	Outstanding	Passed
85 – 89	145	28.10	Very Satisfactory	Passed
80 – 84	183	35.47	Satisfactory	Passed
75 – 79	156	30.23	Fairly Satisfactory	Passed
Below 75	0	0.00	Did Not Meet Expectations	Failed
Mean = 82.33 (Satisfactory)		Standard Deviation = 4.76		

It is well noted in the table that more than one-third or 35.47 percent of the learner respondents received grades from 80 to 84 with a verbal description of "satisfactory." Meanwhile, 6.20 percent of these learners obtained grades that lie within the highest-grade bracket of 90 to 100 with a verbal interpretation of "outstanding." A closer look at the table reveals that the mean grade of the learners was registered at 82.33 (satisfactory) while the standard deviation which measures the spread of the respondents' grades from the mean was calculated at 4.76. This lower standard deviation (SD) in grades indicates that learners' performance in TLE is more clustered around the mean or average, meaning grades are more consistent and there's less variation.

Results of the analysis emphasizes that lower grades in Technology and Livelihood Education (TLE) can be due to various factors, including difficulty with the subject matter, lack of interest, or insufficient preparation. Some learners may also struggle with hands-on activities and practical applications, which are crucial for success in TLE. Additionally, factors like inadequate resources or ineffective teaching methods can contribute to lower grades.

In conjunction to the present findings, it was also revealed in the study conducted by Dela Cruz (2024) in selected secondary schools in Tarlac City, the Philippines that the average academic performance of the Grade 8 students in TLE was generally satisfactory, although the ideal scenario was for all students to achieve an outstanding academic performance.

The Relationship Between the Teachers' Competence and Learners' Academic Achievement in TLE

Table 3 displays the results of the correlation analysis which was performed to determine if significant relationship existed between teachers' competence and learners' academic achievement in TLE.

Table 4 *Results of the Correlation Analysis on the Relationship between Teachers' Competence and Learners' Academic Achievement in TLE*

teachers' competence	learners' academic achievement in TLE	
	r-value	p-value
instructional skills	0.543*	0.028
classroom management skills	0.538*	0.031
guidance skills	0.521*	0.038
personal and professional skills	0.509*	0.041

Legend: * = significant ($p \leq 0.05$)

r-value = correlation value

p-value = probability value

It can be seen from the table that significant relationship was found between the teachers' competence and learners' academic achievement in TLE. This significant relationship was brought about by the fact that the computed probability values that ranged from 0.028 to 0.041 are less than the 0.05 level of significance. Further observation of the tabulated results reveals that moderate positive correlation existed between the aforementioned variables as implied by the computed r-values that ranged from 0.509 to 0.543. This discloses that as the level of the teaching competence of teachers increases, the level of academic achievement of learners in TLE also increases.

This suggests that effective instruction, classroom management, and guidance skills from competent TLE teachers lead to improved learner achievement.

Accordingly, Ogo's (2024) study found a substantial association between students' academic achievement, work abilities, and attitudes and the competency of TLE teachers. Furthermore, aside from instructional and work abilities, there is a strong correlation between the TLE teachers' proficiency in classroom management, advice, and personal and professional skills. However, there is no significant correlation between the students' work attitudes and the classroom management skills of the TLE teachers and their assessment of their competence in terms of personal and professional skills, guidance skills, and instructional skills alone.

It is advised that recruiting criteria be tightened to ensure that candidates for teaching positions are qualified for professional growth that will boost output at work. The leadership of the school should provide teachers recognition for showcasing their enthusiasm, passion, and best practices.

The Relationship Between the Work Motivation of Junior High School Learners and their Academic Achievement in TLE

Table 13 exhibits the results of the correlation analysis which was performed to determine if significant relationship existed between the work motivation of junior high school learners and their academic achievement in TLE.

Table 5.

Results of the Correlation Analysis on the Relationship between Work Motivation of Junior High School Learners and their Academic Achievement in TLE

Learners' Work Motivation	learners' academic achievement in TLE	
	r-value	p-value
Work skills	0.523*	0.038
Work attitudes	0.508*	0.041

Legend: * = significant ($p \leq 0.05$)

r-value = correlation value

p-value = probability value

It can be noticed from the table that significant relationship was found between the work motivation of junior high school learners and their academic achievement in TLE. This significant relationship is manifested by the computed probability values that ranged from 0.038 to 0.041 which are less than the 0.05 level of significance. Further emanation of the tabulated results reveals that moderate positive correlation existed between the aforementioned variables as implied by the computed r-values that ranged from 0.508 to 0.523. This suggests that as the level of the work motivation of junior high school learners' increases, the level of their academic achievement in TLE also increases.

This signifies that when learners are motivated to learn TLE, they are more likely to put in more effort, actively participate in class, and engage with the learning materials which will eventually lead to improved academic achievement.

The Relationship Between the Availability of Materials/Tools/Equipment and Learners' Academic Achievement in TLE

Table 14 presents the results of the correlation analysis which was performed to determine if significant relationship existed between the availability of materials/tools/equipment and learners' academic achievement in TLE.

Table 6.

Results of the Correlation Analysis on the Relationship between the Availability of Materials/Tools/Equipment and Learners' Academic Achievement in TLE

availability of materials/tools/equipment	learners' academic achievement in TLE	
	r-value	p-value
Cookery	0.590*	0.019
Agri-Crops Productions	0.584*	0.021
ICT	0.574*	0.023

Legend: ** = highly significant ($p \leq 0.01$) r-value = correlation value p-value = probability value

It can be gleaned from the table that significant relationship was found between the availability of materials/tools/equipment and learners' academic achievement in TLE. This significant relationship is implied by the computed probability values that ranged from 0.019 to 0.023 which are less than the 0.05 level of significance. Further observation of the tabulated results discloses that moderate positive correlation existed between the aforementioned variables as implied by the computed r-values that ranged from 0.574 to 0.590. This means that as the level of availability of materials/tools/equipment in TLE increases, the level of learners' academic achievement also increases.

This implies that having access to sufficient resources might help students gain a deeper comprehension of the material, develop their practical abilities, and eventually raise their academic performance. Additionally, students are more likely to be involved and driven to study when they may actively use tools and equipment.

Program of Activities Crafted from the Results of the Study

Teachers' classroom management and guiding skills and students' work skills had the lowest computed mean, despite the fact that their proficiency in teaching TLE and their work skills are the most verbally interpreted. Additionally, it was discovered that TLE is deficient in supplies, tools, and equipment. Hence, the researcher offers the program of activities which is presented in Table 7.

Table 7

Proposed Program of Activities

Objectives	Action	Timeline	Persons Involved	Expected Outcome
To further improve the TLE teachers' classroom management skills.	Provide clear expectations and routines, building positive relationships with learners and incorporating engaging teaching methods	1 st Quarter of S.Y. 2025-2026	Head Teacher, TLE teachers	Improved TLE teachers' relationship with students-rules (Do's and Don'ts)
To further improve the TLE teachers' guidance skills.	Focus on continuous learning, developing effective communication, and creating a supportive environment.	2 nd Quarter of S.Y. 2025-2026	Head Teacher, TLE teachers	Improved TLE teachers' listening, communicating and promoting independence with the students
To further improve the learners' work skills.	Provide activities that focus on communication, critical thinking use of tools and materials and problem-solving		Head Teacher, TLE teachers	Improved TLE teachers' listening to new ideas and giving simple instructions.
To provide more materials/tools/equipment	Through alumni, selling products done by learners in their		School Head, Head Teacher,	Improved income-generating

in TLE.	task/activities	TLE teachers	activities/projects
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FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of the major findings, the conclusions arrived at based on the findings, and the recommendations given in accordance with the conclusions.

Findings

This study determined the influence of selected determinants such as teacher competence, learners' work motivation and availability of materials and equipment on academic achievement in TLE of junior high school learners in secondary schools in Bustos, Bulacan during the School Year 2024–2025.

Using the procedures described in the preceding chapter, the answers to the problems raised in this study were ascertained and summarized as follows: Findings revealed that the TLE teachers are highly competent as to instructional skills, classroom management skills, guidance skills and personal and professional skills.

The junior high school learners are highly motivated as to their work in terms of work skills and work attitudes.

The materials/tools/equipment in TLE as to cookery was "adequate", in Agri-Crops Productions was "slightly adequate" and in ICT was "adequate."

The academic achievement of junior high school learners in TLE was described as "satisfactory."

Significant relationship was found between the teachers' competence and learners' academic achievement in TLE.

Likewise, significant relationship was found between the work motivation of junior high school learners and their academic achievement in TLE.

Similarly, significant relationship was found between the availability of materials/tools/equipment and learners' academic achievement in TLE.

Conclusion

Based on the findings of the study, this conclusion was drawn: the teacher competence, learners' work motivation and availability of materials and equipment are significant predictors of learners' academic performance in TLE.

Recommendations

In light of the findings and conclusions of the study, the following recommendations are hereby offered:

1. The school may implement the program of activities offered by the researcher.
2. It is recommended that future investigations examine additional components of Technology and Livelihood Education (TLE) beyond those addressed in this study, to further understand the various factors influencing learners' academic achievement.
3. Researchers are encouraged to explore various geographical locations and educational settings, while also broadening the scope of respondents to include a more diverse and representative sample, in order to gain deeper insights and enhance the generalizability of the findings.
4. It is also recommended that future studies investigate additional variables that may influence learners' academic performance in TLE, such as parental involvement, learning environment, and instructional resources.
5. For future researchers, a qualitative study could be conducted to validate the present findings.

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