



# SUFFICIENCY OF INSTRUCTIONAL RESOURCES AND PERFORMANCE OUTCOMES OF TECHNOLOGY AND LIVELIHOOD EDUCATION STUDENTS

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## ABSTRACT

*In the landscape of secondary education, Technology and Livelihood Education (TLE) stands as a critical component, offering students a pathway to develop skills essential for personal and collective growth, particularly in scenarios where access to higher education is limited. The study was conducted in the Division of Panabo City, involving 200 TLE teachers explored the relationship between instructional resource sufficiency and student performance outcomes. Findings revealed a moderate extent of sufficiency in instructional resources, with certain dimensions consistently evident while others showed occasional presence. Similarly, student performance outcomes were deemed satisfactory, though with variations across different dimensions. The study underscored a significant correlation between the sufficiency of instructional resources and student performance outcomes, highlighting the critical role of resource availability in shaping student achievement. Notably, all domains of instructional resources, including textbooks, laboratory equipment, technology, physical facilities, and human resources, demonstrated a significant influence on student performance. This emphasizes the importance of targeted interventions to improve resource sufficiency and ensure a conducive learning environment for students. Recommendations were put forth to address identified areas of moderate sufficiency, advocate for resource allocation, foster collaboration among stakeholders, and enhance teacher professional development.*

**KEYWORDS:** *Instructional resources; performance outcomes; Division of Panabo City*

## INTRODUCTION

Technology and Livelihood Education (TLE) plays a significant role within the secondary education development program curriculum, focusing on activities aimed at enhancing the personal and collective growth of learners. This subject equips high school students with the competencies necessary to engage in productive and income-generating pursuits, particularly if access to tertiary education is limited for various reasons. TLE essentially functions as a vocational education course, instilling a genuine appreciation for work and cultivating skills that enable individuals to contribute economically to their families, communities, and the nation (Tan, 2021).

Technology and Livelihood Education is a program designed to provide learners with a comprehensive set of competencies, encompassing knowledge, skills, work values, and essential life skills. These proficiencies span various fields such as Home Economics, Computer-Aided Design, Carpentry, Clothing Construction, Electricity and Electronics, Agriculture, Foods and Beverage, Handicrafts, Cosmetology, Home Nursing, Industrial Arts, Agri-Fishery Arts, and Information Communication Technology (ICT), as outlined in the K to 12 Toolkit. The effectiveness of TLE is contingent upon achieving mastery in knowledge and information, the proficient application of skills and processes, fostering a strong work ethic, and nurturing the development of crucial life skills (Ssemugenyi, 2023). TLE educators play a pivotal role in getting students ready for the job market by imparting industry-specific competencies and expertise. Nevertheless, ensuring that students genuinely excel in both knowledge and skills, all while delivering immersive hands-on learning opportunities, presents significant hurdles.



A key hindrance in this regard is the delivery of top-notch education, frequently impeded by insufficient learning resources, facilities, tools, and equipment that do not meet the requirements essential to assist students studying Technology and Livelihood Education subjects (Gregorio, 2016). Additional significant concerns encompass the development and execution of successful teaching methodologies, a persistent shortage of TLE instructors, and tight time constraints for task accomplishment.

Bawar (2019) underscored the importance of having sufficient instructional facilities, equipment, and materials to promote a more profound understanding of Technology and Livelihood Education for both students and teachers. The presence of these instructional resources significantly impacts student performance and is closely related to the attitudes, interests, and motivations of both students and teachers. Consequently, the inability to attain the necessary competencies often results from insufficient facilities, ultimately leading to compromised student performance.

Aligning the Technology and Livelihood Education curriculum with the increasing demand for skilled workers is essential for graduates to obtain certification and secure employment. Realistic and experiential learning, facilitated by appropriate tools, equipment, and machines for instruction, is crucial. Instructional resources, which are the tools used by teachers to educate their students, have a profound impact on student learning, as students learn best through practical application. Furthermore, having an adequate quantity of instructional materials in proportion to the number of students is important. Engaging in hands-on activities allows learners to understand how their learning experiences can be applied in real-life situations. These instructional materials serve as aids for teaching, enabling teachers to enhance the effectiveness and meaningfulness of their instructional strategies. This, in turn, makes it easier for students to grasp their lessons, acquire the necessary skills in their chosen field, and ultimately succeed. The sufficiency of instructional resources to support effective student learning is a significant requirement within the educational system (Albarico, et al., 2014).

Education is not solely about the transmission of knowledge but also about the environment and tools that enable effective learning. In the evolving landscape of education, where the integration of technology and livelihood education plays a crucial role, the availability and sufficiency of instructional resources are paramount.

Like many school divisions, the Division of Panabo City faces the challenge of nurturing a skilled and knowledgeable workforce equipped to adapt to an ever-changing technological and vocational landscape. Within this context, Technology and Livelihood Education subjects are pivotal, as they bridge the gap between theoretical knowledge and practical skills. These subjects are designed to prepare students for both future careers and higher education.

However, the successful implementation of Technology and Livelihood Education subjects is contingent upon the availability of instructional resources, including textbooks, laboratory equipment, technology, physical facilities, and qualified teachers. Inadequate or outdated resources may hinder students' learning experiences and, ultimately, their academic performance.

With a diverse student population and a range of socio-economic backgrounds, it reflects the complex dynamics of contemporary education in a rapidly changing world. The Division of Panabo City is home to several educational institutions, each facing varying degrees of resource constraints. As such, this provides a compelling case study for investigating the relationship between instructional resources and student performance.

This study recognizes that the Division of Panabo City faces unique challenges in terms of resource allocation and availability. Thus, this study aims to shed light on how the sufficiency, quality, and utilization of instructional resources by TLE teachers impact student achievement. By addressing these issues, this study aspires to contribute valuable insights that can inform educational policies, resource allocation strategies, and instructional practices, ultimately benefitting both the students and the community as a whole.

## METHODOLOGY

### Research Design

This study employed a quantitative research approach utilizing the descriptive correlational approach. Quantitative research is a way to learn about a particular group of people, known as a sample population. Using scientific inquiry, quantitative research relies on data that are observed or measured to examine questions about the sample population.



It is used by social scientists, including communication researchers, to observe phenomena or occurrences affecting individuals. The purpose of quantitative research is to generate knowledge and create an understanding of the social world (Allen, 2017). Moreover, a descriptive correlation study is a study in which the researcher is primarily interested in describing the relationships between variables without attempting to establish a causal relationship (Noah, 2021).

Meanwhile, in descriptive research, the researcher does not manipulate the variables in the study. It simply intends to describe the nature of the involved variables (Fox, 2007; Korrapati, 2016). On the other hand, correlational research design explores and measures the relationship between the variables of the study with no attempt to manipulate them. Also, correlation investigates the strength and direction of the variables. This can be a positive direction or a negative direction, and a strong and a weak relationship.

This research journey was considered quantitative since it depended on the numerical data when analyzing and interpreting the data. It was descriptive since its purpose was to determine the extent of utilization of instructional resources and performance outcomes. In addition, the academic pursuit was correlational since its purpose was to measure the connection between the sufficiency of instructional resources and performance outcomes of TLE students in Panabo City Division.

### **Respondents and Sampling**

The subject respondents of the study were 200 teachers teaching Technology and Livelihood Education subjects from Panabo City Division, Davao del Norte. Memon et al. (2020) claimed that 200 samples were enough when testing the Pearson Correlation analysis. Hence, the 200 respondents were enough to address the purpose of this study.

Sampling is a way to take a sampling that fits into the overall object of research. The sampling technique in this research was simple random sampling. According to Gay (2012), random sampling is the process of selecting a sample in such a way that all individuals in the defined population have an equal and independent chance of being selected for the sample. Simple random sampling intends to choose individuals to be sampled who are representative of the population. So, the researcher used simple random sampling to choose the sample which means that every teacher are potential to be chosen as a sample.

In the inclusion and exclusion criteria, all teachers of Panabo City Division were given an equal chance to be part of the study. According to Cresswell (2012, p.143), any individual has the same probability of being a participant. Respondents who felt awkward and uncomfortable answering the survey questionnaire were free to withdraw from participating. They were not forced to be part of the study. Their decision to withdraw was duly respected. The respondents' welfare was given utmost importance in the conduct of this study.

### **Research Instruments**

For data collection, this study utilized an adapted survey questionnaire. The questionnaire that was employed in this undertaking was divided into two sets. The first set focused on the extent of utilization of instructional resources. The second set focused on the average grades of the students in the first semester of the school year 2023-2024 to measure performance outcomes.

**Instructional Resources.** The sufficiency of instructional resources questionnaire was adapted from Albarico et al (2014). The instrument consisted of 17 items. It had five indicators, namely, textbooks and educational materials (1-4), laboratory equipment and facilities (1-4), technological resources (1-3), physical resources (1-3), and human resources (1-3). The questionnaire was subjected to pilot testing having a result of .74 suggesting that the items have relatively high internal consistency.

**Performance Outcomes.** This was based on DepEd Order No. 8 series of 2015. This is the Policy guidelines on Classroom Assessment for the K-12 Basic Education Program, which was used to determine the performance outcomes of students in TLE subjects in the first semester of the school year 2023-2024.

The instruments in this study were contextualized to achieve the purpose of this study. The researcher integrated all the comments and suggestions of the adviser, panel members and expert validators for the refinement of the tools and to achieve construct validity.



### Data Analysis

For more comprehensive interpretation and analysis of the data, the following statistical tools were utilized.

*Weighted Mean.* This was used to measure the extent of instructional resources, including textbooks and educational materials, laboratory equipment and facilities, technological resources, physical resources, and human resources, in their instructional practices.

*Frequency Distribution.* This was used to measure the extent of performance outcomes of the students based on the average grades in TLE Subjects.

*Pearson Product Moment Correlation.* This was utilized to determine the relationship between the sufficiency of instructional resources employed by TLE teachers and the student's performance in TLE subjects.

*Regression Analysis.* This was used to determine the significant influence of instructional resources employed by TLE teachers on the performance outcomes of students.

## RESULTS AND DISCUSSION

Presented in this chapter are the findings based on the results of data gathered, the conclusions drawn from the findings and the recommendations for consideration.

### Findings

The main focus of the study was to determine the significance of the relationship between the sufficiency of instructional resources and performance outcomes of students. The study was conducted in the selected teachers teaching Technology and Livelihood subjects from the Division of Panabo City. There were two hundred (200) teachers who participated in this study. Descriptive correlational method of research was used in utilizing adopted research instruments. The said instruments were validated by the panel of experts and subjected to pilot testing before it was made ready for administration. Frequency Distribution, Pearson Product Moment Correlation, and Regression Analysis were statistical tools used in analyzing the data. The hypotheses in this study was tested at 0.05 level of significance.

The major findings of the study were the following: the extent of the sufficiency of instructional resources is moderately extensive. Meanwhile, the extent of learners' academic motivation is satisfactory. It was found out that there is a significant relationship between the sufficiency of instructional resources and performance outcomes of students. The hypotheses of no significant relationship between sufficiency of instructional resources and performance outcomes of students and none of the domains of sufficiency of instructional resources and performance outcomes of students were rejected.

### Conclusions

Based on the findings of this study, it is evident that the sufficiency of instructional resources significantly influences student performance outcomes in Technology and Livelihood Education (TLE). The moderate extent of sufficiency across various dimensions of instructional resources, including laboratory equipment, technological resources, physical resources, and human resources, underscores the occasional presence of these resources in TLE classrooms (Bawar, 2019). However, the consistent availability of textbooks and educational materials highlights a positive aspect of the resource landscape in TLE (Tan, 2021).

Moreover, the satisfactory nature of student performance outcomes suggests room for improvement, with certain dimensions occasionally evident and others oftentimes evident (Gregorio, 2016). The correlation between the sufficiency of instructional resources and student performance outcomes underscores the interdependence of these variables, emphasizing the need for collaborative efforts to strengthen the existing status of instructional resource sufficiency and enhance student achievement in TLE (Hafeez et al., 2020; Campbell et al., 2020).

Drawing on theoretical frameworks such as David Kolb's Experiential Learning Theory and the constructivist learning theories of Jean Piaget and Lev Semionovich Vygotsky, it is apparent that instructional resources play a pivotal role in shaping the learning process and facilitating student engagement and understanding (Kolb & Kolb, 2005; Driscoll,



2000). These theories provide a lens through which to interpret the findings of this study and underscore the importance of investing in resources that support experiential learning and active engagement in TLE classrooms.

The correlation between instructional resource sufficiency and student performance outcomes highlights the critical role of resources in shaping the educational experience and academic achievement in TLE. By addressing gaps in resource availability and utilization, educators can create a more conducive learning environment that fosters deep learning and enhances student success (Fayolle et al., 2012). This study contributes to our understanding of the relationship between instructional resources and student outcomes and underscores the importance of continued efforts to improve resource provision and utilization in TLE.

### Recommendations

The following suggestions were offered based on the conclusions of the study:

Higher officials in the Department of Education, it is imperative to allocate sufficient budgetary resources to address areas of moderate sufficiency identified, such as laboratory equipment, technological resources, physical resources, and human resources. Policies and initiatives should be established to improve the availability and quality of textbooks and educational materials, recognizing their significant influence on student performance. Furthermore, professional development opportunities should be provided for teachers to enhance their instructional strategies and utilization of available resources.

School principals should conduct regular assessments of resource sufficiency and effectiveness within their schools, advocating for additional resources where necessary. They should foster a collaborative school culture where teachers share best practices in resource utilization and student support strategies.

Teachers should actively engage in professional development activities to enhance their pedagogical skills and familiarity with available instructional resources. Collaboration among colleagues to share teaching strategies and resources is essential, along with advocating for resource allocation to support effective teaching and learning.

Future researchers, conducting further studies to explore specific factors influencing resource sufficiency and effectiveness, as well as investigating innovative approaches to resource allocation and utilization, is recommended. Longitudinal studies tracking the long-term impact of resource sufficiency on student performance will provide insights into sustainable strategies for educational improvement.

Collaboration among stakeholders, targeted resource allocation, and ongoing professional development are crucial for improving instructional resource sufficiency and enhancing student performance outcomes in TLE. These recommendations aim to address existing gaps and ensure a conducive learning environment for students to thrive in Technology and Livelihood Education.

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