

# SCHOOL FACILITIES AND PUPILS' LEARNING OUTCOMES IN THE CONGRESSIONAL DISTRICT II OF THE PROVINCE OF COTABATO

Joy E. Tacadao<sup>1</sup>, Husna T. Lumapenet<sup>2</sup>

<sup>1</sup> Teacher I, Department of Education, Ganatan Elementary School, Arakan, Cotabato, Philippines

<sup>2</sup> Associate Professor, Cotabato Foundation College of Science and Technology, Droluman, Arakan, Cotabato, Philippines

## ABSTRACT

*The study mainly dealt to the extent of school facilities and pupils' learning outcomes in the Congressional District of the Province of Cotabato for the school year 2023-2024. It specifically determined the the extent of school facilities and level of pupils' learning outcomes. Further, it determined the significant relationship between school facilities and pupils' learning outcomes and the influence of school facilities on the pupils' learning outcomes. More so, the challenges encountered that affect learning outcomes via school facilities; and the intervention program can be recommended to address the challenges. This research utilized descriptive-correlation research design to analyze the gathered data from the 126 teachers taken teachers taken through simple random sampling technique. Self-made questionnaire used was utilized. Results of the validity and reliability test using Cronbach's Alpha had 0.950 on school facilities and 0.960 on pupils' learning outcomes, which meant that the instrument was highly reliable. Data gathering procedure using communication addressed to schools' division superintendent, and the statistical tools utilized mean. While in determining the relationship of the study, Spearman rho was used, and the significant influence employed by multiple linear regression. Teachers were oftentimes extent on library, sports facilities, electricity and water supply and they were sometimes extent on science laboratory, computer laboratory. Pupils' learning outcomes were improved on the extent of school facilities. It meant that high-quality school facilities enhanced pupils' learning outcomes. School facilities and pupils' learning outcomes were significantly related. It meant that high-quality school facilities positively impact pupils' learning outcomes. School facilities were highly influenced on pupils' learning outcomes. It meant that the impact of school facilities on pupils' learning outcomes is essential for nurturing academic success and creating conducive environments where students can thrive academically and personally. It is concluded in the study, that the teacher' motivational strategies contribute to the pupils' learning outcomes.*

**Keyword:** - School facilities, and pupils' learning outcomes.

## 1. INTRODUCTION

Pupils' learning outcomes can be hindered by various challenges. Insufficient access to resources like textbooks and technology, along with inadequate teaching methods, can impede understanding and engagement. Large class sizes limit personalized attention, and health issues and, lack of parental involvement also impact learning. High-stakes testing pressure, language barriers, and technology-related difficulties further add to the complexity.

Ariyo (2013) said that a well-equipped school facility plays a crucial role in addressing problems that impact pupils' learning outcomes. Adequate resources such as libraries, computer labs, and the internet, ensure that all students have equal learning opportunities. Baron (2018) also shared that comfortable classrooms and conducive learning spaces enhance engagement and focus, while smaller class sizes enable teachers to provide individualized attention. Inclusive facilities that cater to pupils' diverse needs, including those with disabilities, promote a sense of

belonging and equal participation. Up-to-date technology and interactive tools support innovative teaching methods that cater to different learning styles.

The research gap regarding school facilities and their impact on pupils' learning outcomes is a significant area of concern. While there is ample evidence suggesting the importance of well-designed and equipped facilities, there remains a need for more comprehensive studies that directly link specific facility improvements to measurable academic improvements (Cotton, 2013). Data Research exploring the nuanced effects of factors like classroom layout, lighting, acoustics, and technological integration on pupil engagement and performance is limited. Additionally, the interaction between school facilities and other variables, such as teaching methods, curriculum relevance, and pupil well-being, requires further exploration (Hunter, 2016). Bridging this research gap would provide valuable insights for educators and policymakers to make informed decisions that optimize learning environments and enhance pupils' educational achievements (Okeke, 2019).

Further, the gap in addressing these problems demands a holistic approach that involves educators, policymakers, and communities working together to create an inclusive and supportive learning environment (Broode, 2013). By investing in a well-equipped school facility, educational institutions can create an environment that fosters effective learning and positively impacts pupils' academic achievements (Bimler, 2019).

Thus, this study is vital to conduct at Arakan Districts to find out how school facilities contribute to the pupils' learning outcomes in different schools.

## 2. METHODOLOGY

The conduct of this research used mixed method designs. Routledge (2013) described the use of both method as mixed method to imply that the phenomenon being studied can best be understood quantitatively and qualitatively. This design is appropriate for this study because there are research questions which be answered through quantitative methods and there are also those which can be best answered using qualitative method (Pelham et al., 2015).

The quantitative design particularly used descriptive correlation. Descriptively, data such as school facilities and pupils' learning outcomes were presented in this study (Carag, 2020). Meanwhile, correlation was used since the relationship of these variables were figured out. In this study, the relationship between school facilities and pupils' learning outcomes were presented using the said design (Calmorin & Calmorin, 20015).

Furthermore, the qualitative method was used to gather data related to the challenges encountered that affect learning outcomes via school facilities and the intervention program to address the challenges encountered. The qualitative data were analyzed using the thematic analysis and the results were integrated with the quantitative analysis (Fushs & Woessmann, 2014). The researcher conducted the study in the three (3) Municipalities of Antipas, Arakan, and Pres. Roxas.

Equal sampling allocation employed to determine the sample size per municipality, after which, the names of the schools were written in pieces of paper and placed in a jar. The researcher drew the number of lots according to the sample size to determine the schools to be included in the study. In simple random sampling, a sample size is selected from population such that each member of the population has an equal size and independent chance of being drawn and included in the sample (Garambas, 2011).

Meanwhile, on the qualitative aspect, a total of ten (10) participants from master teachers were invited for an in-depth interview which were chosen using the purposive sampling specifically the criterion based. The following criteria were used in the selection: Grade 6 Master Teachers; has at least three (3) years of teaching experience; and has willingness to participate in the study.

The results of the focused group discussion were used to identify the emerging themes and patterns or responses as based on their shared experiences. This technique aims to achieve a homogeneous sample whose units share the same characteristics or traits (Cresswell, 2003).

The researcher used a self-made questionnaire on the school facilities and pupils' learning outcomes based on readings and literature. The questionnaire was subjected to a validity and reliability test. Further, an Interview Guide Questionnaire was crafted by the researcher that outlined issues and challenges encountered by teachers that affect learning outcomes via school facilities. The questionnaire which was composed of open-ended questions were guided the researcher in understanding and exploring the subjects' opinions, behavior, experiences, and phenomenon.

The transcribed data were analyzed thematically. Thematic analysis undergoes the steps based on what Braun and Clarke (2006) suggest and these are: first, becoming familiar with the data which means, the analyst reads and rereads the transcript; then generating initial codes; searching for themes from the coded data reviewing the

themes since they are overlapping themes which could be fused into one; then defining the themes and developing subthemes when necessary; then last step is writing up the findings.

Considering the nature of this study which is descriptive a quantitative approach used in the analysis of the data (Patton, 2014). The data tallied through a coding sheet will be processed, analyzed, and interpreted using statistical tools like mean, Spearman Rho, and Linear Regression with the assistance of the statistician.

The researcher will use *mean and weighted mean* (Garambas, 2011) in describing the school facilities and pupils' learning outcomes. She will also employ *Spearman Rho* (Garambas, 2011) to determine the significant relationship between the school facilities and pupils' learning outcomes. Moreover, the researcher will utilize *Multiple Linear Regression Analysis* (Garambas, 2011) to determine the significant influence of the independent to the dependent variables of the study. On the other hand, for the phenomenology–qualitative method, the recorded data in the focused group discussion will be transcribed and analyzed by theme to come up with core ideas in relation to the challenges encountered by teachers that affects learning outcomes via school facilities and the intervention program to address these challenges.

### 3. RESULTS AND DISCUSSION

#### Relationship Between School Facilities and Pupils' Learning Outcomes

##### Library and Pupils' Learning Outcomes

Table 1 presents the relationship between the library facility and pupils' learning outcomes. The correlation matrix shows that the library facility has a significant relationship with all the parameters used to measure the pupils' learning outcomes in terms of knowledge and understanding ( $r=0.40^{**}$  with a p-value of 0.00); critical and problem-solving ( $r=0.27^{**}$  with a p-value of 0.00); communication skills ( $r=0.25^{**}$  with a p-value of 0.00); numerical literacy ( $r=0.50^{**}$  with a p-value of 0.00); and information literacy ( $r=0.30^{**}$  with a p-value of 0.00);

The result means that the library facility is highly significant to pupils' learning outcomes. The presented probability values which are less than the set 1% level of significance means that the stated hypothesis is rejected.

This implies that there is a strong correlation between the presence and quality of library facilities and the academic success of students. It further implies that when schools have well-equipped libraries with a variety of resources, it positively associates the learning outcomes of pupils. Essentially, it means that investing and prioritizing library facilities can lead to better educational outcomes for students.

Dare (2013) found a strong correlation between well-funded school library programs and higher standardized test scores, indicating that school libraries contribute to academic achievement.

##### Science Laboratory and Pupils' Learning Outcomes

On science laboratory, Table 1 presents the relationship between the science laboratory and pupils' learning outcomes. The correlation matrix shows that the science laboratory has a significant relationship with the parameters used to measure the pupils' learning outcomes in terms of knowledge and understanding ( $r=0.34^{**}$  with a p-value of 0.00); critical and problem-solving ( $r=0.34^{**}$  with a p-value of 0.00); numerical literacy ( $r=0.29^{**}$  with a p-value of 0.00). No correlation found on communication skills and informational literacy.

The result means that the science laboratory is highly significant to pupils' learning outcomes. The presented probability values which are less than the set 1% level of significance means that the stated hypothesis is rejected.

Based on the findings, the results imply that having access to a science laboratory is crucial for students' academic success. It means that when students have the opportunity to engage in hands-on experiments and practical demonstrations in a well-equipped science lab, it significantly enhances their learning outcomes. Practical experiences in a laboratory setting can deepen students' understanding of scientific concepts, improve their critical thinking skills, and foster a greater interest in science subjects.

UNESCO (2014) found a positive correlation between the availability of science laboratory facilities and students' academic achievement in science subjects. Adequate laboratory resources facilitate practical learning, leading to improved exam scores and overall performance.

##### Computer Laboratory and Pupils' Learning Outcomes

On computer laboratory, Table 1 presents the relationship between the computer laboratory and pupils' learning outcomes. The correlation matrix shows that the computer laboratory has a significant relationship with all the parameters used to measure the pupils' learning outcomes in terms of knowledge and understanding ( $r=0.30^{**}$  with a p-value of 0.00); critical and problem-solving ( $r=0.38^{**}$  with a p-value of 0.00); numerical literacy ( $r=0.33^{**}$  with a p-value of 0.00). No correlation found on communication skills and informational literacy.

The result means that the computer laboratory is highly significant to pupils' learning outcomes. The presented probability values which are less than the set 1% level of significance means that the stated hypothesis is rejected.

This implies that access to a computer laboratory is essential for students' academic success. It means that when students have the opportunity to utilize computers and related technology in a dedicated laboratory setting, it significantly enhances their learning outcomes. Further, it implies that having a well-equipped computer laboratory positively impacts students' educational achievements, preparing them for future academic and professional endeavors.

Terzian (2018) shared the relationship between a well-equipped computer laboratory and pupils' learning outcomes is undeniably significant. Such laboratories provide students with hands-on experience and exposure to essential digital tools and technologies, fostering a deeper understanding of subjects ranging from basic computer literacy to advanced programming concepts.

### **Sports Facilities and Pupils' Learning Outcomes**

On sports facility, Table 1 presents the relationship between the sports facility and pupils' learning outcomes. The correlation matrix shows that the sports facility has a significant relationship with all the parameters used to measure the pupils' learning outcomes in terms of knowledge and understanding ( $r=0.45^{**}$  with a p-value of 0.00); critical and problem-solving ( $r=0.41^{**}$  with a p-value of 0.00); communication skills ( $r=0.43^{**}$  with a p-value of 0.00); numerical literacy ( $r=0.32^{**}$  with a p-value of 0.00); and information literacy ( $r=0.32^{**}$  with a p-value of 0.00);

The result means that sports facility is highly significant to pupils' learning outcomes. The presented probability values which are less than the set 1% level of significance means that the stated hypothesis is rejected.

It implies that access to sports facilities is important for students' overall academic success. It implies further that when students have opportunities for physical activity and sports participation, it positively impacts their learning outcomes. It means that access to sports facilities not only promotes physical fitness but also contributes to students' holistic development, which can ultimately positively influence their academic performance and overall educational experience.

Lewis, et al. (2019) sports facilities have a profound and positive impact on pupils' learning outcomes. They promote physical health, cognitive development, life skills, and emotional well-being. By providing access to sports facilities and encouraging their use, schools can contribute to a more well-rounded and holistic educational experience, ultimately leading to improved academic performance and personal growth among pupils.

### **Electricity and Water Supply and Pupils' Learning Outcomes**

On sports facility, Table 1 presents the relationship between the sports facility and pupils' learning outcomes. The correlation matrix shows that the sport facility has a significant relationship with the parameters used to measure the pupils' learning outcomes in terms of knowledge and understanding ( $r=0.19^{**}$  with a p-value of 0.03); critical and problem-solving ( $r=0.29^{**}$  with a p-value of 0.00); numerical literacy ( $r=0.32^{**}$  with a p-value of 0.00); and information literacy ( $r=0.18^*$  with a p-value of 0.04). no correlation found on communication skills.

The result means that sport facility is highly significant to pupils' learning outcomes. The presented probability values which are less than the set 1% level of significance means that the stated hypothesis is rejected.

This implies that reliable access to electricity and water supply is crucial for students' academic success. It further implies that when schools have uninterrupted access to electricity and water, it positively impacts students' learning outcomes. Electricity is essential for powering classrooms, lighting, electronic devices, and educational resources such as computers and projectors. Without electricity, students may face limitations in accessing digital learning materials, participating in interactive lessons, or utilizing technology for research and projects. Similarly, access to clean water is fundamental for maintaining hygiene standards in schools. It ensures that students have safe drinking water and facilitates proper sanitation practices, which are essential for their health and well-being. It means that reliable electricity and water supply contribute to creating conducive learning environments that support students' educational achievements and overall academic success.

Seymour (2014) said that access to electricity and a reliable water supply significantly enhances pupils' learning outcomes. These utilities environment, and support pupils' health and well-being.

As, it is verbalized by an informant in answering to the researcher's question on the challenges encountered that affect learning outcomes via school facilities as follows:

One Key Informant said that they observed:

*...resource constraints, the readiness of teachers as facilitators. Acceptance/readiness of pupils towards the learning process. Conducive learning environment. Inadequate school facilities. KII1MQ8*

Further stated the Key Informant, said:

*...lack of school facilities, lack of school facilities hurts the academic performance of pupils. Examples: Lack of classrooms, learning materials, and libraries hinders pupils' learning experiences and contributes to lower academic performance. KII1PQ8.1*

Moreover, the Key Informant stated:

*...lack of school library, unable to access information due to lack of school library learners some of them have no assignments/ performance tasks and other research work since their access is also limited at home. KII2PQ8.1*

And, more they stated:

*...there are several challenges encountered that can affect learning outcomes via school facilities. Inadequate resources most schools especially in underserved areas, lack the necessary resources to maintain and improve their facilities. Safety and security concerns schools that lack proper security measures and safety protocols can create an environment that is not conducive to learning. KII3PQ8.1.*

This is supported by key informants, who have articulated:

*...the challenge that pupils face is the lack of resource material ls. In some subject which hinder them from learning more and hands-on due to these they obey/ rely to what the teacher provides because there are no available books for some of the subjects. KII4PQ8.1*

**Table 1.** Correlation matrix Showing the relationship between school facilities and pupils' learning outcomes

School Facilities		Knowledge & Understanding	Critical & Problem Solving	Communication Skills	Numerical Literacy	Information Literacy
<b>Library</b>	Pearson r	0.40**	0.27**	0.25**	0.50**	0.30**
	Probability	0.00	0.00	0.00	0.00	0.00
	N	126	126	126	126	126
<b>Science Laboratory</b>	Pearson r	0.34**	0.34**	0.15 <sup>ns</sup>	0.29**	0.15 <sup>ns</sup>
	Probability	0.00	0.00	0.10	0.00	0.10
	N	126	126	126	126	126
<b>Computer Laboratory</b>	Pearson r	0.30**	0.38**	0.15 <sup>ns</sup>	0.33**	0.15 <sup>ns</sup>
	Probability	0.00	0.00	0.09	0.00	0.09
	N	126	126	126	126	126
<b>Sports</b>	Pearson r	0.45**	0.41**	0.43**	0.32**	0.32**

<b>Facilities</b>	Probability	0.00	0.00	0.00	0.00	0.00
	N	126	126	126	126	126
<b>Electricity &amp; Water Supply</b>	Pearson r	0.19*	0.29**	0.16 <sup>ns</sup>	0.32**	0.18*
	Probability	0.03	0.00	0.07	0.00	0.04
	N	126	126	126	126	126

\*\* = highly significant

\* = significant

ns = not significant

#### 4. CONCLUSIONS

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

That, teachers were oftentimes extent on library, sports facilities, electricity and water supply and they were sometimes extent on science laboratory, computer laboratory.

Also, pupils' learning outcomes were improved on the extent of school facilities. It meant that high-quality school facilities enhanced pupils' learning outcomes.

Further, school facilities and pupils' learning outcomes were significantly related. It meant that high-quality school facilities positively impact pupils' learning outcomes.

More so, School facilities were highly influenced on pupils' learning outcomes. It meant that the impact of school facilities on pupils' learning outcomes is essential for nurturing academic success and creating conducive environments where students can thrive academically and personally.

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