Determining the Relationship of Use of Technology-Enabled Learning and Perceived Academic Performance Among College students in St. Mary's College of Bansalan, Inc.

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***Abstract*: Technology plays an essential role in many aspects of society, notably in our educational system. It allows for a variety of platforms to be used in accomplishing a student's educational goals. Students' comprehension of content and development of abilities in areas like analytical reasoning, downside resolution, data analysis, and artistic thinking can all be improved by increasing the use of technology. The principal objective of this correlational research study was to measure the significant correlation between use of technology-enabled learning and academic performance among college students in St. Mary's College of Bansalan, Inc. (SMCBI). In order to explain the relationships between technology and learning, the researchers in this study used a correlational research approach. Using 100 students from the second semester of the school year 2021-2022 and their departments. There are five departments: BSIT, BSBA, BSHM, BEED, and BSED. The survey results showed that the use of technology-enabled learning is very high and that the perceived academic performance is high. Furthermore, the positive correlations between Use of Technology-Enabled Learning and Perceived Academic Performance shows that there is a significant relationship between the Usage of Technology-Enabled Learning and Perceived Academic Performance, which means that Usage of Technology-Enabled Learning increasesPerceived Academic Performance also increases.**

***Keywords*: Correlational Research, Technology-Enabled Learning, Academic Performance, Educational System, Bansalan Davao del Sur**

I. INTRODUCTION

A. Background of the Study

Technology plays an important role in numerous society spaces, particularly in our education system. It permits different platforms for achieving the coed's educational achievements in their schooling. Increasing technology implementation can increase students' comprehension of content and development of skills in analytical reasoning, downside resolution, data analysis, and artistic thinking. Students will have the benefit of technology since it makes learning additional pleasant and cooperative. instead of memorizing facts, students learn through action and important thinking. This may well be as basic as collaborating in a tech-enabled discussion or finishing an interactive quiz at school. The web is that the most essential element that promotes the utilization of technology within the instructional. E-learning has become one in every of the fastest-moving trends in education and poses a promising various to ancient learning [1]. The personal computer and technology, if used properly, has the power to "invoke dream within the minds of visionary educators World Health Organization saw endless potential for neutering ancient notions of teaching and learning" [2].

Technology Enhanced Learning (TEL) has the potential to reinforce the coed expertise by facilitating self-paced learning, lowering inhibition thresholds for asking queries, and permitting access to learning on an as-and-when basis [3], all of that are factors which will contribute to informal and incidental learning outside of the formal learning space [4]. There's proof of accelerating amounts of on-line learning delivery [5] reshaping education through Web-based content delivery and interaction

The purpose of this research, titled "Determining the Relationship of Use of Technology-enabled Learning and perceive Academic Performance among College Students in St. Mary's College of Bansalan, Inc.," is to find out what the benefits and drawbacks of blended learning are for college students. Also, to understand the role of technology in the education of students. Furthermore, this research aims to determine the relationship between use of technology-enabled learning and perceived academic performance among college students in St. Mary's College of Bansalan, Inc.

B. Theoretical Framework

In 2000, Garrison, Anderson and Archer published a theoretical framework developed to structure the learning method in a web or integrated setting. The idea that they developed is that the "Theories Supporting integrated Learning" is the idea that we tend to utilize in this research. This theory was written to present basis towards the use of enabled-learning and academic achievement among SCMBI's college students. As most people around the world have done

the bulk of our learning personally and in school rooms, we sometimes consult with the mixture of in-person and on-line teaching as a special learning style known as "blended." Someday, however, we tend to expect this type can become the standard, and that we can drop the term "blended learning" altogether.

Blended learning "is a part of the continuing convergence of 2 archetypical learning environments" [8]. However, the influences of the two kinds of delivery don't seem to be equal, to blend looks completely different if you're ranging from an in-person college to how it's if you're coming back from a distance education background.

Traditional face-to-face, in-person, classroom-based teaching and learning has been used for hundreds of years because the present delivery technique. Distance and distributed teaching and learning opportunities are abundant, particularly in technology-enabled learning. once on-line education became offered, it had been used first in distance education, with students learning on-line. Notions of blending classroom-based learning and on-line or distance education came later.

Only over the previous decades has technology for learning been readily offered. It emerged so quickly that use of those technologies was enforced we tend toll before we had substantial knowledge of its impact. Therefore the variations it created for academics and students. Now, with additional proof, improved theories and models, and additional clarity concerning how to use each in-person and on-line teaching and learning, blend the two the 2 delivery modes with careful attention to each.

C. Conceptual Framework

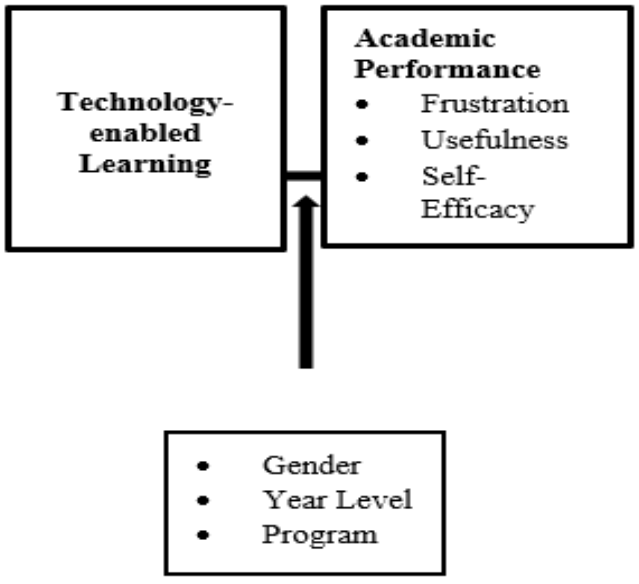

Figure 1. Conceptual Framework of the study

The study's major variables and their associated indicators are highlighted in the conceptual framework above. Their independent variable was Technology-Enabled Learning. Academic Performance, on the other hand, is the dependent variable, with four indicators: Frustration, Usefulness, Self-Efficacy, and Technical-Efficacy. The Demographic Profile is a moderating variable with three indicators: Gender, Course, and Program. This moderating variable's purpose is to aid in the interpretation of the relationship of the use of Technology-Enabled Learning and Academic Performance.

D. Research Questions

This study intends to determine the relationship between use of technology-enabled learning and academic achievement among College Students in St. Mary's College of Bansalan Inc. This research aims to answer the following questions in particular:

RQ1. What is the profile of the respondents?

1.1 Gender
1.2 Year Level
1.3 Program

RQ2. What is the level of technology enabled-learning among college students in St. Mary's College of Bansalan, Inc?

RQ3. What is the level of Perceived Academic Performance among college students of St. Mary's College of Bansalan, Inc in terms of:

3.1 Frustration
3.2 Usefulness
3.3 Self- Efficacy
3.4 Technical- Efficacy

RQ4. Is there a significant difference in the level of technology enabled learning when grouped according to:

4.1 Gender
4.2 Year Level
4.3 Program

RQ5. Is there a significant difference in the level of academic performance when grouped to:

5.1 Gender
5.2 Year Level
5.3 Program

RQ6. Is there a significant relationship of use of technology-enabled learning and perceived academic performance among college Students in St. Mary's College of Bansalan Inc?

Null Hypothesis

Ho1: There is no significant difference in the use of Technology-enabled learning among college students in St. Mary's College of Bansalan, Inc. when grouped according to gender, year level, and program,

Ho2: There is no significant difference in the level of

academic performance among college students in St. Mary's College Bansalan, Inc. when grouped according to gender, year level, and program.

Ho3: There is no significant relationship of use of technology-enabled learning and academic performance in St. Mary's College of Bansalan, Inc.?

II. METHODOLOGY

A. Research Design

The researchers of this study use correlational research design to explain the associations between technology and learning.

Employing correlational research design undertakes the role of making connections out of predetermined instances and circumstances under and stated in the scope of the study. It is known that correlation does not imply causation therefore, determining the pointers and research questions as detailed above undergoes a rigid process of structurization according to this design.

In the core of this design is the undertaking of determining variables and then testing the hypotheses without influencing the results through manipulation and biased execution.

This research method is most suitable to this study of determining the relationship between technology-enabled learning and perceived academic performance in SMCBI by putting into considerations the sample population's scholastic performance and their immersion in technologically influenced learning.

B. Research Locale

The research was carried out at St. Mary's College of Bansalan, Inc. Dhalia St., Poblacion Uno, Bansalan Philippines. This is where the study's participants are currently enrolled, as well as the researchers who conduct the research.

C. Participants of the Study

The students currently enrolled at St. Mary's College of Bansalan, Inc. are the study's respondents. Using 100 students enrolled in the second term of the school year 2021-2022 and their departments in particular. There are five departments: BSIT, BSBA, BSHM, BEED, and BSED, with only 20 students selected, 10 for females and 10 for males.

D. Sampling Techniques

The researchers chose 100 respondents using the quota sampling technique, with 20 students per department. Non-probability sampling includes the quota sampling technique defined as a non-random technique of choosing respondents. In this case, the sample population are determined to be students of a singular institution making the teaching methods, instructional advantages, and other influencers that may affect the study common among the sample population save for their individual performance and utilization of said commonality.

The researchers used this sampling technique to generate 20 respondents as a quota in each for each of the five departments constituting the general population of St. Mary's College of Bansalan, Inc.

E. Statistical Treatments

Using the Pearson correlation technique as the statistical tool in this study, the responses from the questionnaire will be tallied and tabulated. The statistician is enlisted to assist the researcher in analyzing and interpreting the results using the appropriate statistical tool.

1. Pearson r correlation- is a statistical measure of the strength of a linear relationship between paired data.

2. T-test - It determines whether the means of two groups (or conditions) differ statistically from one another. They are fairly powerful tests that are used on parametric and normally distributed data.

3. ANOVA – is a statistical test for detecting differences in group means when there is one parametric dependent variable and one or more independent variables.

4. Descriptive Statistics – used to describe the relationship between variables in a sample or population in order to summarize data in an organized manner.

F. Data Collection Procedures

The researcher's material or instrument used in gathering information is via google form. When collecting data from the selected students of SMCBI, the researchers asked first the respondents if they are willing to answer the questionnaire with their willingness or approval. Google Forms is a free online platform that may be used in the classroom to improve student participation, interaction, and evaluation. It's also user-friendly, simple to operate, and saves instructors time and paper when grading assignments, in conducting surveys via google form it will be conducted through a systematic process.

G. Research Instrument

The Technology-enabled Learning questionnaire was adapted from Adrian Kirkwood and Linda Price [9]. Which has been altered to fit the study and will be subjected to expert validation. The primary goal of this survey is to evaluate the Technology-Enabled Learning environment and policies, learners' access to media and technology, and their nature of use and preferences for adopting technologies for learning in an educational setting.

Meanwhile, the Academic Performance Questionnaire [10] was adapted from Cindi Khanlarian and Rahul Sigh. It was altered to fit the study's requirements and will be subjected to expert approval. The following indicators are included in the Academic Performance questionnaire:

Frustration, Usefulness, Self-Efficacy, and Technical-Efficacy.

F. Ethical Considerations

In conducting this study there are ethical issues and concerns considered by the researchers.

Some of the ethical considerations made in conducting this study of the relationship between technology-enabled learning and students' academic performance are the following:

1. Sample population's predisposition — There is certainly a bias if the sample population will solely consist of science, technology, engineering, and mathematics (STEM) students heavily influenced by technological applications and programs.

2. Students' privileges — Some students are better acquainted with technology than others consequently having better proficiency in navigating technological platforms giving them an advantage in terms of more efficient use of technology in aiding their studies. The researchers ' responsibility is ensuring the diversity of the sample population.

3. Result manipulation — Manipulating the population respondence is an impulsion when trying to prove something. Following the set guidelines in formulating the questionnaire in accordance to studies conducted and cited above in the research instruments employed is imperative. Indisputable results will be gained if the researchers will use proper statistical tools, procedures, and research instruments.

4. Respondent's confidentiality — This study is conducted to determine a student's performance in terms of technology without determining a single individual. Trust must be built between the researchers and the respondents that should be maintained even after the completion of the study. The filled-out questionnaires will be kept in private.

III. RESULTS AND DISCUSSION

RQ1. What is the profile of the respondents?

1.1 Gender
1.2 Year Level
1.3 Program

The table 1 shows the demographic profile of the respondents in terms of gender, year level, and program course. As shown, there are 100 students who have responded in the survey.

Table 1. Profile of the Students

Characteristic's	Level	Frequency	%	(n=100)
Gender	Male	35	35%	
	Female	65	65%	
Year Level	1st Year	27	27%	
	2nd Year	9	9%	
	3rd Year	21	21%	
	4th Year	43	43%	
Program Course	BSIT	20	20%	
	BEED	19	19%	
	BSBA	21	21%	
	BSHM/HRM	20	20%	
	BSED	20	20%	

The table shows that 100 students have responded to the survey. Regarding gender, 35 of the respondents are males and 65 are females. In terms of year level, 27 are first year, nine in second year, 21 in third year and 43 in the fourth-year students. In terms of the Program course, 20 are from BSIT, 19 are from BEED, 21 are from BSBA, 20 are from BSHM/HRM, and 20 are from BSED.

Continually, the second research question asks for the level of technology-enabled learning among college students in St. Mary's College of Bansalan, Inc. in terms of level of usage of technology-enabled learning. Table 2 provides the answer for the question.

Table 2. Level of Usage of Technology-Enabled Learning (*n=100)*

Indicator	$\bar{x}$	SD	Description	
Technology- Enabled	4.21	.469	Very High	Learning

The level of Usage of Technology-Enabled Learning among college students in St. Mary's College of Bansalan, Inc is 4.21 with a standard deviation of .469. This means that Usage of the Technology-Enabled Learning among college students in St. Mary's College of Bansalan, Inc. **Strongly manifested**.

RQ3. What is the level of Perceived Academic Performance among college students of St. Mary's College of Bansalan, Inc in terms of Frustration, Usefulness, Self-Efficacy and Technical-Efficacy?

Reflected in the table 3 are the respective means and standard deviations of each indicator under the dependent variable Academic Performance.

Table 3. Perceived Academic Performance (*n=100)*

Indicators	***$\bar{x}$***	***SD***	***Description***
Frustration	3.76	.701	High
Usefulness	4.24	.629	Very High
Self-Efficacy	4.14	.632	High
Technical-Efficacy	4.14	.5529	High
Overall	4.07	.428	High

The level of Perceived Academic Performance among college students in St. Mary's College of Bansalan, Inc in terms of Frustration is 3.76 with a standard deviation of .701. This means that Perceived Academic Performance among college students in St. Mary's College of Bansalan, Inc in terms of Frustration is **evident**. In terms of usefulness, the mean score is 4.24 with a standard deviation of .629 which means that Perceived Academic Performance among college students in St. Mary's College of Bansalan, Inc is **strongly evident.** In terms of self-efficacy and technical-efficacy, , the mean scores are both 4.14 with standard deviation of .632 and .559 respectively, which means that Perceived Academic Performance among college students in St. Mary's College of

Bansalan, Inc in terms of self-efficacy and technical efficacy is **evident.**

RQ4. Is there a significant difference in the level of technology enabled learning when grouped according to:

4.1 Gender
4.2 Year Level
4.3 Program

Table 4. Significant Difference on the level of Usage of Technology-Enable Learning when grouped according to Gender, Year Level and Program (n=100)

Test Variables	F	Sig.	Decision
Gender	.627	.868	Accept Ho
Year Level	1.297	.212	Accept Ho
Program	1.407	.151	Accept Ho

Since *p*-values for Gender, Year Level, and Program are .858, .212 and .151 > 0.05, respectively, then we do not reject the null hypothesis. There is no significant difference on the level of Usage of Technology-Enable Learning when grouped according to Gender, Year Level and Program.

RQ5. Is there a significant difference in the level of academic performance when grouped according to:

5.1 Gender
5.2 Year Level
5.3 Program

Table 5. Significant Difference on the Perceived Academic Performance when grouped according to Gender, Year Level and Program (n=100)

Test Variables	F	Sig.	Decision
Gender	.723	.871	Accept Ho
Year Level	.913	.624	Accept Ho
Program	1.115	.351	Accept Ho

Since *p*-values for Gender, Year Level, and Program are .871, .624 and .351 > 0.05, respectively, we do not reject the null hypothesis. There is no significant difference in Perceived Academic Performance when grouped according to Gender, Year Level and Program.

RQ6. Is there a significant relationship of use of technology-enabled learning and perceived academic performance among college students in St. Mary's College of Bansalan Inc.?

Table 6. Correlations Relationship Between Use of Technology-Enabled Learning and Perceived Academic Performance (n=100)

Variables	r-value	P-value	Decision
Technology-Enable Learning x AP Frustration	.372**	.000	Reject Ho
Technology-Enabled Learning x AP Usefulness	.393**	.000	Reject Ho
Technology-Enabled Learning x AP Self-Efficacy	.347**	.000	Reject Ho
Technology-Enabled Learning x AP Technical-Efficacy	.409**	.000	Reject Ho
Technology-Enabled Learning x Perceived Academic Performance	**.558****	**.000**	**Reject Ho**

Learning x Perceived Academic Performance

Table 6 shows the positive correlations between Use of Technology-Enabled Learning and Perceived Academic Performance. Since, p-values are all .000<0.01, then we reject the null hypothesis. There is a significant relationship between the Usage of Technology-Enabled Learning and Perceived Academic Performance. This positive correlation implies that when the Usage of Technology-Enabled Learning increases, it can be assumed that Perceived Academic Performance also increases.

On the strength of relationship between variables, with the value of r=.372, .393 and .347 for Academic Performance in terms of Frustration, Usefulness and Self-Efficacy, respectively Usage of Technology-Enabled Learning with these indicators has a Weak Positive Relationship. For the value of r=.409, Usage of Technology-Enabled Learning has a Moderately Positive Relationship with Academic Performance in terms of Technical-Efficacy.

Overall, Usage of Technology-Enabled Learning and Perceived Academic Performance with r-value = .558 has a Moderately Positive Relationship. The use of these technologies can impact students' academic performance [11]. If social networks are used properly, good academic performance can result and have a positive influence on students' development [12]. Results show that most of the students use technology as their learning tool to boost their student engagement or motivation. Findings indicated that in order to achieve good performance in school, they use technology to help their studies and provided own learning that makes students more equipped; moreover, by into real-world situations, students can understand complex concepts, which will then increase competence [13].

IV. CONCLUSIONS

The demographic profile contains the gender, year level and program of the respondents. The data shows that among 100 who responded to the survey, most of the respondents were females. The respondents were ranging from 1st year to 4th year students enrolled in different programs of St. Mary's College of Bansalan Inc.

The Usage of Technology-Enabled Learning level among college students in St. Mary's College of Bansalan, Inc has a mean of 4.21 with a standard deviation of .469. So, the researchers concluded that the usage of technology enabled learning among the students is very high.

However, **t**he level of Perceived Academic Performance among college students in St. Mary's College of Bansalan, Inc in terms of Frustration has a mean of 3.76 with a standard deviation of .701, which means the level is high. In terms of usefulness, the mean score is 4.24 with standard deviation of .629 which means that the level is very high. **T**he level of Perceived Academic Performance in terms of self-

efficacy and technical efficacy are both has a mean of 4.14 with standard deviation of .632 and .559 respectively, which means that the level of Perceived Academic Performance among college students in St. Mary's College of Bansalan, Inc in terms of self-efficacy and technical efficacy is high.

The level of Usage of Technology-Enable Learning when grouped according to Gender, Year Level and Program implies that there is no significant difference on the Perceived Academic Performance when grouped according to Gender, Year Level and Program. Furthermore, the positive correlations between Use of Technology-Enabled Learning and Perceived Academic Performance shows that there is a significant relationship between the Usage of Technology-Enabled Learning and Perceived Academic Performance, which means that when the Usage of Technology-Enabled Learning increases, it can be assumed that Perceived Academic Performance also increases.

ACKNOWLEDGEMENT

We the third year BSIT students of St. Mary's College of Bansalan Inc. Without the help of many people especially to my groupmate, this endeavor would not have been possible. Many thanks to Mr. Mark Van Buladaco our research instructor who read through every one of our revisions and helped us make sense of it all. Moreover, we owe a great deal of gratitude to our family who supported us from the beginning financially, spiritually and mentally. We appreciate all of your efforts and guidance by making this research. May God bless us all.

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