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Determining Technological Literacy and Performance Levels of Teachers and School Administration

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Abstract

Aims: This study aims to determine the technological literacy and performance levels of teachers and school administration, as well as improve the performance of school administrators based on their OPCRf and teachers based on their IPCRF.

Study Design: This study used descriptive-correlational research methods. It covers the individual's and sample's traits, and most importantly, it gives the study useful data.

Place and Duration of Study: The study's respondents are the six public high schools in the District of Montevista, Davao de Oro, with one hundred and fifty-one (151) secondary school teachers and six (6) school principals for the years 2023–2024.

Methodology: They select the participants, including teachers and school leaders, using universal sampling. They conducted qualified and valid individual responses.

Results: It was shown that the school leaders' level of technology literacy showed a significant effect on their performance in the OPCRf rating, while the teacher-respondent's level of technology literacy in terms of presentation packages showed a significant effect on their IPCRF rating performance.

Conclusion: Department of Education (DepEd) may regularly organize orientations on the Results-Based Performance Management System (RPMS) for IPCRF and OPCRf. These sessions aim to equip school principals and teachers with the necessary knowledge and skills to navigate the system competently and confidently. They aim to equip them with the essential knowledge and skills to excel in their daily lives, prepare students for the future, and foster flexible thinking that will enable them to adapt to inevitable changes in the future.

Keywords: Technological literacy, Performance, Teachers, School Administration, IPCRF, OPCRf

INTRODUCTION

Technological literacy is the ability to comprehend and apply knowledge from diverse digital sources in a variety of contexts, including academic, professional, and personal life. Furthermore, technological literacy pertains to an individual's ability to utilize information and communication technology (ICT) for searching, analyzing, utilizing producing, and conveying information, which requires both cognitive and technical abilities. It is a life skill that necessitates the use of technology, information, and communication devices, along with the development of information management skills, critical thinking skills, and appropriate online behavior (1). Technological literacy plays an important role in education because it assists students in searching for and selecting valid and credible literature from a variety of sources, protecting students from various cyber threats, preventing students from receiving fake news, and educating students about their rights to privacy and data security. It can help students interact and collaborate with peers or teachers via digital media (2).

The acquisition of technological literacy has become an essential prerequisite for attaining a sense of literacy in the 21st century. Global demands and the emergence of new cohorts of learners have caused the teaching profession to recognize the inefficiency of the current traditional teaching methodology. This is the reason. The terms "electronic literacy," "technological literacy," and "digital literacy" are interchangeable, with definitions that encompass the acquisition and utilization of a variety of technological tools to facilitate quality instruction, the cultivation of fundamental skills in core personal computer (PC) and internet applications, as well as one's expectations regarding the capabilities of their computers, local network, and internet (4). In addition, technological literacy is one of the important competencies required by elementary school teachers in the digital transformation era, in addition to other competencies such as creativity, critical thinking, communication, problem-solving, mathematical skills, and collaboration (5).

The technological literacy is the most frequently mentioned skill. In the twenty-first century, there are increasingly acknowledged characteristics that distinguish teachers from students who are prepared for a more complex life and work environment. These include critical thinking and problem-solving abilities. It effectively analyzes and evaluates facts, reasoning, claims, and beliefs in order to solve a variety of unfamiliar issues in both conventional and new patterns (1). In addition, technological literacy is commonly defined as a set of information, skills, and experiences that may be applied to meet future demands. Extending the concept of teacher effectiveness, it describes some specific characteristics that educators possess in order to satisfy their high professional demands. The majority of research on the instructional components of teachers' efficacy has focused on teachers' knowledge, such as pedagogical competency, pedagogical subject knowledge, and technology pedagogical competencies (2).

Technological literacy is the ability of individuals to navigate the socially applied aspects of communication technologies and the emerging digital environment. Furthermore, technological literacy encompasses a collection of fundamental abilities that encompass the processing and retrieval of information, the creation and utilization of digital media, a diverse array of professional computing skills, and the engagement in social networks to facilitate the exchange of knowledge. Additionally, it offers individuals the fundamental capacity to achieve valuable results in

their lives. It fosters employment prospects by enabling users to access digital content and online services (6).

A teacher must be capable of establishing a learning process in the school environment that is engaging and extends beyond the classroom, utilizing engaging learning strategies and designs to grab the attention of students. "The educator's responsibility in the learning process is to establish engaging and meaningful learning environments and strategies that motivate students to learn. A fruitful learning experience is one in which students are able to effectively comprehend and apply the material. Conversely, the leadership abilities of the school administrator play a significant role. An understanding of the organizational concept, an analysis of the problem, a demonstration of a sample of actions and behaviors, concern for the situation, particularly differences in decision-making processes, and the maintenance of these skills during the adaptation process are among the fundamental skills that school administrators should possess (8).

The degree to which the education system and school culture foster the leadership behaviors of school administrators closely correlates with their ability to support teachers in alignment with organizational objectives and foster an innovative school culture. When determining the characteristics of effective schools, we focus on subjects such as the leadership attributes of principals, the quality of teaching in schools, the learning climate and culture, teacher conduct, and evaluation criteria (9). Moreover, the teacher is one of the school members who plays a significant role in achieving educational objectives. The teachers, as well as the students, are directly involved in the implementation of the teaching and learning process in the classroom. The responsibility of a teacher is to establish a positive classroom environment that fosters students' creativity and promotes a sense of calmness while they learn (10).

The researcher had reviewed literature and studies from a variety of sources, the majority of which focused on foreign studies. To the best of the researcher knowledge, no local study has determining technological literacy and performance levels of teachers and school administration in Montevista, Davao de Oro. On the other hand, conducting additional studies could offer valuable insights to teachers and school administration on how to meet the established standards. Thus, this is relevant at the current time for the teachers and school administration to achieve the common goal of harmonious work in the school and good standing.

Theoretical Background

Cognitive flexibility theory refers to the capacity of humans to adjust their cognitive processing techniques in order to effectively deal with novel and unforeseen circumstances in their surroundings. This definition encompasses three crucial attributes. Cognitive Flexibility is a learned ability that involves a process of learning. Furthermore, Cognitive Flexibility entails the adjustment of cognitive processing processes. In the context of this concept, a strategy refers to a series of operations that systematically explore a problem space. Cognitive flexibility theory refers to the ability to adapt and adjust complex activities, rather than simple, isolated answers. Ultimately, the individual will adjust to novel and unforeseen alterations in their surroundings once they have engaged in a certain activity for a considerable duration. It emphasizes the ability to spontaneously organize one's knowledge in multiple ways in adaptive response to radically changing situational demands. The theory concerns itself more with the

transfer of knowledge and skills beyond their initial learning situation. They define skill transfer as the student's desire to apply the knowledge and skills they have mastered in the job training program (8)

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The use of technology enables a better interactive learning experience in the classroom, resulting in increased student engagement. A teacher becomes an integral part of the entire teaching-learning activity, with a focus on achieving the desired results. A teacher communicates beliefs about the purpose and processes of learning, which have an impact on students' attitudes. Motivation theorists have concluded that students' responses are different in classrooms that focus on task-oriented learning and those that focus on competency-based learning. Teachers' motivation to use technology in teaching is influenced by the satisfaction they derive from using ICTs, the sense of achievement they derive from participating in professional activities, and their sense of responsibility and fulfillment of individual expectations (10)

Research Objectives

This study aims to determine the technological literacy and performance levels of teachers and school administration in the Montevista District during the 2023–2024 school year. Specifically, this paper will attempt to answer the following questions:

1. To determine the level technological literacy of the respondents in terms of:
 - 1.1. internet use
 - 1.2. email
 - 1.3. file navigation
 - 1.4. presentation packages and
 - 1.5. spreadsheets
2. To determine the level of performance in terms of:
 - 2.1. Teachers (IPCRF)
 - 2.2. Principal Schools (OPCRF)
3. Was there significant relationship between technological literacy and performance levels of teachers and school administration?

Statement of Null Hypothesis

The respondents' technological literacy is not significantly affected performance levels of teachers and school administration.

METHODS

Research Design

This study uses descriptive-correlational research methods. It includes the individual's and sample's characteristics, and most importantly, it provides relevant study data. Every attempt to develop knowledge involves the process of gathering and analyzing empirical data. It requires expertise in careful and systematic investigation, which will concern the current situation in terms of technological literacy and performance. This study focuses on the technological literacy of school leaders and teachers, as well as their performance (11).

The researcher uses descriptive correlational to ascertain the attributes of certain groups of individuals or establish connections between diverse variables. A descriptive correlational design is a research method where the investigator examines a single group and aims to establish the connection between two variables. This information explains the purpose of the descriptive correlational design in research, emphasizing its importance in examining the correlations between variables.

Location of Study

The study conducted in six (6) public secondary schools in the Montevista District, Davao de Oro.

Research Instruments

To achieve the study's objectives, the researcher adopted and used an integrated research questionnaire as the research instrument. They adopted a questionnaire from existing materials produced and used by credible scholars and researchers on the topics of technology literacy and performance. The researcher divided the questionnaire into two sections: one for technology literacy and another for performance. There are five types of technology literacy: internet use, email, file navigation, presentation packages, and spreadsheets. There are two types of performance: teachers (IPCRF) and principal schools (OPCRF).

Research Respondents

The study's respondents are secondary school teachers and school administrators in the Montevista District. To select teachers and school administrators as participants, the study used universal sampling. All sampling research will recruit participants from the entire population. There will be 151 teachers and six school administrators participating in this study.

Table 1: Distribution of Respondents

School	Teacher	School Administrator
Mayaon National High School	17	1
Camansi National High School	14	1
Canidkid Integrated School	14	1
San Vicente Integrated School	12	1
Alimadmad Integrated School	14	1
Montevista National High School	80	1
Total	151	6

Research Procedure

After receiving approval from the panel and evaluator, as well as

an endorsement letter from Assumption College of Nabunturan (ACN), the researcher will collect data using the following methods: The researcher will prepare and send a letter to the Division of Schools Superintendent of Davao de Oro seeking permission to conduct studies in the identified school.

Upon approval of the letter, the researcher will submit a written request seeking permission from public school district supervisors to allow their district's teachers and school administration to participate in the study. The respondent's responses will also be kept confidential. The data collection process begins with a survey questionnaire. The questionnaire will take 20–30 minutes to complete. In order to fast-track data collection, the researcher will seek the assistance of public school district supervisors to include the instrument, as they have direct access to school leaders.

RESULTS AND DISCUSSION

The internet provides users with a high level of awareness of the relevance of their surroundings. The internet serves as a platform for a variety of information. The internet will continue to grow as long as its consumers have simple access. Recent data indicates that users can access information sites, social media platforms, internet games, and engage in cybersex. Due to the impact of internet use on academic achievement and face-to-face contact, most students now have access to the internet on their cellphones. This allows students to enhance their academic knowledge. Teachers' use of computers and access to internet resources is relatively significant (12).

Technological literacy has five (5) indicators. Internet use provides users with a high level of awareness of their surroundings' relevance. The internet serves as a platform for a variety of information. A person's proficiency in using computers and other digital devices to access the Internet enables them to discover, review, evaluate, create, and use information through various digital platforms, including web browsers, databases, online journals, magazines, newspapers, blogs, and social media sites (13), which refers to the basic knowledge, abilities, and attitudes required by a representative of the digital society. This is the ability to use, manage, understand, and appraise technology. A person's proficiency in using computers and other digital devices to access the Internet enables them to discover, review, evaluate, create, and use information through various digital platforms, including web browsers, databases, online journals, magazines, newspapers, blogs, and social media sites, which refers to the basic knowledge, abilities, and attitudes required by a representative of the digital society. This is an integral quality of experts in various disciplines, including education (14). Teachers and school administrators most commonly use e-mail as an online communication medium to address academic needs, including requests for assignments, tests, grade sheets, and other academic matters. In addition, e-mail can play an important part in an educational program that stresses interactive learning (15). The file navigation system is an electronic tool that addresses the issue of determining the user's location, plotting a path between two points, and providing additional helpful information to aid user orientation (16). The effective presentation package commences with a compelling statement that informs the audience about the content they will encounter during the lecture. Using a title for the initial slide should increase anticipation for what awaits in the subsequent content. The next slide could depict a problem to solve or a visual depiction of the subject under discussion, demonstrating outstanding presentation abilities that garner positive feedback

from educators and administrators (17). spreadsheets allow users to see patterns and organize data into meaningful categories, such as graphing, statistics, and data analysis. A spreadsheet is a digital representation of a paper ledger sheet. Vertical and horizontal lines form a matrix that makes up the structure. It is a user-friendly environment that facilitates numerical manipulation, making it relatively effortless and minimally uncomfortable (18).

Table 2: Level Technological Literacy

Indicator	SD	MEAN	Descriptive Level
Internet use	0.79	3.24	high level
Email	0.86	3.49	High
File Navigation	0.74	3.44	High
Presentation packages	0.99	3.24	High
Spreadsheets	1.01	3.28	High
Over all	0.89	3.33	High

Based on internet usage, Table 2 shows the respondents' level of technological literacy. Overall, the data shows that the teacher respondents have a high level of internet literacy, as indicated by an overall mean score of 3.24 (SD = 0.79), as mentioned in the description. It is a fact that the internet is a repository of free materials that can be useful for students and teachers in the classroom. The mean score for emails is 3.49 (SD = 0.86). This means that respondents use emails as one of their online platforms to communicate with stakeholders. The file navigation gets a mean score of 3.44 (SD = 0.74). This means that both teachers and school leaders can manage to navigate their files online. While the presentation packages got 3.24 with a SD of 0.99, Additionally, the spreadsheets received a score of 3.28 with a standard deviation of 1.01, indicating a high level of descriptiveness. The overall mean of technological literacy was 3.33, with a standard deviation of 0.89.

Table 3: The OPCRF respondent performance distribution is for school administration

Score in OPCRF	YEAR 2023-2024	Descriptive Level
School Administration	4.26	Very High

Table 3 demonstrates that the respondents' OPCRF performance of the school administration is very high, as evidenced by the overall mean rating of 4.26 (SD = 0.234), indicating that the school's assessment exceeded expectations because it delves into the system's objectives to establish a connection between individual accomplishments and organizational objectives, foster growth and dedication, and facilitate personal and professional development. The system employs a four-part evaluation form to set objectives, evaluate competencies, compile ratings, and identify areas for improvement.

Table 4: The distribution of respondent performance in the IPCRF is for school teachers.

Score in IPCRF	YEAR 2023-2024	Descriptive Level
Teachers	4.53	Very High

Table 4 shows the respondents' performance levels on the Individual Performance Commitment and Review Form (IPCRF) for teacher respondents and the Office Performance Commitment

and Review Form (OPCRF) for school leader respondents. The overall mean rating of 4.53 (SD = 0.247) indicates that the teacher-respondents demonstrated excellent performance in their IPCRF. The Individual Commitment and Review Form shows what the teacher has done for the entire school year. This is important because a well-structured evaluation, such as the Individual Performance Commitment and Review Form (IPCRF), can give teachers vital feedback and help them improve and become more effective. The purpose of this study is to analyze the efficiency of the IPCRF as an evaluation tool for enhancing teacher performance.

Table 5: Significance between respondents' technology literacy and their performance

Variable	p-value	Correlation coefficient	Descriptive Level
Literacy			
Score of IPCRF and OPCRf	.032	0.274	Significance

Table 5 shows the impact of respondents' level of technological literacy on their performance. The table reveals that the school head respondents' technology literacy significantly influences their performance in the OPCRf rating, as demonstrated by the P-value and probability value below the 0.05 alpha threshold, thereby supporting the null hypothesis. This suggests that the school head's level of technology literacy influences the OPCRf's response performance. On the other hand, the teacher-respondent's level of technology literacy showed a significant effect on their performance in the IPCRF rating, as indicated by the T-value and p-value less than 0.05, which led to the rejection of the null hypothesis. This suggests that teacher respondents' competence and literacy in knowing how to use presentation packages such as Microsoft PowerPoint can have a direct impact on teacher performance.

CONCLUSION

Based on the available data, the researcher has drawn the following conclusions:

Respondents have a high level of technological literacy. The teacher-respondents rated the indicators "internet usage" and "e-mail" the highest, while they rated the indicator "spreadsheet" the lowest. Teacher-respondents showed outstanding performance in their IPCRF, while school head-respondents had a very satisfactory performance in their OPCRf.

The school administrator level of technological literacy showed a significant impact on their performance in the OPCRf rating, while the teacher-respondent's level of technological literacy in terms of presentation packages showed a significant impact on their performance in the IPCRF rating.

Technology allows students to form deep connections while learning. Technology sets the stage for collaboration. Technology provides opportunities for students to consider real challenges and come up with solutions. Technology can also clarify and stimulate thinking by turning words into pictures. This can increase the frequency of students helping each other when they use technology-based work with other aspects, and it leads to situations where students need to seek help from their peers or the teacher.

RECOMMENDATION

To enhance the literacy skills of school heads and field teachers, the Department of Education officials should conduct comprehensive training and assessment on the efficient utilization of technology. Additionally, they should organize a workshop on the application of spreadsheets in education, as this study revealed a deficiency in this area, and encourage school leaders and teachers to expand their knowledge of teaching and student learning. Furthermore, researchers should conduct parallel studies to examine how the level of technology literacy among teachers and school leaders influences student achievement. This study should design a comprehensive teaching plan that teachers and school leaders can test for its effectiveness.

CONSENT

As per international standards or universities standard, respondents' signed consent was the author(s) collected and preserved the materials.

ETHICAL APPROVAL

The researchers followed and adhered to all of the criteria for conducting the study, including the assessment methodology and standardized criteria. Voluntary participation, privacy, confidentiality, and permission. The Assumption College of Nabunturan Ethics Review Committee's requirements for organizational/location and technology issues were strictly adhered to. The researchers gained certification for carrying out the investigation.

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