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The Learner Information System (LIS) Utilization and Data Management Skills of Elementary School Teachers of Digos Occidental District

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Abstract. This study examined the utilization of the Learner Information System (LIS) and the data management skills of elementary school teachers in the Digos Occidental District. It investigated the challenges faced by these teachers, including inadequate training, limited technological infrastructure, and time constraints, which hindered efficient data entry, analysis, and interpretation. The research highlighted the importance of comprehensive training programs and robust technological support to enhance teachers' data management capabilities. The study found that addressing these issues through better technical assistance from school heads could improve teachers' instructional strategies and ultimately benefit student outcomes. The findings provided valuable insights for policymakers and future researchers to optimize LIS utilization in educational settings. Comprehensive training and robust technological support were identified as crucial factors in overcoming the identified challenges and enhancing overall data management efficiency among teachers.

KEY WORDS
1. Learner Information System (LIS) 2. Data Management Skills
3. Elementary School Teachers
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1. Introduction

In today's educational environment, strong skills in utilizing learner information systems (LIS) and managing data are becoming increasingly important for teachers. These systems give teachers a centralized platform to access important student information, monitor academic progress, and customize instruction to meet each student's needs. Proficiency in LIS helps teachers efficiently manage class rosters, attendance records, and grading systems, saving time and ensuring accuracy in administrative tasks. Teachers often face challenges in effectively using student data due to limited data management skills. One major obstacle is the lack of comprehensive training, and professional development opportunities focused on data management. Many teachers start their careers with little experience in data analysis and interpretation, which makes it difficult for them to manage and analyze student data effectively. Additionally, the complexity of educational data systems and tools poses a significant obstacle. Teachers often need help navigating and understanding these systems' functionalities, resulting in data entry and retrieval inefficiencies. Moreover, time constraints exacerbate the challenges of data management. Teachers juggle numerous responsibilities, leaving little

time for data entry, analysis, and interpretation tasks. The outcomes of this study address various beneficiaries. School Heads benefit from insights into maximizing learner information utilization, enabling them to plan effectively and provide technical assistance to teachers. Teachers gain an understanding of factors influencing learner information system (LIS) utilization, using study findings as a baseline to address impediments. Learners benefit from the provision of accurate information tailored to their needs. Moreover, future researchers will find value in this study as a source of data and a foundation for further research into LIS efficiency and its impact. In Nigeria, implementing Learner Information Systems (LIS) faces several critical issues that impede their effectiveness and utility in the educational sector. One primary challenge is the need for more technological infrastructure. Many Nigerian schools, particularly rural ones, need more hardware, stable electricity, and internet connectivity to support LIS. This infrastructural deficiency significantly hinders these systems' widespread adoption and effective use (Olusola, 2019). This deficiency poses a considerable challenge to the education system, hindering teachers' ability to track student progress accurately, identify areas of weakness, and adapt instructional strategies accordingly. Moreover, NITDA (2019) points out that inadequate training and professional development opportunities exacerbate this issue, leaving teachers needing more skills to harness the potential of data in their classrooms. Learner Information Systems (LIS) utilization in Africa faces several unique challenges, impacting the efficiency and effectiveness of educational data management across the continent. The integration and interoperability of LIS with existing educational management systems pose significant challenges. Schools often use disparate systems that are not designed to work together, leading to data silos and inconsistencies. This fragmentation hinders the ability to gain a comprehensive view of student progress and needs, thus affecting policy-making and intervention strategies (Aker, 2019). Additionally, the issue of user proficiency must be addressed. Effective implementation of LIS requires training and capacity building for educators and administrative staff, many of whom may need more technical skills. With adequate training, the potential benefits of LIS can be fully realized, and the systems may be underutilized or mismanaged (Omidire, 2019). In Cambodia, implementing Learner Information Systems (LIS) faces several critical challenges that hinder their effectiveness and broader adoption. There are challenges related to the integration and interoperability of LIS with existing educational management systems. Schools often use different systems to manage student records, attendance, and academic performance, which only sometimes communicate effectively with one another. This lack of interoperability leads to data silos, inconsistencies, and difficulties in generating comprehensive reports, affecting decision-making and policy formulation (Yun, 2019). Data management skills among teachers have been highlighted in various studies and reports. According to Rany (2019), there is a growing recognition of the importance of data-driven decision-making in education. Still, many teachers in Cambodia need to gain the necessary skills to manage and utilize data in their teaching practices effectively. This deficiency in data management skills hampers the ability of educators to assess student progress accurately, identify areas for improvement, and tailor instruction to meet individual learning needs. Learner information systems (LIS) utilization in the Philippines needs to be improved, but several serious problems have compromised its usefulness and efficacy. The digital divide is one of the main issues. Many schools lack the technical infrastructure—such as computers, dependable electricity, and internet connectivity required to effectively enable LIS use, es-

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pecially in isolated and rural locations. This technology divide makes it challenging to handle student information effectively and causes unequal access to educational resources (Philippine Institute for Development Studies, 2019). Major concerns also include data security. Education institutions in the Philippines are vulnerable to data breaches and unauthorized access to personal student information due to weaknesses in the country's present data protection legislation structure, even with recent enhancements. Implement robust data protection procedures to ensure the trust and security of student records (National Privacy Commission, 2019). Another problem is the interoperability and integration of various systems utilized in schools. Many educational institutions use various platforms to manage student data, attendance, and academic performance, many of which do not communicate well with one another. This lack of interoperability might result from inconsistency in data, inefficiencies, and challenges in producing thorough reports required for policy and decision-making (Department of Education, 2019). User competence and training are also significant concerns. Teachers and administrative staff must be adequately trained and conversant with the systems to use LIS effectively. Unfortunately, many educators and administrators in the Philippines lack the required knowledge and expertise, which may cause these technologies to be misused or underutilized. For LIS to be successfully adopted and used, it is imperative to provide ongoing professional development and technical assistance (SEAMEO INNOTECH, 2019). Financial constraints further complicate the implementation of LIS. Many schools, especially those in underfunded locations, need help paying for the initial and ongoing expenses of acquiring and maintaining the required technology and staff training. A lack of funding can severely hamper the extensive use of LIS, lowering the educational administration's general standard and efficacy (Asian Development Bank, 2019). In Region XI, particularly in the Division of Digos City, in the past three school years from 2017 to 2020, more than 80 percent of the LIS issues that we had assisted and resolved came from Secondary Schools; in fact, more than 20 percent of 6 it was sent to Central Office ICT-USD helpdesk for assistance in the school year 2019-2020. Some schools could not even update the enrollment of students in the LIS facility. In gathering data from schools, most of the time, the elementary schools were late. They needed help submitting reports to the Division Planning Office even though communication was extended, such as Facebook messenger group chat and contact numbers given. It was for this reason that this researcher conducted this study. The results of this study could serve as a basis for maximizing the effectiveness of utilizing LIS facilities.

1.1. Review of Significant Literature—

1.1.1. 0Accessibility—Mac Domhaill et al. (2021) found that school principals believe teachers find the system more accessible after editing student profiles, making navigation easier post-data input. This highlights the need for initial data input training for teachers. Rasheed et al. (2020) noted that educational institutions face challenges in providing appropriate instructional technology and practical training for online teaching. Aboagye et al. (2021) emphasized the need for internet connections to facilitate data access and upload. Read and Atinc (2017) support this by stating the necessity for internet access for efficient data handling. Mateo (2018) added that inadequate infrastructure impacts the effective use of technology in schools. Therefore, investment in ICT and school infrastructure is crucial, alongside adequate training for school personnel.

1.1.2. Transparency—Winkelmes (2023) asserts that LIS programs enhance transparency, which is critical for large-scale program effectiveness. Transparent teaching and learning can address challenges like unequal preparation, mo-

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tivation, and resource access, improving student success. Boye and Tapp (2019) found that clear communication of learning objectives and strategies boosts students' academic confidence, sense of community, and perseverance. The Department of Education (2022) corroborates this by stressing the importance of accurate and accessible educational systems for optimal functionality. Transparency also helps mitigate issues of corruption and inaccuracies in data reporting, crucial for informed decision-making and empowerment within the educational system.

1.1.3. Stability—Contreras (2019) highlighted the importance of accurate data processing and a structured information system for building trust and ensuring the proper functioning of the education sector. Robust security measures are necessary to protect against unauthorized access and data manipulation. Radojčić et al. (2022) emphasized the importance of stable and reliable learner information systems for effective classroom management and student assessment. Investments in the stability and reliability of LIS are essential for enhancing educational processes.

1.1.4. Data Management Skills of Teachers—Achuonye and Nwiyi (2021) emphasize the need for clear, comprehensive, and current resources to support system navigation and management. Efficient data management allows teachers to make informed decisions and personalize instruction, leading to positive student outcomes. Jogezai et al. (2018) found that ICT integration significantly improves student participation. Effective data management and accessibility empower teachers and enhance teaching practices.

1.1.5. Analytical Skills—Phurikultong and Kantathanawat (2022) highlight the importance of stable internet connections for ICT equipment usage in educational institutions. Training teachers in LIS utilization fosters critical thinking, problem-solving, and data analysis skills. Simulation activities and real-world applications of LIS concepts help teachers develop these skills and enhance their teaching effectiveness (Inayah Masruroh 2021; Makiyah et al. 2019). Ma and Lund (2021) stress the importance of fostering critical thinking in students, enabling them to apply LIS knowledge beyond the classroom. Lund and Wang (2021) further emphasize continuous assessment and feedback to improve instructional strategies and student learning outcomes.

The literature underscores the critical role of learner information systems in modern education. Effective utilization, transparency, stability, and data management skills are essential for enhancing teaching practices, fostering student engagement, and supporting overall educational success. Investments in technology infrastructure, robust training programs, and ongoing professional development are necessary to optimize the benefits of LIS and ensure the achievement of educational goals.

1.2. Theoretical/ Conceptual Framework—The study was anchored on Wegner, Giuliano, and Hertel's (1985) theory of the transactive memory system for the cognitive interaction between intimate relationships. Initially, the transactive memory system was conceptualized as an information processing system that integrated personal memory and team communication processes (Wegner, 2007). Hollingshead (2001) defined the transactive memory system as the division and cooperation of cognitive labor in coding, storing, retrieving, and communicating information from different fields by emphasizing the information processing process. Pantel et al. (2002) posited that information theory provides tools to quantify information. It was initially designed as a theory of data communication over noisy channels. However, it has recently been used as an abstract domain-independent technique for representing and analyzing data. Entropy measures the degree of disorder in data, and mutual information

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captures the idea of noisy relationships among data. Viewing information theory as a tool to express and quantify notions of information content and information transfer has successfully extracted structure from data. Theoretically, technology management theory focuses on the process and antecedents of knowledge collaboration within the team and the outcomes. The impact of the Technology Management System (TMS) on team performance can be divided into four levels: the performance of software project teams, the job performance of virtual teams, team innovation performance, and team performance in social media. In software project teams, team familiarity, task familiarity, and interpersonal interaction impact team performance through the mediation of TMS. Moreover, TMS can improve team innovation performance by improving knowledge utilization, knowledge diversity, and knowledge management ability (Dai, Du, Byun, Zhu, 2017; Yuet al., 2016). Also, TMS embodied in social media could enhance team members' meta-knowledge, innovation ability, and team innovation performance (Cao Ali, 2018). Additionally, the study was aligned with the Resource Dependency Theory of Pfeffer and Salancik (2003). This theory focuses on the interaction between organizations and environments and the survival of organizations' needs to access necessary resources from the external environment (Pfeffer Salancik, 2003). This theory has been widely applied across various fields, such as business, public administration, organizational behavior, and IS. The existing review has revealed the conceptual development, empirical research, and application of RDT from a management perspective. More importantly, Internet-based ICT provides practical tools that increase cooperation opportunities for organizations to share resources and weaken their dependence on existing partners or resources. Resource Dependency Theory focuses on combining, integrating, and utilizing external resources to maximize profits. It is found that external dependence caused by insufficient organizational resources leads to inter-organizational business integration. In contrast, the uncertainty and substitutability of technology related to resources hurt inter-organizational ICT governance (Chatterjee Ravichandran, 2013). Moreover, information sharing among organizations could help organizations quickly and flexibly adjust their strategy and operation management and improve the efficiency of organizational cooperation. The ability of organizations to develop through resource sharing significantly impacts promoting technology integration (Tsou Chen, 2012). From the internal perspective, such resource sharing is generally reflected in the higher dependence of the subsidiary on the parent company's resources, and it could help to formulate unified IS standards (Raoet al., 2007). More importantly, the governance of ICT resources among organizations will be affected by other aspects of governance, such as relationship norms and bilateral trust (Xiaoet al., 2013). Department Order 14, s. 2016 on updating the learner profiles for the end of the school year (EOSY) 2015-2016 on the learner information system (LIS). To maintain accurate and up-to-date information on learner's basic profile, enrolment status, and end-of-the-school-year academic accomplishment for the school year (SY) 2015-2016, online updating through the Learner Information System (LIS) will be available from the start to the end of every school year. All public and private elementary and secondary schools, state universities, and colleges (SUCs) offering elementary and secondary education are directed to update their learners' profiles through the LIS. The Entity-Relationship Model (ERM) is a cornerstone of database design. It offers a structured approach to representing the relationships between entities within a system. Developed to provide a visual depiction of data's structure and interactions, the ERM serves as a fundamental conceptual framework for database archi-

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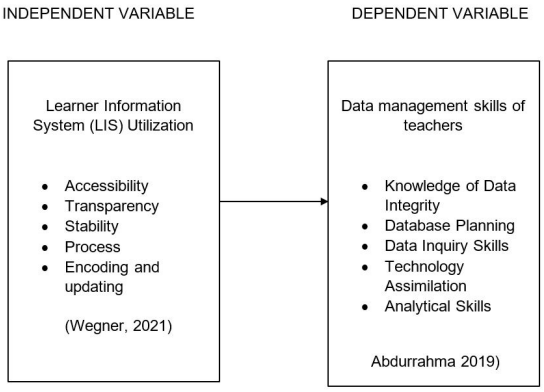

Fig. 1. Theoretical /Conceptual framework of the study

tects and developers. At the heart of the Entity-Relationship Model lie entities, which encapsulate real-world objects or concepts within the application domain. These entities are characterized by a set of attributes that describe their properties or characteristics. According to Date (2018), entities and attributes form the building blocks of a database schema, representing the essential elements of the system and providing a foundation for data organization and management. In addition to entities and attributes, the ERM defines relationships, which signify the associations or connections between entities. Relationships elucidate how entities interact or relate to each other within the system. Garcia-Molina et al. (2020) emphasize the importance of relationships in database design, highlighting their role in capturing the inherent connections between different entities and facilitating data retrieval and manipulation. The Entity-Relationship Model finds practical application in various domains, including business, education, healthcare, and government. In a case study by Chen et al. (2020), the authors discuss implementing an ERM-based database system for managing student records in a university setting. The ERM facilitated the organization and retrieval of student data, enabling university administrators to streamline administrative processes and improve decision-making. As evidenced by the 2020 literature, the ERM finds practical applications across various domains, enabling organizations to effectively manage and utilize data for informed decision-making and improved operational efficiency. The model presented in Figure 1 showed the presumed relationships of the independent variable LIS utilization on data management skills of elementary school teachers in the Digos City Division. Figure 1 illustrates the conceptual paradigm; the arrow represents the significant relationship between the two variables. The correct box represents the independent variable Wegner (2021) mentioned to evaluate the extent of Learner Information System utilization in terms of accessibility, transparency, stability, process, encoding, and updating. As Abdulrahman (2019) mentioned, five (5) indicators, including data integrity, database planning, data inquiry skills, technology assimilation, and analytical skills, were the dependent variables on teachers' data management skills.

1.3. Statement of the Problem—This study aimed to examine the extent of learner information system utilization and data management skills of teachers. Specifically, it sought to answer the following questions:

(1) What is the extent of learner information system utilization in terms;

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(1) Accessibility
(2) Transparency
(3) Stability
(4) Process, and
(5) Encoding and updating?

(2) What is the extent of data management skills of Elementary school teachers in terms of:
(1) Knowledge of Data Integrity
(2) Database Planning
(3) Data Inquiry Skills
(4) Technology Assimilation, and
(5) Analytical Skills?

(3) Is there a significant relationship between LIS utilization and the data management skills of elementary school teachers?

(4) Which domains of LIS utilization significantly influence the data management of elementary school teachers?

1.4. Hypothesis—The following were the null hypotheses of this study that were tested at a 0.05 level of significance: Ho1: There is no significant relationship between learner information systems and data management skills of elementary school teachers. Ho2: None of the domains of LIS utilization significantly influence the data management skills of elementary school teachers. This study focused on the relationship between LIS utilization and data management skills of elementary school teachers and benefitted the following: Division Information Technology Officer. The study helped outfit management and information technology training and workshops for all system end-users, namely, classroom advisers and system coordinators, primarily newly assigned personnel, at least once every year or depending on how often system updates can be streamlined. The division information technology officer shall be equipped with knowledge in conducting training and workshops to ensure optimal knowledge and skills absorption of class advisers and school information technology coordinator. School ICT coordinators. This study provided a streamlined copy of the EBEIS/LIS manual to be used by ICT coordinators and advisers as reference material to facilitate proper access and improve system usability. School heads. The study capacitated the school heads to look for ways to strengthen their support in acquiring internet connectivity by partnering with internet service providers and urging them to optimize the stability of their connection, especially in remote areas and Parents and stakeholders. This study served as a baseline for furthering their creation of online information management systems for physical facilities, curriculum, financial, community extension service, and personnel management. These additional portals will be created separately and connected to the EBEIS, much like with LIS, so a different coordinator will focus on each portal's updates. This move can boost data collection and provide well-rounded information linked within the EBEIS environment. Future researchers.This study served as a basis for those researchers to provide additional information about the level of satisfaction with the schools' learner information system efficiency. Division planning officers. This study helped them provide technical assistance in using the facility and designing programs that help teachers effectively keep learners' profiles. They could provide the appropriate technical assistance and proper mechanisms for monitoring the school information

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system. The findings of this study served as the basis for planning, monitoring, and evaluating school performance.

2. Methodology

This chapter will outline the processes and steps involved in conducting the study. This will encompass selecting the study's design, identifying the respondents and the sampling method, choosing the research instruments for data collection, and delineating the data analysis process. The researcher employed artificial intelligence methods to proofread this work during its preparation meticulously. Artificial Intelligence (AI) enhanced the manuscript's quality, coherence, and precision. This methodology is being openly communicated to adhere to ethical norms in research. Leveraging AI for proofreading underscores a commitment to the responsible use of cutting-edge technologies and acknowledges AI's growing role and potential in professional and academic writing. This study aimed to determine the LIS efficiency and data management skills of elementary school teachers in Digos Occidental District, Digos City Division.

2.1. Research Design—The researcher utilized the non-experimental quantitative design that employed a descriptive research method, the primary tool of which was the adapted and modified standardized survey questionnaire, to determine the significant relationship between learner information system utilization and data management skills. A descriptive study was designed to describe the distribution of one or more variables without regard to any causal or another hypothesis. In this study, the researcher employed quantitative descriptive research using correlation analysis. Quantitative research aims to gather measurable data to aid the statistical analysis of a sample population. It was a widely used market research instrument that enabled market research firms to gather and explain the characteristics of a demographic segment. Methods used in descriptive research helped outline the features of the variables being examined. According to Dawson (2019), quantitative research methodologies are meant to create numeric statistics by using survey research to gather data. Through examination methods, qualitative research methodologies examine individuals' behaviors, opinions, and experiences. Diverse numerical data were gathered using various techniques in this kind of research, and the data were then statistically processed to aggregate, compare, or demonstrate correlations between the data. Experiments, organized observations, and surveys are examples of quantitative research methodologies.

2.2. Respondents of the Study—The study's respondents were the ninety (90) elementary teachers of the eleven (11) public schools in Occidental District, Digos City Division, who had been in the service for three years and were deemed permanent employees. The respondents were determined using the Slovin formula. After calculating the population size, the respondents were randomly selected. The researcher chose the respondents equitably. The sample size was obtained using the fishbowl technique. In this technique, the researcher randomly picked out from the fishbowl of all teachers in their respective schools. These teachers were considered the study respondents.

2.3. Research Instrument—The researcher utilized adapted questionnaires from Wegner's studies (2021), which were modified to suit the concept, place, situation, and ideas of the present study. The draft of the research instrument was submitted to the research adviser for comments, suggestions, and recommendations. The final copy of the research survey question-

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naire was validated by the panel of experts for approval. The final revision incorporated all the corrections, comments, and suggestions the experts gave before distribution and administration. The draft of the questionnaire was presented and evaluated by some expert validators. A standard evaluation tool was provided to them to rate, comment, and make suggestions for the improvement and development of the questionnaire. The validation results, together with the draft of the research instrument, were submitted to the research adviser for comments and suggestions. The ambiguous items were deleted; the weak items were strengthened and improved. After correction and refinement, the research instrument was returned to the researcher for finalization. 30 respondents were pilot tested to establish the reliability and validity of the test instrument in Oriental District, Digos City. The respondents were not included in the research survey. The Cronbach alpha score is 0.84, indicating good consistency among the item variables. The questionnaire was designed and then modified to suit the needs of the respondents. The first set was designed to draw out information concerning the extent of LIS utilization in terms of accessibility, transparency, stability, process, and encoding and updating. The second set is designed to draw out data on the data management skills of elementary school teachers in terms of knowledge of data integrity, database planning, data inquiry skills, technology assimilation, and analytical skills in Occidental District, Digos City Division. For the necessity of validation and comprehensive instrument content, the researchers sought a knowledgeable person in the field of comments and suggestions. The questionnaire used a 5-point Likert scale to determine the extent of LIS utilization. The following interpretations of the data were found below:

Scale	**Descriptive Rating**	**Interpretation**
4.21 – 5.00	Very Extensive	The LIS utilization is always manifested.
3.41 – 4.20	Extensive	The LIS utilization is often manifested.
2.61 – 3.40	Moderately Extensive	The LIS utilization is sometimes manifested.
1.80 – 2.60	Less Extensive	The LIS utilization is rarely manifested.
1.00 – 1.79	Not Extensive	The LIS utilization is not manifested.

The 5-point Likert scale was used in this study to determine the extent of data management in schools. The following interpretation of the data was found below:

2.4. Data Gathering Procedure—The researcher followed the following procedures in this study. Permission to conduct the study. The necessary data were gathered through the following procedure: The researcher asked permission from the office of the Schools Division Superintendent of Digos City Division to conduct a face-to-face survey of the teachers in the Occidental District. Likewise, the granted letter of permission from the Schools Division Superintendent was brought to the principals and supervisors of public schools in Occidental District for the arrangement of the conduct of the research study. The arrangement was made with the school principals and supervisors upon observation of safety protocol regarding the conduct of the research. Distribution and retrieval of the survey questionnaire. On November 11, 2023, the graduate student received an endorsement letter from the Dean of the Grad-

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Scale	Descriptive Rating	Interpretation
4.21 – 5.00	Very Extensive	The data management skills of teachers are always manifested.
3.41 – 4.20	Extensive	The data management skills of teachers are often manifested.
2.61 – 3.40	Moderately Extensive	The data management skills of teachers are sometimes manifested.
1.80 – 2.60	Less Extensive	The data management skills of teachers are rarely manifested.
1.00 – 1.79	Not Extensive	The data management skills of teachers are not manifested.

uate School for the division superintendent's approval. On November 16, 2023, a permission letter for the Schools Division Superintendent, the School Principal, and the concerned teacher advisers was prepared for accessible data collection. Upon approval, the researcher administered the research, conducted the survey, and retrieved the data personally. The survey questionnaire was personally handed to the respondents, and once answered, the researcher personally retrieved it. The principals secured a received copy of the letter presented to vouch that the researcher had honestly conducted and collected the data from the participants. Collation and statistical treatment of data. The data gathered was tallied, tabulated, and analyzed on December 2-6, 2023, and interpreted confidentially and accordingly. The study's results were analyzed and interpreted based on its purpose.

2.5. Data Analysis—The following statistical tools were used, and the null hypothesis was tested at a 0.05 significance level. The data were gathered, tallied, and treated using the Statistical Package for Social Sciences. Mean. The weighted arithmetic mean was applied to options of different weights (Calmorin, 1998). This statistical tool will be used in this study to measure the extent of teachers' LIS utilization and data management skills. Pearson's r. The person product-moment of the correlation coefficient was a linear correlation to find the degree of the association of two sets of variables (Calmorin, 1998). This study used this statistical tool to determine the significant relationship between LIS utilization and data management skills of the Digos City Division elementary school teachers. Regression Analysis. The regression analysis was used to determine the domains of LIS utilization that significantly influence the data management skills of elementary school teachers.

3. Results and Discussion

This chapter discusses the problems in this study. They are thoroughly discussed, analyzed, and interpreted under the following headings and sequence: Learner information system utilization and data management skills of teachers in Digos Occidental District.

3.1. Accessibility—Indicated in Table 1 is the extent of Learner information system utilization in terms of Accessibility. The result was focused on the highest and lowest mean, systems response after editing (4.53), and enjoying the digital experience in browsing the system (4.01), which are often manifested and thus extensive. The overall mean rating of the

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extent of Learner information system utilization in terms of accessibility is 4.29, or very extensive. This gives the impression that the extent of Learner information system utilization in terms of accessibility in the Digos City Division is always manifested. This indicates that the schools focus on accessibility to improve Learner information system utilization. The study conducted by Mac Domhaill et al. (2021) supports the idea that school principals believe teachers find the system more accessible after editing student profiles. Browsing the system after data input becomes easy. According to the findings, school principals believe that once teachers have edited student profiles, navigating the system becomes more accessible. This implies that there is a perceived improvement in the usability or functionality of the system after teachers have made their edits.

Table 1. The extent of learner information system utilization in terms of accessibility

No.	Survey Statements	Mean (x)	Descriptive Equivalent
1	Rely on the system's response when accessing the facilities.	4.36	Very Extensive
2	Enjoyed the digital experience of browsing the system.	4.01	Extensive
3	Consume less time in opening the system.	4.08	Extensive
4	Systems response after editing is speedy.	4.53	Very Extensive
5	Experience lesser work in using the system.	4.45	Very Extensive
	Overall Mean	**4.29**	**Very Extensive**

This insight suggests that inputting data into the system, particularly regarding student profiles, might initially present challenges or complexities. However, once teachers have interacted with and edited these profiles, the system becomes more user-friendly and easier to navigate for all stakeholders, including school principals. This was supported by Aboagye et al. (2021), who identified the need for internet connections among teachers. One of the highlights was the necessity for internet access, leading to sufficient when accessing online data. This situation often compelled teachers and school administrators to quickly access the internet access to upload data, as noted by Read and Atinc (2017). The researchers identified that teachers' need for internet connections underscores technology's integral role in modern education. Internet access enables teachers to utilize online resources, communicate with students and colleagues, and access administrative systems efficiently. The necessity for internet access highlights challenges when connectivity is unreliable or unavailable. Teachers and administrators may encounter delays and difficulties when accessing essential data or performing administrative tasks online, impacting productivity and efficiency.

3.2. Transparency—Meanwhile, Table 2 presents the extent of learner information system utilization in terms of transparency of Digos City, Division schools. The result is focused on

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the highest and lowest mean ratings, which can look at the overall appeal of the system's environment (4.50) and easily access the system utilities and facilities (3.99). The results register an overall mean of 4.26 in terms of transparency, which is very extensive. These results suggest that LIS utilization is always manifested and shows effective utilization in data management.

Table 2. The extent of learner information system utilization in terms of transparency

No.	Survey Statements	Mean (x)	Descriptive Equivalent
1	Can easily access the system utilities and facilities.	3.99	Extensive
2	Given reliable and accurate data.	4.45	Very Extensive
3	Have an effective manner of complying with the system.	4.06	Extensive
4	We can look at the overall appeal of the system's environment.	4.50	Very Extensive
5	Can access accurate data from the coordinator.	4.30	Very Extensive
	Overall Mean	**4.26**	**Very Extensive**

This aligns with Winkelmes' (2023) findings that LIS programs contribute to transparency. By creating a more open environment, the system can improve students' overall appeal of the learning experience. Notably, transparent teaching and learning can enhance the effectiveness of these large-scale programs, which often take time to show results. This transparent system can address many challenges teachers face in promoting student success, such as unequal preparation, motivation, time management, and resource access. The researcher emphasizes that transparency in teaching and learning can foster a more inclusive and equitable educational environment. By clearly articulating learning objectives, expectations, and assessment criteria, educators can help mitigate challenges stemming from unequal preparation among students. This transparency provides all students with a clear understanding of what is expected of them and how they can succeed in the program, regardless of their background or prior experiences. Moreover, the study corresponds with the Department of Education's (2022) claim that ensuring the accuracy and ease of access to educational systems is crucial for the optimal functionality of facilities and utilities in the education sector. This database provides comprehensive insight into the resources and assistance necessary to provide quality primary education to every student (Department of Education, 2022). Indeed, those findings can be related to the issues in public schools wherein there are incidents of corruption and inaccuracies in data reporting that compromise the goals and objectives of the management information system in promoting transparency, informed decision-making, and empowerment of the educational system. It creates difficulties in effectively using data to improve academic programs, projects, and interventions for schools and learners.

3.3. Stability—Moreover, Table 3 presents the extent of learner information system utilization in Digos City, Division regarding Stability. The mean score of capacity to manipulate the system is (4.55) the highest. Meanwhile, a speedy disposition of my action is (3.51), which is the lowest. The overall mean rating of (4.16)

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the extent of learner information system utilization in terms of stability is extensive. This indicates that the schools often focus on stability to develop learner information system utilization.

Table 3. The extent of learner information system utilization in terms of Stability

No.	Survey Statements	Mean (x)	Descriptive Equivalent
1	You can access it continuously regardless of time.	4.50	Very Extensive
2	Have a speedy disposition of the action I am taking.	3.51	Extensive
3	Confident of the security of the data encoded.	3.83	Extensive
4	Have the capacity to manipulate the system.	4.55	Very Extensive
5	Can generate reports from the system efficiently.	4.41	Very Extensive
	Overall Mean	**4.16**	**Extensive**

The result aligns with Contreras' (2019) findings that accuracy in data processing is critical for all institutions, including educational ones. A structured information system is necessary to efficiently process and answer data related to learner information. An effective information system can build trust among consumers and ensure the proper functioning of the education sector. However, it is essential to acknowledge that such systems also can be manipulated by unauthorized users, highlighting the need for robust security measures. This can lead to better decision-making and policy formulation, which are essential for the growth and development of schools. However, acknowledging the potential risks associated with information systems, such as unauthorized access and data manipulation, is crucial. Robust security measures are essential to safeguard sensitive information and protect the integrity of educational systems. By prioritizing security alongside accuracy and efficiency, educational institutions can mitigate risks and ensure the proper functioning of their information systems. This study aligns with Radojčić et al. (2022) in highlighting the importance of learner information systems. These platforms provide a wealth of teaching and learning tools, becoming essential for educators and students. Teachers depend on the stability and reliability of these systems to manage classrooms effectively, deliver instruction, and accurately assess student progress. The insights provided by both studies underscore the pivotal role of learner information systems in modern education. By leveraging the capabilities of LIS, educators can enhance their teaching practices, foster student engagement, and support student success. Additionally, investments in the stability and reliability of LIS are essential to ensuring the effectiveness and efficiency of educational processes within classrooms and learning environments.

3.4. Process—Table 4 shows the extent of learner information system utilization in the process. The presentation concentrates on the indicators with the rating obtained from highest to the least: assured processing of data using the system (4.40) and effective management in managing housekeeping issues (3.75). The overall mean rating is 4.12 or extensive. This means

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that the extent of learner information system utilization in schools is often manifested. This indicates that schools often focus on processes to improve learner information system utilization.

Table 4. The extent of learner information system utilization in terms of process

No.	Survey Statements	Mean (x)	Descriptive Equivalent
1	Assured of processing of data using the system.	4.40	Very Extensive
2	Can have easy access in requesting for editing data.	4.13	Extensive
3	Received a reply for approval of pending issues quickly.	4.23	Very Extensive
4	Can manage housekeeping issues.	3.75	Extensive
5	Consumed in the usage of the system.	4.11	Extensive
	Overall Mean	**4.12**	**Extensive**

Based on the tabulated results, we agree with Agayon et al. (2022) 's findings that effective data processing will allow for smoother and more reliable data management experiences for all stakeholders and could provide timely submission of the required data. Efficient data processing contributes to smoother operations within the educational system. Data processing quickly and accurately reduces the likelihood of delays or errors in administrative tasks, such as student record management, assessment processing, and reporting. The researcher emphasizes that reliable data management experiences foster trust and confidence among stakeholders. When data is managed effectively, stakeholders can rely on the accuracy and integrity of the system's information. This promotes transparency, accountability, and informed decision-making within the educational context, ultimately enhancing the system's overall functioning. However, it is essential to let teachers know their duties and responsibilities in data processing for an online system so they will value the importance of those variables for future use. (Yuvienco, 2019). Furthermore, the study's findings conform with the report of Alipala and Jerusalem (2019), which states that issues with the housekeeping of data at the end of the school year are something LIS coordinators are looking into. Housekeeping of data is necessary to update learners' profiles and to avoid misinformation. These insights emphasize by the researcher the critical role of clear communication, training, and regular maintenance in optimizing data management practices within educational institutions. By empowering teachers with the necessary knowledge and skills and implementing robust housekeeping procedures, educational systems can ensure the integrity and reliability of their data, ultimately enhancing the effectiveness of decision-making processes and improving student outcomes.

3.5. Encoding and updating—Table 5 presents the extent of learner information system utilization in encoding and updating. The result is focused on the highest and lowest mean ratings of indicators, which are as follows: We can rely on our ICT focal person (4.53) and have a strong internet connection (4.0). The study results register that the overall mean rating of full

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implementation is 4.24 or very extensive. This means that the schools always manifest the utilization of learner information systems. This indicates that schools are continuously focusing on encoding and updating to improve learner information system utilization.

Table 5. The extent of learner information system utilization in terms of encoding and updating

No.	Survey Statements	Mean (x)	Descriptive Equivalent
1	Have a strong internet connection.	4.00	Extensive
2	Can rely on our ICT focal person.	4.53	Very Extensive
3	Updated with enrolment data.	4.33	Very Extensive
4	Have comprehensive information on editing the system.	4.05	Extensive
5	Can access documents necessary for reference in encoding data.	4.31	Very Extensive
	Overall Mean	**4.24**	**Very Extensive**

As Callo and Yazon (2020) suggest, technology has significantly impacted how we teach and learn, both in workplaces and at home. Flexible learning approaches require students to develop new skills, such as retrieving information from learning management systems, processing data, and thinking logically. In this evolving educational landscape, having a reliable ICT focal person to support and address technical challenges becomes even more crucial. Moreover, a reliable ICT focal person assumes heightened importance in this dynamic educational environment. This individual is a cornerstone for providing technical support and addressing challenges using Information and Communication Technology (ICT) tools. Their expertise ensures the smooth integration of technology into educational practices, facilitating seamless teaching and learning experiences for educators and students. A recent study by Correani et al. (2020) highlights the importance of internet connectivity. The authors point to the exponential growth of digital technologies and the ever-increasing mountain of data collected daily by devices and applications. This digital surge forces organizations to rethink their corporate architecture, the foundation on which they create and deliver value. With a strong internet connection, teachers can explore innovative solutions to navigate this complex and information-rich environment. In the educational context, a robust internet connection is essential for teachers to harness the vast array of innovative solutions available to navigate this complex and information-rich environment. With reliable internet access, educators can explore and leverage various digital tools, resources, and platforms to enhance teaching and learning experiences. These tools may include online learning platforms, educational apps, multimedia content, virtual reality simulations, and collaborative tools.

3.6. The summary of the extent of Learner Information System efficiency—Table 6 summarizes the extent of learner information system utilization in Digos City Division in terms of its indicators, namely accessibility, transparency, stability, process, and encoding and updating among schools in Digos City Division. The result is focused on the highest mean score for accessibility (4.28) and the lowest mean rating

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for process (4.12). The overall mean rating of 4.21 suggests that schools' learner information system efficiency is often manifested, thus extensive among schools in the Division of Digos City.

Table 6. Summary of the extent of learner information system utilization

No.	Indicators	Mean (x)	Descriptive Equivalent
1	Accessibility	4.28	Very Extensive
2	Transparency	4.26	Very Extensive
3	Stability	4.16	Extensive
4	Process	4.12	Extensive
5	Encoding and updating	4.24	Very Extensive
	Overall Mean	**4.21**	**Very Extensive**

The finding affirmed Mateo's (2018) point that technology accessibility for accessing data facilities in schools provides an appropriate mechanism for improvement. Even if teachers face data management issues, the time spent retrieving data is meaningful for them. The researcher emphasizes that technology's accessibility enables teachers to leverage data-driven insights to continuously improve their instructional practices. By analyzing student performance data, identifying areas for growth, and implementing targeted interventions, educators can personalize instruction, address learning gaps, and optimize student outcomes. The data in Table 6 corroborated what Decors and Generator (2021) pointed out: the security of the data encoded and the teachers' capacity to manipulate the system. The school system's EBEIS/LIS provides a data analysis and visualization platform to help school managers understand complex relationships among data and make informed decisions. The finding, therefore, shows that DepEd improved the processes of LIS in schools, as this will play a critical role in ensuring the success of the EBEIS/LIS system. Learning Information System enables learners to take curriculum-based assessments at the computer whenever the learner and/or teacher feel they are ready. The LIS delivers assessment adaptively, investigating only the relevant areas chosen for the individual learner. Sometimes, the LIS responds to each learner so that only items that are neither too hard nor too easy and discriminate well are presented. This greatly shortens the time to self-assess and protects the learner from any sense of struggle or failure.

3.7. Data Management skills in terms of Knowledge of Data Integrity—Table 7 displays data on teachers' data management skills in terms of knowledge of data integrity in schools. The presentation is focused on the highest and lowest mean ratings obtained, which are as follows: Effectively manages and organizes data (4.12) and knowledge about different techniques of gathering data, such as direct observation, student evaluations, surveys, and interviews(3.50). All items in this indicator yield ratings of 3.88, with a descriptive equivalent of extensive, which means that teachers' data management skills are often manifested.

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Table 7. The extent of data management skills in terms of knowledge of data integrity

No.	Statement	Mean (x)	Descriptive Equivalent
1	Guarantee that student records, grades and evaluations are precisely documented and upheld	3.68	Extensive
2	Effectively manages and organizes data	4.12	Extensive
3	Adhere to privacy regulations and school policies to protect student data	4.03	Extensive
4	Regularly update student records and assessment	4.08	Extensive
5	Knowledgeable about different techniques of gathering data, such as direct observation, student evaluations, surveys, and interviews	3.50	Extensive
	Overall Mean	**3.88**	**Extensive**

In corroboration, Lestiyanawati and Widyantoro (2020) stated that teachers exhibited a heightened awareness of the importance of organizing data to ensure the accuracy and security of student records. With the increasing integration of technology in education, educators recognized the significance of maintaining precise student data for various educational purposes, including assessment, reporting, and communication with parents and stakeholders. They understood the necessity of safeguarding student information to comply with privacy regulations. The researcher's heightened awareness among teachers underscores the evolving role of data management in ensuring student records' accuracy, security, and integrity. As educational institutions increasingly rely on technology for various administrative and instructional purposes, educators recognize the critical role that organized and accurate student data facilitates effective teaching and learning practices. Furthermore, the World Bank (2019) reported that the importance of knowledge regarding data-gathering strategies underscores the foundational role of data collection methodologies in informing decision-making processes and facilitating evidence-based practices in education. Educators and administrators must possess the necessary skills and knowledge to implement effective data-gathering strategies, ensuring that relevant data is collected efficiently and accurately to support various educational initiatives and policy decisions. The researcher provided insight that underscores the multifaceted nature of data management in education and the importance of comprehensive data management solutions, such as LIS, in supporting efficient educational practices. By prioritizing knowledge of data-gathering strategies, efficient information sharing, and integrating library management functionalities, academic institutions can enhance their capacity to collect, manage, and utilize data effectively to support student learning, administrative processes, and organizational decision-making.

3.8. Database Planning—As shown in Table 8, data-on-data management skills are used in database planning. The presentation concentrates on the indicators with the rating obtained from highest to the least: Capacitated in the system's operation and explained the processes and guidelines for the system registering, enrolling, and updating learner profiles (3.09) and ensuring accountability and transparency (2.03). All

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items in this indicator yield an overall mean of 2.49. This implied that the teachers showed less means that the data management skill of teacher was rarely manifested

Table 8. The extent of data management skills in terms of Database Planning

No.	Statement	Mean (x)	Descriptive Equivalent
1	Capacitated in the system's operation, and explained the processes and guidelines for the system registering, enrolling, and updating learner profiles.	3.09	Moderately Extensive
2	Assist in creating and maintaining user accounts for the different information systems.	2.39	Less Extensive
3	Maximize in utilizing the available functionalities of the portal.	2.04	Less Extensive
4	Keep an accurate and reliable registry of learners.	2.91	Moderately Extensive
	Ensure accountability and transparency.	2.03	Less Extensive
	Overall Mean	**2.49**	**Less Extensive**

This finding conforms to Balinas's (2018) assumption that teachers can manipulate the data system. The system provides school managers with a wealth of data and information to help inform their decision-making processes. Tracking learners, schools, and learning centers provides valuable insights into the education landscape and helps identify areas of need and opportunity. Insight from the researcher on the availability of comprehensive data within the system provides school managers with a wealth of information to inform their decision-making processes. By tracking learners, schools, and learning centers, the system offers valuable insights into various aspects of the education landscape, including student performance, attendance patterns, resource allocation, and program effectiveness. This enables school managers to identify areas of need and opportunity, formulate strategic initiatives, and allocate resources effectively to address identified challenges and capitalize on emerging opportunities. Holding teachers responsible for information literacy ensures that their classrooms can navigate information effectively, leading to successful lesson outcomes (Sani Musa, 2019). Transparency offers teachers valuable chances to enhance their information literacy skills, seek guidance from experts and colleagues, and engage in collaborative efforts within the field. This researcher emphasizes that holding teachers accountable for information literacy underscores the importance of equipping students with the skills to effectively navigate the vast information available. In today's digital age, where information is abundant and easily accessible, teaching students how to evaluate and use information critically is essential for their academic success and lifelong learning. Moreover, transparency provides teachers with valuable op-

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portunities to enhance their information literacy skills. By being transparent about their teaching practices, resources, and decision-making processes, teachers can learn from experts and colleagues, seek guidance on best practices, and collaborate to improve their instructional methods.

3.9. Data Inquiry Skills—Shown in Table 9 are the data-on-data management skills in terms of data inquiry skills. The presentation concentrates on the indicators with the rating obtained from highest to the least: learning to use the system quickly (3.09) and using interface and procedures for achieving quality data as the lowest mean rating of (2.03). Conversely, two items under this indicator garnered mean results with the descriptive equivalent of less extensive, which means that data management skills are rarely manifested.

Table 9. The extent of data management skills in terms of Data Inquiry Skills

No.	Statement	Mean (x)	Descriptive Equivalent
1	Learn to use the system quickly.	3.09	Moderately Extensive
2	Organize the information on the screen.	2.39	Less Extensive
3	Maintain a safe, secure, and easy-to-use system for learners' information systems.	2.04	Less Extensive
4	Mentor experienced and inexperienced colleagues in using the system.	2.91	Moderately Extensive
	Make use of the interface and procedures for achieving quality data.	2.03	Less Extensive
	Overall Mean	**2.49**	**Less Extensive**

This study references what Achuonye and Nwiyi (2021) stated: Learning any system quickly requires good resources, and this information must be clear, comprehensive, and current. A well-organized system discards outdated information when it is no longer needed and makes everything easy to find when needed. This makes it possible for the organization to meet the requirements for managing the educational system, learning it, and navigating it effectively. The insights underscore the critical role of clear, comprehensive, and current resources in supporting educational systems' learning, navigation, and management. By prioritizing the organization and maintenance of information within the system, academic institutions can empower stakeholders to make informed decisions, optimize system usage, and ultimately achieve their educational goals more effectively. Adegbesan et al. (2020) support this fact. Efficient planning and control within an educational institution rely heavily on leveraging established interfaces and procedures to ensure high-quality data. These interfaces and procedures act as a framework for collecting, storing, and managing various types of data and information across the institution's diverse departments and cultures. The statement emphasizes the reliance on established interfaces and procedures and underscores the importance

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of standardized processes in ensuring consistency and reliability in data collection, storage, and management. By establishing clear frameworks and protocols, educational institutions can streamline data-related tasks, minimize errors, and ensure the integrity of the information collected across diverse departments and cultural contexts.

3.10. Technology Assimilation—Table 10 shows the data management skills of teachers in terms of technology assimilation. The presentation is focused on the highest and lowest mean ratings obtained, which are as follows: Have an excellent internet connection and can quickly generate reports with a mean of (3.31) and keep adequate records of learners, which can be accessed anytime with a mean rating of (2.39). The overall mean is approximately 2.92, with the descriptive equivalent of moderately extensive. This means that teachers' technology assimilation skills are sometimes manifested. However, some respondents were not able to adapt to challenging situations.

Table 10. The extent of data management skills in terms of Technology Assimilation

No.	Statement	Mean (x)	Descriptive Equivalent
1	Have an excellent internet connection and can quickly generate reports.	3.31	Moderately Extensive
2	Maintain accurate data inputs to the system.	3.09	Moderately Extensive
3	Have poor generation of reports due to system error.	2.91	Moderately Extensive
4	Keep effective records of learners, which can be accessed anytime.	2.39	Moderately Extensive
	Have no issue in terms of keeping school records.	2.90	Moderately Extensive
	Overall Mean	**2.92**	**Moderately Extensive**

This finding conforms to what (Watson Rockinson Szaokiw, 2021). Having an excellent internet connection and being able to generate reports quickly is significantly associated with teachers' perspectives regarding the nature of teaching and learning in a classroom, as indicated by (Watson Rockinson Szaokiw, 2021). Considering this, innovative educational strategies suggest that comprehending technology integration can only occur effectively when teachers' perspectives regarding technology use are considered. The insights highlighted the importance of considering teachers' perspectives on technology use, internet connectivity, and report generation capabilities in shaping practical technology integration efforts in educational settings. By acknowledging and addressing teachers' needs and preferences, academic institutions can enhance the effectiveness of technology integration initiatives and promote positive learning outcomes for students. Keeping adequate records of learners, which can be accessed anytime, is significantly associated with teachers' perspectives regarding the nature of teaching and learning in a classroom, as indicated by most of the studies of Hussain (2018) and Thaheem et al. (2021). Considering this, innovative educational strategies sug-

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gest that comprehending technology integration can only occur effectively when teachers' perspectives regarding keeping adequate records of learners, which can be accessed anytime, are considered. This research highlights the transformative impact of keeping adequate records of learners that can be accessed anytime in the teaching and learning processes. By prioritizing data management and accessibility, educational institutions can empower teachers to make informed decisions, personalize instruction, and drive positive outcomes for students.

3.11. Analytical Skills—Table 11 further presents the data on the analytical skills of teachers with the highest and lowest mean scores, always having a stable internet connection with a mean of (3.31) and attending training of teachers regarding utilizing LIS with a mean rating of (2.39). This implies that the analytical skills of teachers can be enhanced with a more stable internet connection. Collectively, the overall mean of 2.75 with the descriptive equivalent of moderately extensive means that the data management skill of teachers was sometimes manifested.

Table 11. The extent of data management skills in terms of analytical skills

No.	Statement	Mean (x)	Descriptive Equivalent
1	Have a stable internet connection always.	3.31	Moderately Extensive
2	Have providence of ICT equipment.	3.09	Moderately Extensive
3	Assisted by a permanent LIS coordinator.	2.91	Moderately Extensive
4	Attending Training of teachers regarding the utilization of LIS.	2.39	Less Extensive
	Have provision of funds for communication expenses.	2.40	Less Extensive
	Overall Mean	**2.75**	**Moderately Extensive**

The finding affirmed what Phurikultong and Kantathanawat (2022) stated: having a stable internet connection is always a quality demanded in most institutions that need ICT equipment. Providing employment opportunities is necessary to prepare them to acquire this skill and use it effectively in the learning process. The insights underscore the critical importance of having a stable internet connection as a prerequisite skill in today's technology-driven society. By recognizing and prioritizing this skill in educational and employment contexts, institutions can empower individuals to succeed in an increasingly digitalized world and capitalize on emerging opportunities in the global workforce. Attending Training of teachers regarding the utilization of LIS outcomes allows educators to master population concepts, be skilled in solving problems related to population estimation, and make appropriate decisions based on data and information analysis both independently and in groups. Simulation activities are one way of gaining an understanding of concepts by developing thinking skills based on experience, changing abstract concepts into concrete forms, and enabling interaction, response, and communication so that they are easier to remember (Inayah Masruroh, 2021) (Makiyah et al.,

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2019). This approach fosters critical thinking skills and promotes active engagement, interaction, and communication among educators, ultimately enhancing their effectiveness in teaching and facilitating student learning. Overall, the insight highlights the importance of ongoing professional development opportunities, such as LIS training, in equipping educators with the necessary skills and tools to promote meaningful learning experiences in the classroom.

3.12. Summary of the Extent of Data Management Skills of Teachers—Table 12 summarizes teachers' data management skills, revealing that the overall mean is (2.90). The result is knowledge of data integrity (3.88), which has the highest mean rating, Database Planning (2.49), and Data Inquiry Skills (2.49) the lowest. One of these indicators has a descriptive equivalent of extensive. However, most of the indicators have a descriptive equivalent of moderately extensive. This implies that the data management of the respondents was able to adapt to service quality in the school by dealing with the students, parents, and the school community.

Table 12. The summary of the extent of data management skills of elementary school teachers

Indicators	**Mean (x)**	**Descriptive Equivalent**
Knowledge of Data Integrity	3.88	Extensive
Database Planning	2.49	Less Extensive
Data Inquiry Skills	2.49	Less Extensive
Technology Assimilation	2.92	Moderately Extensive
Analytical Skills	2.75	Moderately Extensive
Overall Mean	**2.90**	**Moderately Extensive**

The data revealed that the teachers demonstrated substantial knowledge, attitude, and data management skills in utilizing school data management. In terms of technology assimilation and analytical skills, the teachers moderately manifest them. This finding was corroborated by Jimenez's (2021) data integrity. Providing printed and digital resources can ensure all employees can access the information they need in the best format. Providing manuals and guidelines, whether in print or electronic form, can be essential to supporting employee knowledge and performance in accessing and using systems effectively. Furthermore, the research emphasizes the significance of providing both printed and digital resources to ensure accessibility and accommodate diverse preferences among staff members. Manuals and guidelines, whether in print or electronic form, play a crucial role in supporting employee knowledge and performance in effectively accessing and utilizing systems. This finding conforms with the assumption of Balinas (2018) that the teachers have the skills to manipulate the data system. It provides school managers with a wealth of data and information to help inform their decision-making processes. By tracking learners, schools, and learning centers, the system provides valuable insights into the education landscape and helps identify areas of need and opportunity. Insight from the researcher on the availability of comprehensive data within the system provides school managers with a wealth of information to inform their decision-making processes. By tracking learners, schools, and learning centers, the system offers valuable insights into various

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aspects of the education landscape, including student performance, attendance patterns, resource allocation, and program effectiveness. This enables school managers to identify areas of need and opportunity, formulate strategic initiatives, and allocate resources effectively to address identified challenges and capitalize on emerging opportunities This study has a reference to what Achuonye Nwiyi (2021) that learning any system quickly is having good resources, and it is required that this information be clear, comprehensive, and current. A well-organized system discards outdated information when it is no longer needed and makes everything easy to find when needed. This makes it possible for the organization to meet the necessary manage the educational system as well as to learn the system and navigate it effectively. the insights underscore the critical role of clear, comprehensive, and current resources in supporting the learning, navigation, and management of educational systems. By prioritizing the organization and maintenance of information within the system, educational institutions can empower stakeholders to make informed decisions, optimize system usage, and ultimately achieve their educational goals more effectively.

3.13. The relationship between the extent of learner information—system efficiency and data management skills of teachers

Table 13 shows the data about the significant relationship between learner information system utilization and the data management skills of teachers. Analyzing the data by Pearson Product –Moment Correlation Coefficient or Pearson r, the results are: the computed r-value for learner information system utilization of schools versus data management skills of teacher is 0.63 which denotes an almost substantial relationship or definite relationship. While computing the significant difference of R-values, it is found at 4.42 with a probability value of 0.013, which is less than the 0.05 level of significance. Hence, there is a significant relationship between learner information system utilization and data management skills of elementary school teachers.

Table 13. The significant relationship between learner information system efficiency and data management skills of elementary school teachers

Variables	**r-values**	**Computed t-value**	**P value**	**Remarks/Decision**
Learner information system utilization (x)	0.63	4.42	0.014	Reject
Data management skills of teachers (y)				

Note: Significance when P < 0.05

The greater the learner information system utilization of schools, the more excellent the data management skills of elementary school teachers. Hence, a positive correlation occurs when an increase in two variables decreases simultaneously. This is an example of a linear correlation or straight-line relationship between two variables. A correlation can range between -1 (perfect negative relationship) and +1 (perfect positive relationship), with 0 indicating no straight-line relationship. The study's findings were aligned with Wegner, Guiliano, and Hertel's (1985) Theory of Transactive Memory System for the cognitive interaction between intimate data relationships. The theory is conceptualized as an information processing system that

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integrates personal memory and team communication processes. In schools, the transactive memory system is manifested by the division and cooperation of cognitive labor in coding, storage, retrieval, and communication of information from different fields. The findings affirmed with Decors and Generator (2021) that the LIS system provides a data analysis and visualization platform to help teachers understand complex relationships among data and make informed decisions with regards to learners' data and other school-related information and data. The integration of an LIS in educational settings can significantly enhance teachers' data management skills by providing them with the tools, training, and opportunities to handle data effectively. This, in turn, supports better educational outcomes through informed decision-making and efficient data handling.

3.14. Significant Influence of Learner Information System Utilization of data management skills—Table 14 depicts the regression coefficient analysis of the significant influence on learner information system utilization, which significantly influences the data management skills of elementary school teachers. All indicators of learner information system utilization, Knowledge of Data Integrity (3.88), Technology Assimilation (2.92), Analytical Skills (2.75), Data Inquiry Skills (2.49), and Database Planning (2.49) indicate statistically significant influence on the data management skills of elementary school teachers in Digos City Division. This gives empirical evidence to show that the indicators of learner information system utilization directly influence the data management skills of elementary school teachers. Meanwhile, the R2 value of 0.876 suggests that learner information system utilization accounts for 87.6 percent of schools' data management variance. This provides empirical evidence that the indicators enumerated under data management of schools in the Digos City Division can account for and explain the variability of learner information system utilization. In addition, the F-value shows all the sums of squares, with regression being the model and Residual being the error. The F-value (116.355) and F-statistic are significant at p<0.001, which tells that the model is significantly a better predictor of the data management skills of teachers. Accessibility, stability, and encoding and updating significantly influence the data management skills of teachers.

Table 14. Regression coefficient analysis on learner information system utilization that significantly influences the data management skills of teachers

Model	Unstandardized	Standard Error	Standardized	t	p	Decision
H (Intercept)	3.356	0.056		60.083	< .001	
H (Intercept)	0.167	0.157		1.069	0.287	
Accessibility	0.086	0.091	0.100	0.949	0.000	Reject
Transparency	0.132	0.092	0.158	1.444	0.152	Accept
Stability	0.203	0.082	0.257	2.472	0.015	Reject
Process	0.337	0.073	0.425	4.638	0.167	Accept
Encoding and updating	0.087	0.092	0.100	0.898	0.014	Reject
R^2 = 0.876						
F-value = 116.355						
p-value = < 0.001						

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The regression coefficients of transparency and probability have probability values greater than the accepted region with these indicators. Therefore, these two domains of learner information system utilization do not significantly influence teachers' data management skills. In turn, Read (2017) posited that no compromises were made at the beginning of the E-BEIS implementation aside from the lag time experienced when data is accessed online; teachers' data inquiry skills affect their data management skills. Enhancing their skills in knowing the data needed will make them more skilled in managing learners' data. In this case, teachers took the initiative to satisfy this technological lag. The absence of information technology gadgets like internet connection, computer hardware, etc., did not hinder their duties and functions. ICT facilities can help to ensure compliance with legal and regulatory requirements for record-keeping, such as retention periods and privacy regulations.

4. Conclusions and Recommendations

This chapter encapsulates the crucial findings, draws insightful conclusions, and provides valuable recommendations. The findings, derived from the comprehensive investigation and questionnaires, significantly contribute to understanding the impact of learner information system utilization on teachers' data management skills. Based on these findings, the conclusions shed light on teachers' current state of data management skills. The recommendations aim to enhance these skills, improving the overall quality of education. This study employed a descriptive correlational approach, a widely accepted method in educational research. The instruments used were standardized survey questionnaires, which the researcher carefully modified and rigorously evaluated by the panel committee. This robust methodology ensures the reliability and validity of the study's findings. Based on the analyses and interpretations of the data gathered, the following findings were drawn according to the sequence of the study's objectives. The extent of learner information system utilization in terms of its indicators, namely, accessibility, transparency, stability, process, encoding, and updating, has an overall mean of (4.21) very extensive. This suggests that the learner of information system utilization is always manifested, thus very extensive among schools in Digos Occidental District. The extent of data management skills in terms of knowledge of data Integrity, database planning, data inquiry skills, technology assimilation, and Analytical skills has an overall mean rating of (2.90) moderately extensive. This suggests that data management skills sometimes manifest among the teachers in the Digos Occidental District. Furthermore, Pearson's correlation showed a significant correlation between the extent of learner information system utilization ($r=0.745$; $p<.001$). The F-value (116.355) and F-statistics were significant at $p<.001$, which shows that the model is significantly a better predictor of data management skills. Results indicated that there was sufficient evidence to reject the null hypothesis. Thus, there was a significant relationship between the two variables. Finally, accessibility ($p< 0.000$), stability ($p< 0.015$), and encoding and updating ($p<0.014$), the null hypothesis is three domains of LIS utilization is rejected. Thus, it significantly influences data management skills. However, transparency ($p<0.152$) and process ($p<0.1670$, means that the probability value is less than the acceptance region with these two indicators. With that data, the null hypothesis is accepted, and therefore, these two domains of LIS utilization do not significantly influence data management skills.

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4.1. Conclusions—The conclusions of the study are as follows: The extent of learner information system utilization in terms of its indicators, namely, accessibility, transparency, stability, process, encoding, and updating, was pervasive. The extent of data management skills in terms of knowledge of data Integrity, database planning, data inquiry skills, technology assimilation, and Analytical skills was moderately extensive. A significant relationship exists between learner information system utilization and teachers' data management skills. Results indicated sufficient evidence to reject the null hypothesis. Thus, there was a significant relationship between the two variables. Teachers' use of learner information systems significantly influences their data management skills. However, transparency and process indicators mean that the probability value was less than the acceptance region with these two indicators. With that data, the null hypothesis is accepted, and therefore, these two domains of LIS utilization do not significantly influence data management skills.

4.2. Recommendations—With the presented conclusions of the study, the following are recommendations to wit; DepEd officials may provide more training and seminars to capacitate LIS coordinators and advisers. The school heads may capacitate themselves with knowledge and skills to assist the teachers. Schools must continue to look for ways to strengthen their support in acquiring internet connectivity by partnering with internet service providers and urging them to optimize the stability of their connection, especially in remote areas and LIS coordinators may provide a streamlined copy of the EBEIS/LIS manual for classroom advisers to use as reference material to facilitate proper access and improve system usability. They may create additional portals connected to the EBEIS, much like with LIS, so that a different coordinator will focus on each portal's updates. This move can boost data collection and provide well-rounded information linked within the EBEIS environment. Teachers may attend professional development training and seminars to gain knowledge and skills to enhance their capability in managing data in schools. They perform well when satisfied with the EBEIS/LIS data processes. Mo, they can still comply with their functions and responsibilities in online data management regardless of the challenges in ICT facilities and with less guidance from their coordinators. Learners may extract information from this study and be provided with knowledge and information regarding their school status. Their academic status and personal relationships with other learners and the whole school community may also guide them. Future researchers may replicate this study, which will serve as a basis for additional information about the level of satisfaction with the schools' learner information system efficiency.

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