

**Perceived Implementation of Enhanced Basic Education Information System-Learners Information System (EBEIS-LIS): The Case of Elementary Teachers in Eastern Samar, Philippines**

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**ABSTRACT**

*This study assessed the implementation of the Enhanced Basic Education Information System-Learners Information System (EBEIS-LIS) in the San Julian district, province of Eastern Samar during the school year 2020-2021. The data concerning teachers' perceived extent of EBEIS-LIS implementation were collected via a validated researcher-made survey instrument and was analyzed using median. Findings revealed that most of the respondents perceived a high extent of EBEIS-LIS implementation in terms of manpower requirement, methods of employment, and materials for implementation. Hence, the researcher recommends the conduct of an extensive training program appropriate to teachers' teaching experience especially in handling their respective school's information system.*

**Keywords:** *Enhanced Basic Education; Information System-Learners; Information System; Perceived extent of implementation; Teaching experience.*

**BACKGROUND OF THE STUDY**

Information technologies and other aspects of digital culture have changed the ways people live, work, play, and learn in the 21st century (Ayeri & Ebong, 2013a). An article published by ECPI University (2020), articulated the importance of such technology, especially in the fast delivery of the necessary information, aiding in better organizational decisions and courses of action. According to Demir (2006), information technologies such as information systems serve as the bloodline in the continuous advancement of information exchange among many countries worldwide. The top reasons for using information systems are to improve work effectiveness by processing information, managerial effectiveness by meeting information needs, and competitive superiority by directing strategies (Yuen, Law, & Wong, 2003). In the context of education, some academic institutions utilized information systems to “digitalize their services like admission, evaluation, examination, provisional mark memo, submission of assignments, and even attendance of students and teachers” (Sahebrao & Bajranglal, 2019, p. 23). In general, the use of information systems provides a robust mechanism among schools to rethink and redesign their educational systems and processes, given the fast processing of data which will lead to quality education.

Unfortunately, despite these extensive efforts to support teachers by integrating information and communication technologies (ICT) into their classroom practice, several researchers have reported the enormous challenges teachers face in using IT-based tools (Pozas & Letzel, 2021). In addition, Sangrà and González-Sanmamed (2010) unveiled that most educators are less confident in utilizing ICT tools to promote the development of more complex educational processes in the documentation, evaluation, and organization of data. Similarly, Robertson (2003) reported that “successful schools represented only a very

small fraction with available electronic facilities and that most teachers are left largely on their own as they struggle to integrate technology into their curricula” (p.323). The findings of Robertson (2003) highlighted the role of teachers and administrators in gaining adequate guidance and relevant opportunities for exploration and full implementation of ICT tools in the school. Hence, obtaining the skills and competence in gathering, processing, transmitting, and storing of information are essential competencies of teachers for the quality of tasks performed in the organization.

The annual learners’ registration and encoding of learners’ information have been two of the most common problems in the school management system, which are rooted in the schools’ paper-based processes (Ebong & Ayeni, 2013; Anjani, 2019). Other factors identified by Hanior, Achor, and Gire (2019) include fire outbreaks, flooding, pests and rodents, and improper storage, among others. All these are related to poor job discharge of the assigned personnel. In the Philippines’ public basic education setting, the registering and updating of students’ records is mostly assigned to teaching personnel, who may be a subject teacher or a class adviser, due to the minimal number of non-teaching staff, especially among barangay or small-size schools. These problems directed the Department of Education to develop an electronic information system that manages schools’ data, including learners’ personal information up to schools’ infrastructure and resources, widely known as the Enhanced Basic Education Information System or EBEIS (Department of Education, 2015). One of its most utilized facilities is the Learners’ Information System (LIS) where teachers can encode learners’ details and update their annual statuses. Unfortunately, Llego (2018) mentioned that the most misused facility is noted for erroneous data entries among teachers/LIS in-charge.

Notably, the Asian Development Bank (2020), in their review of the country’s monitoring and evaluation system, revealed that “human resources and technical capacity are not aligned with reporting requirements and that DepEd’s institutional capacity is inadequate for the development and maintenance of various information systems” (p. 5). Identified as a fifth-class municipality in the province of Eastern Samar, the San Julian district is one of the school districts in the schools division of Eastern Samar with teachers experiencing problems in maneuvering the Department of Education Learners Information System (LIS) aside from the fact that most teachers cannot submit a report on time (Organista, 2018). The researcher, being an LIS in-charge of their school, noted several problems, including multiple LRNs of students, accidental enrolment of a student not included in the teacher’s master list, failed enrolment due to data issues, erroneous data entry, and the compounding issue of online versus actual data discrepancies, which delay information sharing, data extraction, reporting and submission, and electronic delivery to higher end-user offices. In the context of monitoring and evaluation (M&E) sharing, the DepEd district of San Julian is beseeched with delays in the turnout of reports and deliverables, including M&E-related data reported regularly. These could be attributed to some extent to the implementation parameters as outlined in the LIS guidelines.

The absence of empirical data on the underlying factors in the implementation of DepEd’s Enhanced Basic Education System facilities, specifically on the LIS among teachers/LIS in-charge, prompted the researcher to conduct this correlational research and look into the socio-professional variates that may influence the EBEIS-LIS implementation in the San Julian district of the schools division of Eastern Samar during the school year 2020-2021. The findings of this research will serve as a basis for developing a training program or project proposal that is aimed at improving the mechanisms of the present information system.

## **METHODOLOGY**

The researcher employed a descriptive research design in assessing the respondents' profiles as variates of their perceived extent of the Enhanced Basic Education Information System-Learner Information System (EBEIS-LIS) in the district of San Julian, Schools Division of Eastern Samar during the school years 2020-2021. The researcher examined the respondents' perceived extent of EBEIS-LIS implementation in terms of manpower requirements, method of implementation, and materials for implementation.

The respondents of this study are the elementary grade teachers/EBEIS-LIS in-charge in the 13 public elementary schools in the district of San Julian, Schools Division of Eastern Samar. This involved all the 87 pre-identified elementary grade teachers, EBEIS-LIS in-charge of a school in the said district, a regular-permanent employee and will agree to be part of the study. Majority of the respondents came from San Julian Central Elementary School ( $n = 11$ , 12.64%), followed by teachers from San Isidro Elementary School ( $n = 9$ , 10.34%). While only one teacher is assigned to manage the EBEIS-LIS account of Layog Elementary School. Due to the minimal number of identified participants, the researcher found it necessary to utilize total enumeration or universal sampling, tapping the prospect-respondents who are public elementary school teachers in the said locale and will meet the inclusion criteria set by the researcher.

The study utilized a researcher-made survey questionnaire to capture the relevant information to answer the specific research objectives. *The questionnaire was a Likert-scale-based assessment reflective of the respondents' perceived extent EBEIS-LIS implementation. This part was divided into three parts: manpower requirements, method of implementation, and materials for implementation. Each part consisted of 10 statement indicators, with the following five-point scale to quantify the responses of the teacher-respondents: 5 for Very Highly Implemented (VHI), 4 for Highly Implemented (HI), 3 for Moderately Implemented (MI), 2 for Fairly Implemented (FI), and 1 for Not Implemented (NI).* Since the questionnaire is self-structured, it was validated in terms of its content and reliability through expert analysis and the Internal Consistency Method using Cronbach Coefficient Alpha. A copy of the questionnaire was submitted to the Research Adviser as well as to the Research Advisory Committee for expert analysis as to its content. After their comments and suggestions are incorporated, the questionnaire was finalized and pilot tested among 15 teachers in the District of Sulat, Schools Division of Samar. It has the same characteristics as a municipality and is a neighboring locality of San Julian. An overall Cronbach alpha value of 0.87 showed that the material is acceptable to use in this undertaking.

The data gathering proceed after all letters requesting approval to conduct the study are given by concerned authorities. At the outset, a letter requesting permission to conduct the present research was secured from the Schools Division Superintendent of the Schools Division of Eastern Samar. Upon the approval by the said authority, separate letters requesting approval to conduct the study was submitted to the Public Schools District Supervisor of the District of San Julian, and the school principals of the 13 elementary schools in said District. When the conduct of the study was approved in these schools, the survey was conducted involving the elementary grade teachers in the District of San Julian.

Finally, the researcher proceed with the tabulation, computation, analyses and interpretation of data. This study followed the appropriate research ethics guidelines. Consent forms were given and collected from the involved participants, and a permit from government sectors directly concerned in this investigation. The respondents were assured

that these data will be kept confidential and cannot be used in any legal actions against them. Finally, the data was tabulated, organized, analyzed and interpreted with the use of frequency count and median.

## **RESULTS AND DISCUSSION**

### **Respondents' perceived extent of EBEIS-LIS implementation in terms of manpower requirements**

The first objective focuses on determining the perceived extent of EBEIS-LIS implementation of its three parameters, namely (1)manpower requirement, (2) methods of implementation, and (3) materials for implementation using median, a measure of central tendency. The results are presented as follows. The ten (10) indicators of manpower requirement are aggregately perceived to be “highly implemented” in terms of the manpower requirements in maneuvering the Department of Education’s Enhanced Basic Education Information System (AM = 4). Specifically the “Learner’s Information System in terms of self-paced learning on LIS and EBEIS” (n = 48), “graduate degree programs where education management information systems are discussed” (n = 46), and the “provision of user-friendly guides and simulation activities on ICT tools” (n = 44) are its top indicators, while “trainings/seminars and workshops on ICT for teachers” got the least number of responses among the ten highly implemented indicators (n = 34).

The results are in accordance with the statement of Nwankwo (2020), stating “the fast-changing environment of education brought about by rapid technological advancement has created a wide gap between what the school provides and what society demands” (p.400), and Balcita and Palaoag (2020) “the need to adapt to the latest trends in IT will help improve the quality of education and handling various activities of the school” (p.455). Moreover, the results are coherent to Cuartero and Role’s (2015) findings’ unveiling that the schools are highly effective in implementing schools’ management information systems.

This implies that the conduct of self-paced trainings, attendance to graduate programs, and the availability of user-friendly guides improve manpower capacity of the schools’ EBEIS-LIS in-charge, especially in the use of ICT tools embedded in the information system provided by the Department of Education.

**Table 1** Respondents’ perceived extent of EBEIS-LIS implementation in terms of manpower requirements

<b>Indicators of manpower requirements</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Median</b>	<b>Interpretation</b>
ICT-related short-term courses for teachers	37	34	14	1	1	4	Highly Implemented
Trainings/seminars and workshops on ICT for teachers	40	33	11	3	0	4	Highly Implemented
School-Based Learning Action Cells (SLAC) sessions for teachers on LIS, EBEIS and ICT-related topics	34	39	9	5	0	4	Highly Implemented
Hands-on workshops on LIS and EBEIS management for teachers	33	41	10	2	1	4	Highly Implemented
LIS, EBEIS user-friendly	27	44	14	0	2	4	Highly

guides, manuals and media-based tutorials.								Implemented
Simulation activities on ICT tools handling from TESDA and other similar technical agencies	20	44	21	0	2	4		Highly Implemented
School one-on-one coaching and mentoring on how LIS and EBEIS must be used and maintained by teachers	33	34	17	2	1	4		Highly Implemented
Requisite National Certification from accredited agencies on NC Computer Software use and other similar TESDA-related courses	17	41	25	2	2	4		Highly Implemented
Graduate degree programs where education management information systems are discussed	17	46	20	3	1	4		Highly Implemented
Self-paced learning on LIS and EBEIS	17	48	20	1	1	4		Highly Implemented
<b>Aggregate Median (AM)</b>						<b>4</b>		<b>Highly Implemented</b>

### **Respondents' perceived extent of EBEIS-LIS implementation in terms of methods of implementation**

The second parameter regarding the respondents' perceived extent of EBEIS-LIS implementation refers to methods of implementation to which the result is shown in Table 3.2 below. All the ten (10) indicators on the methods of EBEIS-LIS implementation are perceived to be "highly implemented" (AM = 4). Looking closely, the top indicators under this evaluation include "hierarchical implementation where the guidelines through regimented chain of command" (n = 48), "piecemeal implementation where the guidelines of the EBEIS-LIS are implemented" (n = 47), and "written documentation of the implementing rules and regulations" (n = 45). While "provision of technical assistance by trained personnel to teachers to ensure online updating of EBEIS-LIS" got the lowest number of responses (n = 39).

The results adhere to the findings of Hendriks (2012), indicating that the availability of comprehensible guidelines may make the implementation of an information system more successful. Moreover, it supports Coglianese and Lazer's (2003) conclusion that "management-based regulation requires a far more complex intertwining of the public and private sectors which constitutes good management" (p.692). Likewise, Yuen, Law, and Yong (2003) mentioned that the use of information systems could boost schools' efficiency by making data processing easier; efficient in meeting information needs; and boosting competitiveness by improving holistic strategy, while Drake et al. (2001) regarded evidence-based practices of an organization as a result of well-established guidelines and procedures.

This implies that the availability of clear implementing rules and regulations regarding how to maneuver the learner information system and the manual troubleshooting of issues provides effective indicators of EBEIS-LIS implementation in the San Julian district.

**Table 2** Respondents' perceived extent of EBEIS-LIS implementation in terms of methods of implementation

<b>Indicators of methods of implementation</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Median</b>	<b>Interpretation</b>
Top-Down Approach where the directive comes from the DepEd Central Office down to the local schools	26	43	13	4	1	4	Highly Implemented
Phase implementation where several phases happen during the whole duration of the program.	21	44	17	4	1	4	Highly Implemented
Piecemeal implementation where the guidelines of the EBEIS-LIS are implemented	20	47	18	1	1	4	Highly Implemented
Implementation after education and information campaign are made among the recipients.	28	41	16	1	1	4	Highly Implemented
Written documentation of the implementing rules and regulations	18	45	19	4	1	4	Highly Implemented
Hierarchical implementation where the guidelines through regimented chain of command	16	48	20	2	1	4	Highly Implemented
Monitoring on efficient and timely submission of deliverables	30	41	15	1	0	4	Highly Implemented
Provision of Technical Assistance by trained personnel to teachers to ensure online updating of EBEIS-LIS	33	39	13	2	0	4	Highly Implemented
Media networking where social media are tapped for potential troubleshooting of problems	23	44	18	1	1	4	Highly Implemented
Holistic implementation of monitoring and evaluation procedures	28	42	15	1	1	4	Highly Implemented
<b>Aggregate Median (AM)</b>						<b>4</b>	<b>Highly</b>

### **Respondents' perceived extent of EBEIS-LIS implementation in terms of materials for implementation**

The third parameter regarding the respondents' perceived extent of EBEIS-LIS implementation revolves around materials for implementation to which the result is shown in Table 3 below.

All the ten (10) indicators on materials for EBEIS-LIS implementation are perceived to be "highly implemented" (AM = 4). After examining the actual data as shown in the table, the top indicators under this evaluation include "observation checklist on how teachers fare in using EBEIS-LIS and reports submission turnouts" (n = 42), "venues, conference areas, and other locations where technical working group of school EBEIS-LIS coordinators can convene about updates" (n = 41), and "software copying of EBEIS-LIS for individual teachers with laptop and home computers" (n = 40). While "DepEd Memoranda and other office orders for information dissemination" got the lowest number of responses (n = 36) under this aggregate category.

The results support the contentions of Okyere-Kwakye (2013) that "work environment of teachers is one of the key propensities for quality teaching" (p.130). Likewise, Bibi and Khan (2019) opined that the physical infrastructure needs to be taken as a serious issue because it precisely affects the teachers as well as students. A different result was reported by Yusuf, Maina, and Dare (2013), revealing that "most teachers were not competent in the use of these facilities as the management of these facilities requires training and re-training" (p.21).

This implies that the venues for conferences, software and computer facilities, and DepEd orders ready for dissemination are highly needed materials for the full implementation of EBEIS-LIS among public elementary schools of the San Julian district. Finally, the government should provide more ICT facilities to augment technological capacity in every elementary school.

**Table 3.** Respondents' perceived extent of EBEIS-LIS implementation in terms of materials for implementation

<b>Indicators of materials for implementation</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>Median</b>	<b>Interpretation</b>
Trainings/seminar modules, manuals, pamphlets and other printouts	36	37	11	3	0	4	Highly Implemented
EBEIS- LIS toolkits, including kits on how to operate computers, laptops, netbooks, and other installable digital tools	33	38	13	2	1	4	Highly Implemented
Radio, television, print and other media with instructional materials	28	39	15	4	1	4	Highly Implemented
Social media sites such as Facebook, YouTube and others with tutorial or do-it-yourself (DIY)	29	38	18	1	1	4	Highly Implemented

Bulletin boards for paper announcements	28	37	17	4	1	4	Highly Implemented
Venues, conference areas, and other locations where Technical Working Group of School EBEIS-LIS coordinators can convene about updates	26	41	18	1	1	4	Highly Implemented
DepEd Memoranda and other office orders for information dissemination	35	36	14	1	1	4	Highly Implemented
Practice guides for teachers to have hands-on experience	34	37	14	1	1	4	Highly Implemented
Software copying of LIS and EBEIS for individual teachers with laptop and home computers	30	40	15	1	1	4	Highly Implemented
Observation checklist on how teachers fare in using EBEIS-LIS and reports submission turnouts.	26	42	17	1	1	4	Highly Implemented
<b>Aggregate Median</b>						<b>4</b>	<b>Highly Implemented</b>

## CONCLUSIONS AND RECOMMENDATION

Based on the findings of the study, the following conclusions are offered. Most of the respondents are young adult married female teachers who have earned units leading to a Master's degree and veterans in the field of teaching. They have attended district-based training in implementing the Department of Education's Enhanced Basic Education Information System. The respondents perceived high extent of Enhanced Basic Education Information System – Learner Information System implementation in terms of manpower requirement, methods of implementation, and materials for implementation. This shows effective data management and submission of needed reports online among the respondents.

From the conclusions, the following are recommended; to propose an extensive training program appropriate to teachers' teaching experience especially in handling their respective school's information system, to conduct an in-depth exploration via a comparative or regression framework, the impact of the profile variates to their perceived extent of EBEIS-LIS implementation, and that future researchers shall focus their studies on other factors that could affect the perceived extent of EBEIS-LIS implementation.

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