

## **DIGITAL MATURITY OF BASIC EDUCATION INSTITUTION: IMPLICATIONS TO MANAGEMENT AND OPERATIONS**

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**Abstract** – *This study aimed to identify the digital maturity level of the school where the study is conducted and its implications on the management and operations of the school. It also wanted to determine the digital practices of the Basic Education Institution in relation to management and operations; effects of digital practices on the management and operations of basic education institution; and the digital maturity of Basic Education Institution based on the digital practices in management and operations. Using qualitative case study approach, ten willingly and voluntarily secondary school teachers participated in the study and with the use of thematic data analysis, several themes were identified and discussed. Finally, the study concluded that the school where the study was conducted is digitally matured based on the digital practices and the identified effects.*

**Keywords** – Digital Maturity, Basic Education Institution, Management, Operations

### **INTRODUCTION**

The 21<sup>st</sup> century education is driven with the aid of information, communication and technology (ICT). Information technology is also very critical to the functionality of the organization including its systems and has substantial extent of implications on the capacity of the organization in terms of its responsiveness and leadership [1],[2]. With the prevalence of Corona Virus Infectious Disease 2019 (COVID-19) that shook the global educational realm, the role of ICT is now more tangible [3],[4]. Reflected on various initiatives of the education sector in the Philippines, ICT is involved in every part of the educative process [5]. In classroom instruction, several studies revealed that the utilization of ICT in teaching and learning elevate significantly the performance of students [6]-[9]. Although not all students have an access to technology through several reasons such as teacher level, school level, curriculum level, and student level [10], the education

department has been very flexible in providing quality education through blending of approaches in teaching and learning [11]. On the context of administration, management and operation, digitization initiatives have been encouraged by the Philippine government especially in streamlining of processes in the transactions given to the stakeholders. In fact, digitization initiatives of every process unit in all government units, which education is also one, is part of the indicators to be assessed by the validating agencies as part of the performance evaluation [12].

As such, every unit in the educational hierarchy is expected to be digitally matured. However, in the ranking of the Philippines in the global internet connectivity, there is still a long range to run [13]. Thus, it is an opportunity to determine the digital maturity of basic education institution and its impact on the management and operation.

As stated by Redep [14], the concept of digitally mature schools is heading towards

more significant in modern educational system due to growing importance of Information and Communication Technologies (ICT) in education. Digital maturity deals with strategy, leadership, operating model, people, culture, governance, and technology [15]. Digital maturity offers support to the policies and implementation of programs and projects of schools [16]. As discussed by Durek and colleagues [17], one of the digital maturity measures in education is in the field of leadership, planning and management where the aspect of ICT integration in education is measured and correlated to the teaching and learning process. Several studies concluded the significance of digital maturity and effective management of schools. For instance, [18] concluded that digital maturity is a good model for effective management and decision-making. Towndrow and Towndrow and Fareed [19] showed that digital maturity may begin with teachers inviting their students to see how digital tools and new media can be utilized to transform communication alive and taking full responsibility for mentoring others in digital production eventually. Similarly, Prakasa, Raharjo, and Wiratama [20] inferred that transformational leadership style implementation has something to do with digital maturity. In addition, they argued that organizational culture has a significant role on digital maturity. With the cited literatures and observations, the researcher moved to conduct the present study with the hope that it would generate additional inputs that can be significant in the body of knowledge.

### **OBJECTIVES OF THE STUDY**

The general objective of the study is to identify the digital maturity level of the school where the study is conducted and its implications on the management and operations of the school. In particular, the study answers the following research questions:

- a. What are the digital practices of the Basic Education Institution in relation to management and operations?

- b. How do digital practices affect the management and operations of basic education institution?
- c. What is the digital maturity of Basic Education Institution based on the digital practices in management and operations?

### **MATERIALS AND METHOD**

The study is a qualitative in nature that seeks to provide an in-depth explanation of the natural setting of the participants without being involved or part of the process.

#### **Research Design**

This utilized a qualitative case study research approach that focuses on developing an in-depth description and analysis of a case or issue which eventually leads to drawing a conclusion from the studied event, program, or activity of more than one individual.

#### **Participants/Respondents**

There are 10 participants who participated in the study. They are in the range of Teacher I-Teacher III in one Integrated High School in Laguna. The 10 participants consisted of eight female teachers and two male teachers with an average age of 37.6 and 9.8 years in teaching. These participants were given one week time to answer the instrument floated by the researcher using Google Forms. Triangulation was done through an interview with one of the school heads.

#### **Instrumentation**

The instrument used in this research is a semi-structured interview guide consisting of 5 general questions that correspond to each research objective presented. The instrument has undergone validation by one school administrator and two research experts in one state university in Laguna.

#### **Data Collection Procedure**

Data were collected using the google form where each participant was given one week to

respond to the five open-ended questions provided by the researcher. The google form during the one-week period was left editable on the part of the participants so they could edit their responses if they wish to provide additional information. After the one-week duration, the researcher closed accepting responses in the google form. To triangulate the result of the analysis and come up with a justified result, the researcher interviewed one of the school heads of the school where the study was conducted.

### **Ethical Consideration**

Participants are well-informed about the objective of the study. They were also given chance to withdraw before, during, or after the conduct of the study if they would wish to. Participants were also assured that all data collected would be utilized for the research purpose and that anonymity and confidentiality of the data would highly be observed.

### **Data Analysis**

Thematic analysis is the data analysis technique utilized by the researcher. Thematic analysis [23] provides accessible and systematic procedures for generating codes and themes from qualitative data. The researcher found thematic analysis as the most suitable data analysis procedure in the study as it shows flexibility in terms of research questions, sampling, data collection procedure, and generation of meaning. In this study, the six-step thematic analysis procedures given by Braun & Clarke [23] was adopted. The six steps include: familiarization; coding; searching themes; reviewing themes; defining and naming themes; and writing up.

## **RESULTS AND DISCUSSION**

### **Digital Practices Implemented by the School Head in Relation to Management And Operations**

Three themes emanated from the participants' responses after the thematic analysis. The themes include: digitization for communication; digitization for professional growth; and digitization for reporting, monitoring and evaluation.

Digitization for communication is one of the salient findings of the study. In this theme, participants mentioned that school heads utilized digital checking of attendance and google meet to conduct meetings to the subordinates. Also, fast communication is also implemented by the school head through the use of online media such as social media (group messenger) to deliver memoranda and other policies as well as announcement to the teaches.

In terms of digitization for professional growth, school heads' practices involve utilization of technology through online seminars or webinars and trainings conducted virtually. In this particular practice, the face-to-face transactions and gathering or assembly is minimized and hence, the spread of the virus is delayed. This is also an open opportunity for the teachers to save time and energy while maximizing their time to learn through trainings and seminars. This result conforms the conclusion of Khanna and Thakarar [21] that webinars are effective for teachers specially in this time of pandemic. Teachers are more equipped with the necessary skills and competencies in teaching when they attend online seminars and trainings.

Another practice that has been noted by the participants is the digitization of reporting, monitoring, and evaluation in the school management and operation. In particular instance, school reports now of the teachers are being submitted through online. There is also an online monitoring of attendance given to the teachers where they need to do log-in-log-out in the morning and afternoon.

*Table 1. Digital Practices Implemented by the School Head in Relation to Management And Operations*

<b>Codes</b>	<b>Category</b>	<b>Theme</b>
Platform for virtual meetings and seminar	utilization of technology in virtual meetings and seminars	digitization for communication
Platform for virtual meetings and seminar; Submission of Reports online	utilization of technology in virtual meetings and seminars; digitization of reports	digitization for professional growth; digital reporting, monitoring and evaluation
Online meetings, flag ceremony; orientations, trainings and seminars	utilization of technology in virtual meetings and seminars	digitization for professional growth;
submission of school reports; giving information using google forms; virtual flag ceremony; meetings	utilization of technology in virtual meetings and seminars; digitization of reports	digitization for professional growth; digital reporting, monitoring and evaluation
webinars, trainings and other school meetings	utilization of technology in virtual meetings and seminars	digitization for professional growth;
digital daily time records; reports	utilization of technology as monitoring tool; digitization of reports	digitization for professional growth; digital reporting, monitoring and evaluation
webinars, trainings, submission of reports	utilization of technology in virtual meetings and seminars; digitization of reports	digitization for professional growth; digital reporting, monitoring and evaluation
Use of google meet	utilization of technology in virtual meetings and seminars	digitization for professional growth;

**Integrating Digital Practices in School Management and Operations**

Three themes generated from the participants’ responses: communication; delegation; and participation. School heads according to the participants, integrate digital practice in terms of communication by instructing faculty through memoranda from the higher authority. School heads also inform the school personnel about the advantages of digitization and the fast tracking of transactions through this practice. School heads also integrate digital practices in terms of delegating tasks to

ICT coordinators and let the coordinators inform the teachers on the different tasks that need to be accomplished. While school heads exercise delegative power and communication, there are also participative on the implementation of digital practices in school by serving as a leader to the teachers. According to Thannimalai and Raman [22], there is an influence of principals' technology leadership and professional development on teachers’ technology integration specially in secondary schools.

*Table 2. Integrating Digital Practices in School Management and Operations*

<b>Codes</b>	<b>Category</b>	<b>Theme</b>
instructing the given memos	information dissemination	communication
informing school personnel about the advantage and fastest use of digital practices	information dissemination	communication
assigning and ICT coordinator	delegation of assignment	delegation
assigning and ICT coordinator	delegation of assignment	delegation
assigning and ICT coordinator	delegation of assignment	delegation
utilizing ICT in school	involvement in digital initiatives	participation
leading and participating.	involvement in digital initiatives	participation

**Effects of Digital Practices in School Management and Operations**

For the effects, there are four themes constructed from the participants’ responses namely: effectiveness and efficiency; openness to new normal; positive and negative implications; and streamlining of

business. Teacher-participants mentioned that through the digital practices implemented by the school heads, the efficiency and effectiveness of the service provided by the school is more tangible. The programs, projects, and activities have been streamlined to provide suitable and appropriate service to the clients. In

addition, teacher-participants consider digital practices imposed by the school heads as open opportunity for paradigm shifting in education from traditional face-to-face to a more flexible approach.

On the question about how do the practices affect the school management and operations, three themes are generated namely: monitoring, assessment and evaluation; open opportunity for flexibility;

and streamlining of processes. Being in the system, teacher-participants evaluated the implemented digital practices as open opportunity for flexibility and streamlining of processes. Teacher-participants also mentioned that the digitalization practices of the school heads affect greatly the monitoring, assessment and evaluation scheme in the organization that have been implemented before the pandemic started.

*Table 3. Effects of Digital Practices in School Management and Operations*

Codes	Category	Theme
Practice of new normal set up	paradigm shift	openness to new normal
making reports easier	ease of doing business	streamlining of business
Good enough for those who have stable accessibility. Sortly bad for those who have poor connections.	connectivity concern	positive and negative implications
communication using digital practices	faster communication	streamlining of business
paperless work	paperless work	streamlining of business
streamlined work. Accomplishing task easier and faster	streamlined work	streamlining of business
More organized and more efficient	organization and efficiency	effectiveness and efficiency
no need to go to school and submit requirements and fast dissemination of information	faster communication	streamlining of business
less interaction	less interaction	streamlining of business

### Digital Maturity of Basic Education Institution based on Digital Practices

The basic education institution is currently on advance-expert level based on the participants' assessment. Institution in this level has an advanced level of digitization that carry out many transformative initiatives, which allow them to construct a digital culture and organization. All of the digital channels are completely developed. School also in this level offers their services across all channels without problems. Based on the participants' responses, they believe that their school, as manifested by

the practices implemented by their school heads, is in this level of digital maturity. They perceived that their school is matured enough in terms of digitization and online communication channel. The result is in conformity to the previous results that the school has conducted already digitization initiatives that streamlined processes in the services provided to the people they serve. The result of the study is with conformity to what Ristić (2017) argued that the successful integration of digital technologies in educational institutions is an imperative of any educational system in a developed society.

*Table 4. Digital Maturity of Basic Education Institution based on Digital Practices*

Codes	Category	Theme
improving the latest trend in virtual set-up	opportunity for latest trends	open opportunity for flexibility
easy access of reports	accessibility	monitoring, assessment and evaluation
no need to go to school to submit report	streamlined process	streamlining of processes
report submitted at earliest time possible	streamlined process	streamlining of processes
positive effect	positive effect	monitoring, assessment and evaluation

teachers and personnel became more digitally oriented	digital orientation for teachers and personnel	open opportunity for flexibility
lessen the communication of the worker hassle free; other teachers do not inform because of poor connection	streamlined process	streamlining of processes
	streamlined process	streamlining of processes

**CONCLUSION, LIMITATIONS AND RECOMMENDATIONS**

In light of the findings presented, this study is in success of identifying the digital maturity of the school-respondent which is advanced. The school has a capability of communicating online to the personnel and is able to translate weakness to opportunities by streamlining the processes to facilitate efficient delivery of service to the clients (students, parents, and stakeholders).

Though this study successfully identified the digital maturity of the school where the study was conducted, there are some limitations noted by the researcher that could probably affect the reliability of the results. Some of these

limitations include the number of participants involved in the study. Since there were only 10 participants who expressed willingness to be part of the study, large proportion of the teachers in the school would probably provide more reliable results. Another limitation is the process of gathering the data. Since there had been limitations on the conduct of face-to-face meetings, the study was conducted using google forms. Because of these identified limitations, the researcher recommends further study on the digital maturity of schools taking into consideration the face-to-face interview to the participants.

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