International Research Journal of
SCIENCE, TECHNOLOGY, EDUCATION, AND MANAGEMENT
P-ISSN: 2799-063X | E-ISSN: 2799-0648
ISO 9001:2015 Certified
Volume 2, No. 3 | September 2022

Instructional leadership for information and communication technology towards the development of a strategic plan for ICT

Riza R. Noceto
San Joaquin – Kalawaan High School, Philippines
riza.noceto@deped.gov.ph

ABSTRACT

This study aims to ascertain the instructional leadership for ICT among leaders and teachers in the division of Pasig City. The researcher employed mixed convergence - quantitative and qualitative methods. There were 321 teachers and 10 principals that served as respondents. In the qualitative method, 10 subjects served as informants. Triangulation was used, in which both quantitative and qualitative data are gleaned at about the same time and are given equal significance. The findings revealed that fully practiced inferred the extent of the practice of instructional leadership for ICT in terms of digital practice, ICT maturity, assessment, and roles with ICT, while mostly practiced leadership for collaboration. However, there is a significant difference in the extent of the practice of instructional leadership for ICT except on the assessment and roles with ICT. Transformational leadership style is espoused by the instructional leaders for ICT in the Division of Pasig. Moreover, there was a strong positive correlation between the leadership styles and the extent of the practice of instructional leadership for ICT. On the other hand, it was determined that lack of funds to provide adequate access to the internet connection to successfully integrate ICT in teaching & learning, lack of relevant and effective training to facilitate utilization of ICT and lack of ICT learning resources are the challenges emerged in the instructional leadership for ICT. It was concluded the formation of ICT teams to delegate responsibilities and give technical assistance in handling ICT matters and the collaboration in leading, sharing, and improving ICT expertise through LAC sessions and actual training are best practices concerning instructional leadership for ICT. Furthermore, a strategic plan has been proposed which contains the area of emphasis based on the results of the study.

ARTICLE INFO

Received : May 4, 2022
Revised : June 6, 2022
Accepted : Sept. 30, 2022

KEYWORDS

Assessment and roles for ICT, Digital practice, ICT maturity, Instructional leadership for ICT Leadership for collaboration, Leadership style

Suggested Citation (APA Style 7th Edition):

Noceto, R.R. (2022). Instructional leadership for information and communication technology towards the development of a strategic plan for ICT. *International Research Journal of Science, Technology, Education, and Management,* 2(3), 96-109. https://doi.org/10.5281/zenodo.7243676

INTRODUCTION

Education in the Philippines is currently going through a period of significant change. The COVID-19 epidemic has had a significant impact 0n education. To accomplish high-quality teaching & learning, instructional leaders must keep up to date with current educational trends and practices (Tria, 2020).

The goal of educational leadership is to ameliorate education quality and the education system as a whole. Collaboration between teachers, students, and parents is a key component of effective educational leadership. Improvement of procedures, resources, and training are the fundamental goals of educational leadership to achieve academic success. This is mostly accomplished via collaboration with a diverse group of people, including educators, parents, students, public politicians, and members of the general public (Top Education Degrees, 2017).

Besides, Cordeiro and Cunningham (2012) emphasized that the basis of educational leadership provides a context for the studies of educational leadership by offering detailed explanations and applications of educational standards, common practices, and assessments that give learners a firm understanding of their leadership style. The impact of the school leader to all stakeholders and to the educational process is highlighted by instructional leadership and student learning.

Likewise, leadership style is very important among instructional leaders to manage a certain organization holistically. One of the advantages of understanding leadership styles is to realize their strong and weak points. By strategically utilizing their strengths and countering their weaknesses, instructional leaders can be proactive and more effective as leaders.

Furthermore, it is undeniable that the school administrator must wear several hats to provide instructional leadership. At various points during the school day, the role of the principal must include management, diplomacy, teaching, and curriculum leadership. Principals must be skilled in all of these areas and have no trouble switching from one job to another since it is surely a balancing act. In the same vein, Doyar, Mina, and Owoh (2019) highlight instructional leadership as "what instructional positions of authority educators can play in their study hall settings or in the virtual condition to achieve the best learning results for students." When all is said and done, this might refer to the entire process of teaching and learning. It is a piece of the purported instructive authority, which incorporates authoritative administration likewise. The objective of the instructional initiative is to plan the school condition totally by the guidance made of three measurements: characterizing the school crucial, the instructional program, and advancing a positive school atmosphere.

Additionally, the use of innovation in education in schools is intrinsically related to instructional leadership. The Philippines is still in the early phases of incorporating ICT into the teaching and learning process in the education sector, similar to other developing nations. The phrase "School leadership for ICT" is used to refer to the function of school innovators in the application of Informati0n and Communication Technologies (ICT) for teaching and learning in schools (Ottestad, 2013). It has been shown that effective school leadership for ICT is crucial to encouraging teachers to use and innovate with ICT in their classrooms. The development of digitally competent learners depends on effective school leadership for ICT, which provides the required infrastructure, a positive work atmosphere, and clear goals and visions for the pedagogical use of ICT (Kirkland & Sutch, 2009; Kozma, 2003; Dexter, 2008 cited by Geir Ottestad, 2013).

Several researchers stress the position of clear leadership in developing positive enthusiasm toward ICT among educators and facilitating innovative uses of ICT in education. According to Ottestad (2013), school leadership is a critical element for the success of the implementation of ICT in schools by providing a favorable working envir0nment, clear visions, and first-rate infrastructure. Clear leadership can promote the development of digitally literate students. A key point in ICT leadership is to assist teachers in engaging in professional development paramount to the utilization of ICT in the classroom.

According to Dexter (2008), "in a school, effective ICT leadership remains a strong predictor of its adoption by teachers and students". ICT leadership is brought out by a team of individuals with varied tasks, therefore leadership research "expands beyond the position of top executives." Avoiding solo performances and ensuring that all of the staff members—leaders, coordinators, administrators, teachers—are on the same page is essential. Dexter also stresses the significance of school ICT leadership in establishing the course, supporting the growth of ICT usage in teachers' instructional techniques, and taking initiatives to get the entire organization to utilize ICT. The emphasis and the direction must be acceptable for a school setting and practical. As a result, school principals bear a significant am0unt of responsibility for initiating and implementing school change through the use of ICT, as well as enabling complex decisions regarding the integration of ICT into learning and teaching.

According to Mwawasi (2014)'s research, school leaders must place a high value on techn0logy leadership. By implementing strategies to promote ICT uptake for pedagogical improvement, sch00l leaders, in turn, built sch00l capacity for ICT use in teaching and learning, which is an instituti0nal development endeavor. Pr0fessi0nal development for school leaders is therefore essential to assist them in gaining knowledge on the most recent inf0rmation regarding ICT and technol0gy use, as rapid innovation in techn0logy poses a challenge of constant new kn0wledge and skills, which the leaders require. Furthermore, school leaders must work hard to get all teachers on board with whole-sch00l improvement. To effectively help build the capacities of their teaching staff f0r ICT integration, school leadership must develop an awareness of their unique school context.

The Department of Educati0n (DepEd) is addressing technological gaps am0ng teachers and students in light of the growing trend in Information and Communication Technology (ICT) education. Jocelyn DR. Andaya, director of DepEd's Bureau of Curriculum Development, stated during a lecture at the Education Summit that improving ICT is the first step in raising educational standards in the Philippines (Santisteban,2017). To address the technological gaps in ICT, however, instructional leadership and leadership styles are crucial. The principles and viewp0ints of instructi0nal leaders are defined by their leadership styles.

According to an article from the Indeed Career Guide (2021), leaders require a framework that outlines their leadership style in 0rder to effectively lead teachers, students, or administrators. It is easier for leaders t0 make decisions, pri0ritize g0als, and engage with others when they have a leadership style. When the leaders select the appr0priate leadership appr0ach for the circumstance, they may be able to rapidly resolve disputes, change the direction of a sch00l, or even restructure the educational system.

The current study is premised on the discussions about the instructional leadership for ICT in so far based on the result of electronic self-assessment of teachers (ESAT), in our school, San Joaquin – Kalawaan High School, division of Pasig City, indicated the top 3 priority areas for improvement namely: "Selected, devel0ped, 0rganized and used appr0priate teaching and learning res0urces including ICT t0 address learning g0als"; Applied a range of teaching strategies to devel0p critical and creative thinking, as well as higher-order thinking skills; and the indicator, "Performed several related w0rks/activities that contribute t0 the teaching-learning pr0cess". With that baseline data, the use of ICT has always been an indicator of the priority of improvement. Furthermore, the researcher would like to assess the instructional leadership for ICT among the School Principals, Heads, Master Teachers, and Classroom Teachers in the Schools Division of Pasig City to determine the leadership styles espoused by them. In doing this research, the researcher would be able to know the extent of practice and implementation of instructional leadership in terms of digital practice, ICT maturity, assessment, and r0les using ICT and leadership for c0llab0ration thereby deducing an action plan on how to impr0ve the leadership style and ascertain the best practices applied by the instructional leaders.

THEORETICAL FRAMEWORK

This study was anchored from the theoretical framework of Geir Ottestad (2013) on three the0retical perspectives on sch00l leadership for ICT. Distributed leadership, pedag0gical leadership, and, transf0rmati0nal leadership were used t0 establish an analytical framew0rk for c0ntextualizing the study.

Distributed leadership

Distributed leadership emphasizes the interacti0n between teachers and school leaders as well as leadership as an activity (Spillane, 2005, cited by Ottestad, 2013). Teachers are thought of as classroom leaders, and school leadership is a collaborative team effort. Since boundaries are being pushed, collaboration between educators and leaders is crucial. Dexter (2008) asserts that in this area, leadership choices should be influenced and carried out by a diverse team. This group might c0nsist of the principal, ICT coordinat0rs, teacher leaders, and competent teachers. There are a ton of instances of educators using ICT in their classrooms to innovate, train colleagues, and challenge the status quo of teaching (Hadjithoma & Karagiorgi, 2009; Hatlevik, Tomte, Skaug, & Ottestad, 2011). These educators promote knowledge in their courses (Nonaka, von Krogh, & Voelpel, 2006).

Pedagogical leadership

Pedagogical leadership emphasizes the significance of school administrators actively participating in the pedagogical practice of educators through observation, guidance, and the execution of professional development initiatives when necessary (Jackson, et al., 2009). Dexter (2008) asserts that pedagogical leadership for ICT should be utilized to set the course for educational practices and ICT evaluation. These directions must be modified to reflect the faculty's fair expectations for which course to take and how quickly to adapt. The Decision-making of leaders when establishing and allocating tracks for the professional development of teachers in the pedagogical use of ICT can also be shaped by taking staff needs and capacities into account (Dexter, 2008).

Transformational leadership

According to Burkus (2010), transf0rmational leadership is a broadly novel approach to dealing with authority that highlights how pioneers can affect significant and positive change in their followers. Although James MacGregor Burns first proposed the concept of transformational leadership when focusing on political leaders, the term is now utilized to refer to organizations as well. Consumes depicted two types of leadership: value-based and transformational.

The transf0rmational leadership hypothesis is substantiated by approximately 30 years of research relating transformational initiative to positive execution outcomes, which include individual, group, and authoritative level factors. It also emphasized the importance of considering devotees in initiative research. The main created and approved hypothesis to emphasize ethics and qualities in authority was transformational leadership. In any case, research into the hypothesis is fundamentally based on a multifaceted administration survey, which has produced contradictory results. Senior-level pioneers have also received a lot of attention in research. Transformational authority can also be used contrarily by pioneers who are "faking it." Regardless, the transformational administration hypothesis is a significant and widely used way to deal with research and teaching endeavors.

Because instructional leadership is immanently a blend of qualities from all perspectives, these three views are complementary. Then, school leadership may be explicated as a clear separation of formal roles and legitimacy, a functional distribution of leadership responsibility to teams and people, and careful observation and c0unselling of teachers' needs and pedagogical practice. Pedagogical leadership in schools, however, must be appreciated as the "interplay of school leaders and teacher influence." When ICT is present in regular pedagogical practice, the function of the school leader is tested because they must participate in ICT-related pr0fessional development opportunities to supp0rt their new functions as technology leaders (Stuart, Mills, & Remus, 2009).

CONCEPTUAL FRAMEWORK

The study was directed by the thinking that the instructional leadership for ICT of the school leaders and teachers is the result of their extent of practice on digitalization, ICT maturity, assessment, and roles with ICT and leadership for collaboration, and this instructional leadership for ICT is likewise anchored on the leadership styles employed.

The figure that follows was the conceptual framework of the study as well as the research paradigm of the research endeavor. It depicted how the researcher attempted to determine and analyze the instructional leadership for ICT among the school leaders and teachers.

The instructional leadership for ICT of the school leaders and teachers was based on the four indicators of instructional leadership and their leadership styles.

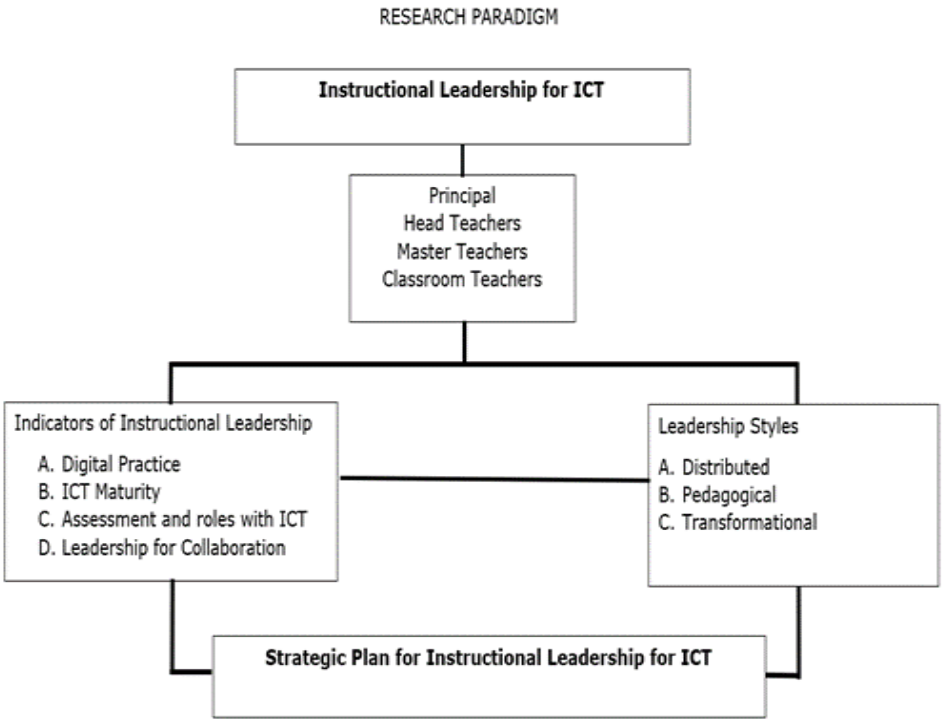

Figure 1: Research Paradigm

OBJECTIVES OF THE STUDY

The major goal of this study was to ascertain the instructional leadership for Inf0rmation and Communicati0n Techn0logy (ICT) among school leaders and teachers in the Pasig City division. This study specifically aimed to answer the following questi0ns:

1. What is the extent of the practice of instructional leadership for ICT as assessed by respondents in terms of:
    1.1 Digital Practice;
    1.2 ICT Maturity;
    1.3 Assessment and r0les with ICT; and
    1.4 Leadership for C0llaboration?
2. Is there a significant difference in the extent of the practice of instructional leadership for ICT as assessed by the group of respondents such as:

2.1 Principals;
2.2 Head Teachers;
2.3 Master Teachers; and
2.4 Teachers?

3. What are the leadership styles espoused by instructional leaders in terms of:
3.1 Distributed Leadership;
3.2. Pedagogical Leadership; and
3.3 Transformational Leadership?

4. Is there a correlation between leadership styles and the extent of the practice of instructional leadership for ICT?
5. How may the leadership styles for ICT be espoused by the instructional leaders?
6. What strategic plan of instructional leadership for ICT may be proposed based on the study?

MATERIALS AND METHODS

To achieve the goals and objectives of the research, the researcher mainly employed mixed convergence. In order to get a thorough picture of the topic under inquiry, a mixed convergence study integrates quantitative and qualitative methodologies in the same study. Mixed research appr0aches, according to Creswell (2013), are relatively new and ev0lving in the health and social sciences, and they involve mixing statistical trends and tales with researching human and social problems. The descriptive quantitative and correlational research design was employed in the assessment of school heads of junior high schools, head teachers, master teachers, and classroom teachers to determine the extent of practice on the instructional leadership for ICT and their leadership styles. This was done through the conduct of an online survey using google form. On the 0ther hand, qualitative research was used to come up with a practical insight into how may the leadership styles for ICT espoused by the instructional leaders and best practices among the resp0ndents thereby deduced a strategic plan for the impr0vement of instructional leadership for ICT. This research design made use of the qualitative method by Creswell. (Creswell, 2013).

Furthermore, triangulation was used, which entails gathering b0th quantitative and qualitative data concurrently and emphasizing particular similarities, contrasts, and synthesis/interpretation equally. This enabled the researcher to amalgamate the strengths of each form of data equally, increasing the credibility of the findings in general to the point where two sets of data converged and revealed comparable outcomes (Creswell, 2007).

The respondents of the study were junior high school teachers involving ICT coordinators, master teachers (MTs), head teachers (HTs), and principals in 13 schools in the Division of Pasig. A multi-stage sampling technique was utilized in determining the sample among teachers, Master teachers and Head teachers. That is, employment of stratified sampling followed by random technique. The researcher applied first Slovin's formula to come up with the prescribed sample size. Based on the computation, out of 1916 junior high school teachers, there were 321 teacher respondents comprised of Teachers, MTs, and HTs only.

On the other hand, there were 13 principals that purposively and supposedly served as the sample of the study. However, 3 out of 13 of the principals as respondents of the study opted not to participate. In compliance with the voluntary participation and R.A NO. 10173 (Data Privacy Act of 2012) the researcher used only the 10 principals who voluntarily participated in the research.

Furthermore, in the qualitative study, 10 subjects were selected as informants. Two principals and 8 teachers including head teachers, master teachers, classroom teachers and, ICT coordinators were selected among the 13 schools in the convenience sampling technique due to the pandemic situation and hectic schedules of some respondents.

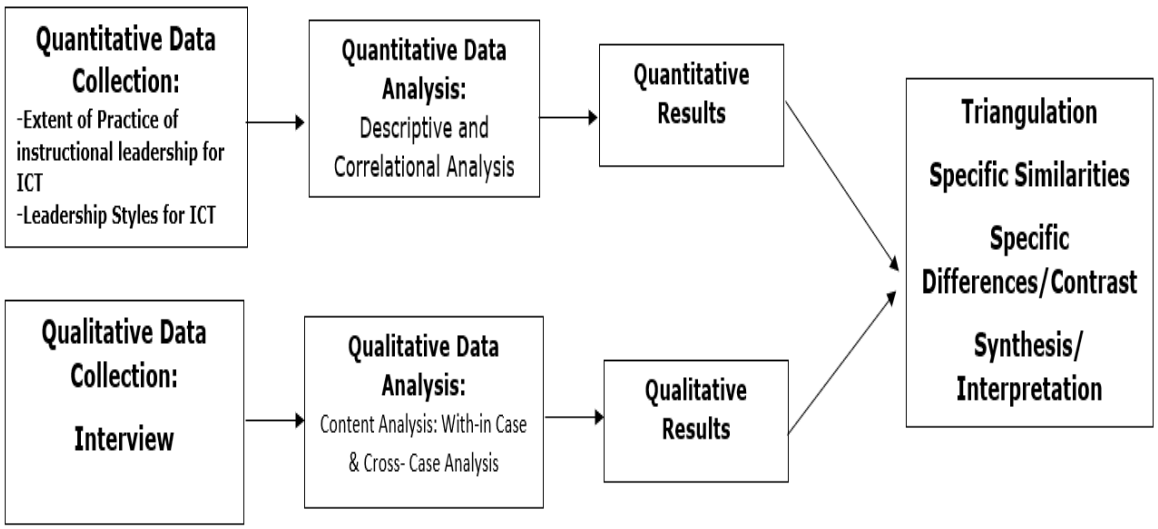

Figure 2: Methodological Framework of the Study

Instruments and Techniques

Questionnaire. The research questionnaire was divided into four parts: Part I included the letter to the respondents and the informed consent pursuant to the Data Privacy Act of 2021; Part II was about the personal information of the respondents; Part III was an adapted questionnaire from Geir Ottestad (2013) with modifications based on actual educational settings which involved the assessment on the extent of the practice of instructional leadership for ICT. Permission and approval to use the questionnaire as secured and appr0ved by the author (see appendix Amore, Part IV was a self-made questionnaire that involved the leadership styles which helps the instructional leaders understand their preferred leadership style for ICT.

Validation. Validation on this instrument was done accordingly. The researcher solicited the assistance of five experts in the field of leadership and research to go over the questionnaire and scrutinized it. Their comments and suggestions were noted, and necessary corrections were incorporated into the enrichment of the instrument. The final version of the research instrument was created using all of the comments and suggestions of the validators.

Moreover, the questionnaire was subjected to a validity and reliability test. The reliability of the instrument was calculated using statistical software to generate Cronbach's Alpha Value. Consequently, pilot testing was administered to 33 samples that were not part of the actual sample of the study. Cronbach's Alpha showed that the survey questionnaire had excellent reliability since the alpha is 0.9. The questions were considered reliable. Furthermore, the result of the reliability coefficient is appended in the appendices.

Interview. The researcher conducted an interview in order to obtain information that was coded to extract substantial responses for the case study. Moreover, it also clarified the answers that were elicited from the questionnaire and gathered additional information that would justify and support the result of the study that was conducted.

Due to the COVID-19 pandemic, the interview with the informants was done virtually using google meet. The interview instrument was divided into two parts: the consent form for interviews and the guide questions for the interview proper.

Data Gathering Procedure

The mode of data gathering used was online survey questionnaires and online interviews. With the approved letter from the Division office, the researcher immediately asked assistance of the school research coordinators to distribute and administer the online survey questionnaires. Administration of questionnaires was done virtually using google form through the help and assistance of the respective school research coordinators and school principals. The researcher checked the google forms from time to time to know the status of responses from the respondents. The interview proceedings were done through the help of the research coordinators in identifying the informants. The permission was granted using informed consent for the interview. The researcher asked the participants for a schedule for when and where they can accommodate the interview. Then, a virtual interview proper was followed, and the researcher made use of google meet with video recording so that all essential information was captured. Furthermore, after interviewing the target participants the researcher transcribed the keywords, phrases, and statements in order to allow the voices of the research informants to speak. Three types of analysis were utilized to satisfy the objectives of the study. The first was to use the within-case analysis to provide a detailed description of each case and theme. Next was the cross-case analysis to formulate a thematic analysis across the cases and lastly the assertions or an interpretation of the meaning of the case. Finally, triangulation was utilized to equally combine the strengths of each form of data, determine the specific similarities, and specific differences and thereby synthesize and interpret it.

Managing Risks and Ethical Considerations

Because the study requires the voluntary participation of the respondents, their consent was included in the questionnaire, and particular ethical concerns were addressed. The researcher considered ethical issues that were required to ensure the privacy and safety of the respondents. To ensure the participation of the respondents, the researcher explained all of the crucial information of the study, involving its goal and purpose. By doing so, the respondents understood the value of their participation in the finalization and completion of the study. The confidentiality and anonymity of participants were guaranteed under R.A. NO. 10173(Data Privacy Act of 2012). Only pertinent details that aided the researcher in providing answers to the research questions were included. The researcher gave the participants ample time to accomplish the questionnaires and did not put them under any pressure to read and answer the questions. The findings of the study may be published, but no identifications of participants will be associated with their responses in any published format.

However, due to some constraints, the researcher was not successful enough to achieve a 100% retrieval rate of the responses from the respondents. Ten out of 13 principals voluntarily participated in answering the survey questionnaire.

Treatment of Data

Collected data were meaningless unless they are treated statistically. The data which was collected from the online survey questionnaire result were analyzed and interpreted in order to answer specific questions presented in the first chapter. The researcher consolidated and classified the tables 0f data that was gleaned. Several statistical techniques such as weighted mean, standard deviati0n, ANOVA, and Post Hoc such as Tukey, and Pearson Pr0duct Moment Correlation Coefficient were used. Further, the gleaned data was processed and analyze through Statistical Package for the Social Sciences (SPSS).

RESULTS AND DISCUSSION

1. What is the extent of practice of instructional leadership for ICT as assessed by the respondents in terms of:
    - 1.1 Digital Practice;
    - 1.2 ICT Maturity;
    - 1.3 Assessment and roles with ICT; and
    - 1.4 Leadership for Collaboration?

Table 1: Extent of practice of Instructional Leadership for ICT

Variables	Group Mean		Overall Weighted Mean	Standard Deviation	Adjectival Rating	Interpretation
Digital Practice	Teacher	3.37	3.41	0.491	Great Extent	Fully Practiced
	Master Teacher	3.47				
	Head Teacher	3.55				
	Principal	3.70				
ICT Maturity	Teacher	3.30	3.34	0.518	Great Extent	Fully Practiced
	Master Teacher	3.33				
	Head Teacher	3.54				
	Principal	3.62				
Assessment and roles with ICT	Teacher	3.35	3.38	0.527	Great Extent	Fully Practiced
	Master Teacher	3.40				
	Head Teacher	3.54				
	Principal	3.55				
Leadership for Collaboration	Teacher	3.21	3.27	0.596	Moderate Extent	Mostly Practiced
	Master Teacher	3.29				
	Head Teacher	3.51				
	Principal	3.60				

Legend:4=3.28-4.0(Great Extent/Fully Practiced), 3=2.52-3.27(Moderate Extent/Mostly Practiced), 2=1.76-2.51(Slight Extent/Partially Practiced), 1=1.00-1.75(Not at all)

The results showed that fully practiced revealed the extent of the practice of instructional leadership for ICT except for Leadership for Collaboration. Based on interview and the convergent analysis of the quantitative and qualitative data revealed that the emerging theme of best practices with regards to instructional leadership for ICT pertains to leading, sharing, and improving ICT expertise through LAC sessions and actual training establishing the best way of realizing and utilization of ICT in the Division of Pasig. This implied that the schools encourage teachers to share their digital lesson plans, upgrade their ICT skills in teaching, and introduce ICT to teaching and learning which results in a better teacher-student relationship. This also helps instructional leaders to prepare the school for the demands of digitalization.

Furthermore, the convergent analysis from the quantitative and qualitative data revealed that the emerging themes on the challenges encountered by instructional leaders affirm the result of the moderate extent of the practice of instructional leadership for ICT in terms of leadership for collaboration. These emerging themes are lack of funds to provide adequate access to an internet connection to successfully integrate ICT in teaching and learning; lack of relevant and effective training to facilitate utilization of ICT; and lack of ICT learning resources. This implies that a strategic plan can be deduced pertaining to the indicators of leadership for collaboration that incurred the lowest

weighted mean result.

2. Is there a significant difference in the extent of the practice of instructional leadership for ICT as assessed by the group of respondents:

2.1 Principal;
2.2 Head Teachers;
2.3 Master Teachers; and
2.4 Teachers?

Table 2: Mean Comparison of the group respondents' assessment on Extent of practice of Instructional Leadership for ICT

Variables	Group Mean		Standard Deviation	F. Value	Sig. Value	Interpretation	Decision to Ho
Digital Practice	Teacher	3.37	0.502	2.674	0.042	Significant	Reject
	Master Teacher	3.47	0.496				
	Head Teacher	3.55	0.397				
	Principal	3.70	0.291				
ICT Maturity	Teacher	3.30	0.526	2.935	0.034	Significant	Reject
	Master Teacher	3.33	0.535				
	Head Teacher	3.54	0.414				
	Principal	3.62	0.314				
Assessment and roles with ICT	Teacher	3.35	0.528	1.602	0.189	Not Significant	Failed to Reject
	Master Teacher	3.40	0.571				
	Head Teacher	3.54	0.471				
	Principal	3.55	0.352				
Leadership for Collaboration	Teacher	3.21	0.602	3.494	0.016	Significant	Reject
	Master Teacher	3.29	0.626				
	Head Teacher	3.51	0.475				
	Principal	3.60	0.335				

The mean comparison test results of the 4 groups of respondents in terms of digital practice, ICT maturity, and leadership f0r collaboration exposed that there is a significant difference as culled from the F value the corresponding probability value of less than alpha 0.05. Hence, the null hypothesis is rejected. This implies that the extent of the practice is different across groups.

However, there was no significant difference in the extent of the practice, particularly on assessment and roles among the groups as culled from the F value of 1.602 with the corresponding probability value of 0.189 which

is greater than the alpha 0.05. Hence, the null hypothesis is accepted. This implies that the extent of practice on assessment and roles with ICT is not different across groups.

Table 3: Post-Hoc: Leadership and Collaboration

Group (I)	Group (J)	Mean Difference	Sig. value
Teachers	Master Teachers	-0.0761	0.840
	Head Teachers	-0.2960	0.044
	Principals	-0.3863	0.179

Mean comparisons on the extent of the practice of Instructional Leadership for ICT are all significant except on the assessment and roles with ICT (P>0.05), Therefore, Post hoc test for multiple comparisons such as Tukey is performed for digital practice, ICT maturity, leadership for collaboration and overall extent of practice since it revealed significant results (p<0.05).

Apparently, the Post hoc test results revealed that head teachers and teachers differ significantly on the leadership for collaboration extent of practice (p<0.05) as culled from the mean difference of -0.2960 with the corresponding probability value of 0.044 which is less than alpha 0.05.

3. What are the leadership styles espoused by the instructional leaders in terms of:

3.1 Distributed Leadership;
3.2. Pedagogical Leadership; and
3.2 Transformational Leadership?

Table 4: Summary of Leadership Styles for ICT

Leadership Style	Overall Mean	Standard deviation	Adjectival Rating	Interpretation
Distributed Leadership	3.40	0.497	Strongly Agree	Fully Practiced
Pedagogical Leadership	3.39	0.491	Strongly Agree	Fully Practiced
Transformational Leadership	3.41	0.508	Strongly Agree	Fully Practiced

Legend:4=3.28-4.0(StronglyAgree/FullyPracticed),3=2.52-3.27(Agree/MostlyPracticed), 2=1.76-2.51(Disagree/PartiallyPracticed),1=1.00-1.75(StronglyDisagree/Not at all)

The findings revealed that the instructional leaders strongly agree with the three leadership styles for ICT. However, Transformational Leadership has the highest overall mean of 3.41 which implies that the leadership styles espoused by the instructional leaders in the Division of Pasig are more transformational. According to one of the principals, I quote "*P2: "I encourage everyone to adopt the style best suited to their level of learners & their willingness to go beyond what is Conventional & traditional."*

4. Is there a correlation between the leadership styles and the extent of the practice of instructional leadership for ICT?

Table 5: Correlation Between Extent of Practice of Instructional Leadership for ICT and Leadership Styles

Variables	Pearson r	Sig. value	Interpretation	Decision to Ho
Extent of Practice*Leadership Styles	0.773	0.000	Significant	Reject

The correlation test between the leadership styles and the extent of the practice of instructional leadership for ICT yielded a significant result. There is a strong positive relationship between these variables reflective of the

Pearson r value of 0.733 with the corresponding probability value of 0.000 which is less than alpha 0.05. Hence, the null hypothesis is rejected.

Furthermore, the convergent analysis from the quantitative and qualitative data implies the significant results yielded between and among the extent of the practice of instructional leadership for ICT and the emerging themes on the challenges encountered with regards to instructional leadership for ICT; best practices with regards to instructional leadership for ICT; and the leadership style for ICT espoused by instructional leaders. This implies that the variables are firmly connected and significant.

5. How may the leadership styles for ICT be espoused by the instructional leaders?

The instructional leaders espoused more on transformational leadership in which they encourage, motivate, collaborate, and allow discovering new learning to enhance skills in applying new trends towards the improvement of ICT utilization. Moreover, the challenges encountered by instructional leaders with regard to instructional leadership for ICT are lack of funds, lack of relevant training, lack of ICT learning resources, and lack of teachers' readiness to successfully integrate, and facilitate ICT in teaching and learning. In line with this, the instructional leaders practiced their leadership style in facing the challenges by conducting learning action cells, exhibiting positive behavior, implementing collaborative team efforts, and leading in making a holistic approach toward the development of ICT. Furthermore, the instructional leaders espoused their best practices about collaboration in leading, sharing, and improving ICT expertise as well as creating ICT teams, engaging the stakeholders, and conducting research that involves the utilization of ICT to address the challenges with regard to instructional leadership for ICT.

6. What strategic plan of instructional leadership for ICT may be proposed based on the study?

The strategic plan is constructed contingent on the convergent findings of the present study specifically on the assessment of the extent of the practice of Instructional leadership for ICT and the leadership style espoused by the instructional leaders in facing the challenges encountered by instructional leaders during the implementation of ICT integration in teaching and learning in the City Schools Division of Pasig.

The findings of the study showed that fully practiced inferred the extent of the practice of instructional leadership for ICT as assessed by the group of respondents in terms of digital practice, ICT maturity, assessment, and functions with ICT. However, in terms of leadership for collaboration, it was revealed as mostly practiced. Additionally, the results of the qualitative data on the challenges encountered by the instructional leaders for ICT affirm the statements pertaining to the moderate extent of the practice in terms of leadership for collaboration and the indicators that obtained the lowest weighted mean for digital practice, ICT maturity and assessment and roles with ICT. Hence, the following indicators need to be addressed to improve the extent of the practice of instructional leadership for ICT.

1. Leadership for Collaboration: The school facilitates and allocates funds to enable ICT-capable teachers to spend time to coach their co-teachers.
2. Assessment and Roles with ICT: The school provides tools for assessment towards the improvement of ICT utilization.
3. ICT Maturity: The school provides the leaders and educators to have a continuous conversation regarding the pedagogical use of ICT for greater access to adequate ICT resources and make ICT available and adapt to students with special needs.
4. Digital Practice: The school creates the conditions for brainstorming strategic issues and actions to engage students in deciding when and how ICT is to be used.

CONCLUSIONS

The instructional leadership for ICT in terms of digital practice, ICT maturity, assessment, and functions with ICT was fully practiced except for leadership for collaboration. Moreover, there was a significant difference in the extent of the application of Instructional Leadership for ICT except on the assessment and roles indicators. The leadership styles espoused by the instructional leaders in the Division of Pasig are more transformational. There was a strong positive correlation between the leadership styles and the extent of the practice of instructional leadership for ICT. Furthermore, it was concluded that lack of funds to provide adequate access to an internet connection to successfully integrate ICT in teaching and learning, lack of relevant and effective training to facilitate utilization of ICT and lack of ICT learning resources are the challenges that emerged in the instructional leadership for ICT. At the same time, it was concluded that the creation of ICT teams to delegate responsibilities and give technical assistance in handling ICT matters and the collaboration in leading, sharing, and improving ICT expertise through LAC sessions and actual training are best practices with regard to instructional leadership for ICT.

RECOMMENDATIONS

The researcher recommended that the Department of Education establish professional development programs for instructional leadership in ICT, as well as that system-level decision-makers support mechanisms and strategies that help school leaders develop their knowledge, skills, and leadership style. As a result, instructional leaders will recognize the critical r0le they take part in facilitating the implementation of ICT in schools in order to ameliorate teaching, learning, and administrative processes. The researcher recommended that the curriculum planner should design tools for assessment and ICT learning resources for the improvement of ICT utilization. that will further enhance the instructional leadership for ICT. The researcher recommended that the school facilitates and allocates appropriate funds to provide adequate access to an internet connection to successfully integrate ICT in teaching and learning. Insofar as the proposed strategic plan implemented, the researcher recommended that the instructional leaders effectively integrate ICT into teaching and learning and enable to realization of digitalization, ICT maturity, assessment, and roles with ICT and leadership for collaboration. Furthermore, the researcher recommended that a similar study parallel to this endeavor particularly on the digital practice as assessed by the students can be conducted covering a wider scope to crosscheck or validate the results of this research.

REFERENCES

Burkus, D. (2010). Transformational Leadership Theory *https://davidburkus.com/2010/039/transformational-leadership-theory/*

Cordeiro, P. & Cunningham, W. (2012). Educational Leadership: A Bridge to Improved Practice *(5th Edition)*

Creswell, J.W. & Plano Clark, V.L. (2007). Designing and conducting mixed methods research. Thousand Oaks, CA: Sage.

Creswell, J.W. (2013). Qualitative Inquiry & Research Design: Choosing Among the Five Approaches. Thousand Oaks, CA. *SAGE Publications, Inc*. 77-83.

Dexter, S. (2008). Leadership for IT in Schools. *In J. Voogt & G. Knezek (Eds.), Handbook of Information Technology in Primary and Secondary Education*, 2, 543-554.

Doyar, I., Mina, K., & Owoh, J. (2019). Promoting Students Creative Problem-Solving Skills: Do Principal Instructional Leadership and Teacher Creative Practices Matter? Retrieved from IGI Global: *https://www.igi-global.com/chapter/promoting-student-creative-problem-solving-skills/219384*

Hadjithoma, C. & Karagiorgi, Y. (2009). The use of ICT in primary schools within emerging communities of implementation. *Computers & Education*, 52(1), 83-91. doi: 10.1016/j.compedu. 2008.06.010

Indeed Career Guide (2021). 10 Effective Leadership Styles in Education. Retrieved from https://www.indeed.com/career-advice/career-development/leadership-styles-in-education

Jackson, K.M., & Marriott, C. (2012). The interaction of principal and teacher instructional influence as a measure of leadership as an organizational quality. Educational Administration Quarterly, 48(2), 230-258. doi: 10.1177/001316IXII432925

Kirkland, K. & Sutch, D. (2009). Overcoming the barriers to educational innovation Literature reviews: futurela.

Mwawasi, F. (2014). Technology Leadership and ICT Use: Strategies for Capacity Building for ICT integration. Retrieved from https://jl4d.org/index.php/ejl4d/article/view/24/31

Ottestad, G. (2013). School Leadership for ICT and Teachers' Use of Digital Tools Research Gate: *https://www.researchgate.net/publication/286880620_School_Leadership_for_ICT_and_Teachers'_Use_of_Digital_Toolss*

Robinson, V., Hohepa, M., & Lloyd, C. (2009). School Leadership and Student Outcomes: Identifying What Works and Why Best Evidence Synthesis Best Evidence Synthesis Iteration [BES]: New Zealand Ministry of Education.

Santisteban, B. (2017). ICT education should bridge tech gaps between teacher, student – *DepEd*. https://www.rappler.com/moveph/ict-education-bridge-technology-gaps-teacher-student-deped

Spillane, J.P. (2005). Distributed Leadership. The Educational Forum, 69(2), 143-150.

Stuart, L.H., Mills, A.M., & Remus, U. (2009). School leaders, ICT competence and championing innovations. Computers & Education, 53(3), 733-741. doi: 10.1016/j.compedu.2009.04.013

Top Education Degrees, (2017). What is transformational leadership? https://www.topeducationdegrees.org/faq/what-is-educational-leadership/l

Tria, J.Z. (2020). The COVID-19 Pandemic through the Lens of Education in the Philippines: The New Normal. International Journal of Pedagogical Development and Lifelong Learning, 1(1), ep2001. https://doi.org/10.30935/ijpdll/8311o