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Technology leadership and its integration to classroom instruction

[1]Mae A. Geresola, [2]Samson M. Lausa
[1]Dr. Vicente F. Gustilo Memorial National High School, Philippines
[2]State University of Northern Negros, Philippines
Corresponding email: smlausa@sunn.edu.ph

ABSTRACT

This study aimed to determine the principals' technology leadership and its relation to the teachers' technology integration into classroom instruction. Descriptive correlational research was employed where data was obtained using the researcher's modified survey questionnaire intended to test the level of principals' technology leadership and the level of teachers' technology integration into classroom instruction. Mean and standard deviation, t-test, ANOVA, and Pearson's correlation coefficient were the statistical tools used in the study. Findings revealed that the school principals' technology leadership of being a visionary leader was high and in almost all of the constructs except on incorporating the school ICT plan with the strategic plans; motivating teacher(s) who needs ICT training to participate as part of their professional development; and recognizing and supporting faculty and staff with exemplary skills in the use of ICT which was very high. When grouped according to sex and age, principals' technology leadership was high. On the other hand, the teachers' technology integration was high but varies from low to very high when indicators of integration were considered individually. When grouped according to sex and age, teachers' technology integration was high. There is no significant difference in the level of technology integration between male and female teachers. However, there is significant difference in the level of technology integration between younger and older teachers. This study concluded that there is no significant correlation between school principals' technology leadership and teachers' technology integration to classroom instruction.

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INTRODUCTION

Technology plays an important role in our society not only today, but at the onset of Education 2.0. We are now living on the cusp of a new phase, the Education 4.0 where the desired approach to learning should be aligned with the emerging fourth industrial revolution or the commonly called, Industrial Revolution 4.0 (IR4.0). Virtually every element of our life has been affected or influenced by technology. Our educational system is one of them. Artificial Intelligence (AI) and the Internet of Things (IoT) in Industrial Revolution 4.0 drastically changed the role of school administrators, instructional methods, and classroom design (Hinton, 2018).

Gyang (2018) asserts that the influence of school leadership is substantial on the achievement of the institution's objectives, it is an essential component of school administration. It is essential to creating a supportive school climate (Smith, 2016). School leaders or principals are likened into a captain of a ship where has the ultimate control and influence to his subordinates including teachers. As leaders in technology, they are creative, participate in both formal and informal learning opportunities, enable others to take on leadership roles, and are flexible enough to adjust to changing conditions and obstacles (Sheninger & Murray, 2017).

The fact that educational technology is not included in programs that prepare students for school leadership, either in the Philippines or abroad is one of the true and substantial issues at hand. Leaders who are dedicated to fulfilling the needs of 21st-century education take the effort to learn the newest technologies on their own and encourage teachers to collaborate and have a vision for technology. Insufficient professional development remained one of the top three difficulties faced by technology executives from 2017 to 2019, according to the Leadership Survey Report (2019). Technology executives said that professional training was unavailable and that there was a deficiency in relevant training.

Principals must also be leaders in technology, both in terms of their schools' goal and vision. They have to take an active role in infrastructure planning and be involved in order to guarantee that their schools have the right kind of technology tools. Furthermore, in order to enable instructors to use technology in the classroom, they must grant them equal and sufficient access. According to a study by Uğur, N.G. & T. Koç. (2019) revealed that the majority of principals believed teachers were undertrained in technology and were not making the most of available professional development opportunities. According to the principals, the instructors were not given the necessary training to properly use technology-enhanced lesson plans or equipment in the classroom. Teachers and principals were not receiving training in the use of technology as a teaching tool from higher education institutions. In order to raise their comfort level, they should attend professional development that is in line with their passion in technology. Additionally, there is an intense demand for technology integration in education that needs to have an immediate action in adherence to DepEd order No.78 series of 2010 or also known as DepEd’s Computerization Program and DigiEd 2028, the agency’s flagship for technological advancement. However, principals are important figures when using ICT in the classroom since they are leaders in technology (Fullan, 2001; Senge, 1990; Michael, 1998; Johnston & Cooley, 2001; Hamzah, Juraime, Hamid, Nordin & Attan, 2014). Analyzing the connection amongst principals' technological leadership and teachers' technology utilization in the classroom is essential to closing the gap. These are the reasons behind the researchers' desire to investigate technology leadership and how it fits into teaching in the classroom.

OBJECTIVES OF THE STUDY

Using the National Education Technology Standards Administrator (NETS-A, 2009) constructs, this study sought to ascertain the degree of technology leadership exhibited by secondary school principals in one Cadiz City division district and how it related to the degree of technology integration demonstrated by teachers in the classroom. This study specifically looked for answers regarding the Principals' level of technological leadership in terms of visionary leadership, excellence in professional practice, digital citizenship, and learning culture in the digital age when considered overall and categorized by age and sex; the level of technology integration exhibited by teachers when considered overall and categorized by age and sex. Additionally, to ascertain whether there are any appreciable

variations in the technology leadership proficiency of principals when categorized based on constructs, gender, and age. The degree to which teachers, categorized by age and sex, have incorporated technology. Finally, the researchers sought to determine whether, when grouped as a whole and when grouped according to constructs, there is a significant association between the technological leadership of principals and the technology integration of teachers.

METHODS

RESEARCH DESIGN

A quantitative research approach that included a correlational and descriptive methodology was used in this study. The descriptive method explained the degree of teachers' technology integration and principals' technology leadership. Teachers' technology integration and principals' technology leadership were found to be related through the use of the correlational technique.

Participants of the study

The participants were the seven School Principals, 120 Junior High School teachers and 32 Senior High School teachers of District 9 of the Division of Cadiz City. Stratified random sampling was used in this study in selecting teacher- respondents, while total enumeration was used in selecting principal respondents. Proportionate stratified random sampling formula was used to equate the teacher-participants.

Instrument

This study utilized a modified survey questionnaire as data gathering instruments of the study. Two different questionnaires were used, one for the principal that measures their technology inclination towards the practice of their leadership and managerial functions while the second is for the teachers to measure their extent of integrating ICT in classroom instruction. A five-point Likert scale, with 1 denoting extremely low and 5 denoting very high, was used to evaluate the responses provided by the principals and the teachers.

Data Gathering Procedure

After the letter to conduct the study has been approved by the Schools Division Superintendent the researchers huddled to discuss the objectives of the study and the confidentiality of the information provided in the questionnaire, including their responses. The survey questionnaires were distributed to the respondents by observing the safety protocols. The survey questionnaires were then gathered right after the respondents were done answering the said questionnaires.

Ethical Consideration

The participation of the respondents in this study was voluntary. That means that they answer the questionnaires with willingness and without any condition like the involvement of money, gifts and the like. The privacy and identity of the respondents were held protected by the researchers for they have the option to write or not to write their respective names. The responses of the participants were taken in confidentiality in which the researches were the ones who conducted the study and gathered the responses of the participants.

Data Analysis

To address the research topics, the researchers employed both descriptive and inferential statistics. The study employed the mean and standard deviation to investigate the degree of technological leadership exhibited by principals and the degree of technology integration employed by teachers in the classroom. The study employed

Pearson's correlation coefficient to ascertain the link between the variables, while ANOVA and t-test were utilized to ascertain the differences between the variables.

Results and Discussion

This portion deals with the results and discussion of the gathered data in connection with the specific problems and hypothesis set forth in this study.

Table 2. Personal Profile of the School Head/Principal-Respondents

Personal Profile	Frequency	Percentage
Sex		
Male	3	42.9
Female	4	57.1
Total	7	100.0
Age		
Younger	3	42.9
Older	4	57.1
Total	7	100.0

Reflected in the table is the school head-respondents personal profile where 42.9% are males and 57.1% are females. Similarly, under the age category, 42.9% of them are younger while 57.1% of them are older. The table shows that District IX schools in the Division of Cadiz exhibits equal opportunity and diversity in principal leadership with respect to age and sex. On the other hand, table 3 below represents the teacher-respondents personal profile.

Table 3. Personal Profile of the Public Secondary School Teacher-Respondents

Personal Profile		Frequency	Percentage
Sex			
Male		20	19.4
Female		83	80.6
	Total	103	100.0
Age			
Younger		58	56.3
Older		45	43.7
	Total	103	100.0

Table 3 shows the personal profile of public secondary school teacher-respondents where male constitutes 19.4% and female is 80.6%. It revealed that teaching profession is still being dominated by women and considered as a feminine profession. As to age category, 56.3 % are younger and 43.7% are older. Result revealed that more and more younger generation teachers are embracing teaching as a profession and have strong beliefs and opinions when it comes to teaching and leadership. Deana Lyn Layton (2015).

On Principals' Technology Leadership

According to Byrom and Bingham (2001), the secret to the success of technology integration in education is technological leadership. Anderson and Dexter (2000) provide an additional conceptualization of it as decisions made by organizations, policies, or activities that support the efficient use of technology in education. The five constructs under technological leadership are displayed in the tables below.

Table 4. Principals Technology Leadership in Terms of Visionary Leadership

Visionary Leadership	Mean	Sd	VI
Participates in the division, district or school's technology planning process.	4.00	1.15	High
Communicates the gathered information about the division, district or school's technology planning and implementation efforts to my school's stakeholders.	4.14	0.90	High
Involves stakeholders in the technology planning process of the school or district	3.86	1.07	High
Incorporates the school ICT plan with the strategic plans, school improvement plan, and instructional plans	4.29	0.76	Very High
Includes a research-based technology practices in the school improvement Plan.	3.86	0.90	High
Participates in ICT- related seminars to gain insights in the use of ICT.	3.57	1.13	High
Motivates teacher(s) who needs ICT Training to participate as part of their professional development.	4.29	1.50	Very High
Recognizes and supports faculty and staff with exemplary skills in the use of ICT.	4.29	0.95	Very High
Overall Mean	4.04	0.91	High

Table 4 shows the principals' technology leadership as Visionary Leader. From among the indicators, only indicator numbers 4, 7 and 8 were interpreted as very high and the rest were interpreted as high. The overall mean is 4.04 while the standard deviation is 0.91 which is interpreted as high. It can be concluded that the visionary leadership of the respondents are high and most of them are visionary leaders.

Table 5. Principals Technology Leadership when Grouped According to Sex

Principals Technology Leadership in Terms of;	**Male**			**Female**		
	OverallMean	**SD**	**VI**	**OverallMean**	**SD**	**VI**
Visionary Leadership	4.17	0.76	High	3.75	1.50	High
Digital Age learning Culture	4.33	0.58	Very High	4.13	1.64	High
Professional Practice	4.33	0.36	Very High	4.21	1.49	Very High
Systemic Improvement	3.78	1.07	High	4.17	1.45	High
Digital Citizenship	4.61	0.54	Very High	4.17	1.45	High

Table 5 shows the principals' technology leadership when grouped according to sex. The overall mean in terms of visionary leadership 4.17 for male and 3.75 for female. The standard deviation for male is 0.76 and 1.50 for female both got the high interpretation. In terms of digital age learning, the overall mean is 4.33 for male and 4.13 for female. The standard deviation is 0.58 which is interpreted as very high and 1.64 which is interpreted as high. The overall mean in terms of professional practice is 4.33 for male and 4.21 for female. The standard deviation for male is 0.36 which is very high and 1.49 for female which is very high also. In terms of systemic leadership, the overall mean is 3.78 for male and 4.17 for female. The standard deviation for male is 1.07 and 1.45 for female which

comprise high interpretation. On the other hand, in terms of digital citizenship, the overall mean is 4.61 for male and 4.17 for female. The standard deviation for male is 0.54 which is very high and 1.45 for female which is high. The study's findings are at odds with those of Cleveland, Stockdale, and Murphy (2000), Rosenbach and Taylor (1998), Rosener, 1990, and Stelter (2002), which discovered that when it comes to work-related matters, men are thought to be more competent than women.

Table 6. Principals Technology Leadership when Grouped According to Age

Principals Technology Leadership in Terms of;	Younger			Older		
	Mean	SD	VI	Mean	SD	VI
Visionary Leadership	3.83	1.26	High	4.19	0.74	High
Digital Age learning Culture	3.56	1.71	High	4.71	0.48	Very High
Professional Practice	3.62	1.33	High	4.75	0.34	Very High
Systemic Improvement	3.33	1.53	Average	4.50	0.79	Very High
Digital Citizenship	3.67	1.53	High	4.88	0.16	Very High

Table 6 shows the principals' technology leadership in when grouped according to age. The overall mean in terms of visionary leadership is 3.83 for younger and 4.19 for older. The standard deviation for male is 1.26 and 0.74 for female both got the high interpretation. In terms of digital age learning, the overall mean is 3.56 for younger and 4.71 for older. The standard deviation is 1.71 which is interpreted as high and 0.48 which is interpreted as very high. The overall mean in terms of professional practice is 3.62 for younger and 4.75 for older. The standard deviation for male is 1.33 with high interpretation and 0.34 for female which is interpreted as very high. In terms of systemic leadership, the overall mean is 3.33 for younger and 4.50 for older. The standard deviation for younger is 1.53 with average interpretation and 0.79 for older which comprise a very high interpretation. On the other hand, in terms of digital citizenship, the overall mean is 3.67 for younger and 4.88 for older. The standard deviation for younger is 1.53 which is high and 0.16 for older which is very high. The result of the study negates with Okolo (2001) says that generally, head teachers who were older had worked for longer periods of time, attended more seminars, and took part in pertinent professional debates where they were introduced to new administrative practices.

On Teacher's Technology Integration

Integration of technology pertains to the process of integrating technology and technology-based practices (such as Internet-based research, collaborative work and communication) into regular school operations and administration tasks (Ogle et al., 2002). Hew and Brush went on to define technology integration as the process by which educators use technology to help students become more critical thinkers. Tables 18- 20 comprise the indicators on teachers' technology integration which are shown below.

Table 7. Teachers' Level of Technology Integration When Taken as a Whole and in Terms of the Issues

Teacher's Technology Integration	Mean	SD	VI
1. Send email to my students	2.61	1.21	Average
2. Send a document as an attachment to an email message to the students.	2.78	1.19	Average
3. Use worksheet to compute the grades of the students.	4.39	0.83	Very

4. Use web search engine (e.g., Google) to find Web pages related to the subject matter interests.	4.33	0.89	High Very High
5. Use a presentation software such as power point to create an interactive presentation.	3.92	0.97	High
6. Use ICT tool like laptop to collaborate with co-teachers or students, who are distant from the classroom.	4.05	0.91	High
7. Apply software programs or apps that I would use in my teaching.	3.57	1.01	High
8. Create email account.	4.14	1.03	High
9. Use Microsoft Excel to encode students' test results and performances.	4.50	0.86	Very High
10.Use mobile devices to have my students access learning activities.	4.13	0.89	High
11.Download concepts to elaborate the lesson of the day.	3.94	0.86	High
12.Create a vlog to have my students communicate and exchange ideas.	2.38	1.21	Low
13.Upload pictures or images from the web search engine which are related to the lessons.	3.90	1.06	High
14.Use Light Emitting Diode Television (LED TV)/ in the classroom.	2.78	1.33	Average
15.Send and receive text messages from my students.	4.41	1.04	Very High
16. Capture images using digital camera or scanner and transfer them to a computer.	4.15	1.04	High
17. Save and access files in the school's network from the classroom.	3.68	1.05	High
18.Use computers for planning and organizing activities.	4.30	0.76	Very High
19.Understand the nature and operation of technology systems.	4.09	0.84	High
20.Use ICT tools such as computer and cellphones to locate, evaluate, and collect information from a variety of sources.	4.46	0.81	Very High
21.Use social media portals such as Google and Facebook to communicate with the students and to share to them the latest insights which are related to the lesson.	4.37	0.96	Very High
22.Use terminology related to computers such as internet or worldwide web, modem, virus and the like appropriately in written and oral communications.	3.93	1.02	High
23.Insert videos in power point presentations.	3.93	1.02	High
24.Use video maker to prepare my lesson.	3.34	1.13	Average
25.Use word processing applications.	3.91	1.12	High
As a Whole	3.84	0.62	High

Table 7 presents the principals' technology leadership in terms of digital citizenship and teachers' technology integration when grouped as a whole. The overall mean is 3.84 and the standard deviation is 0.62 which is interpreted as high.

Table 8. Teachers' Level of Technology Integration
when Grouped According to Sex

Technology Integration	Male			Female		
	Mean	SD	VI	Mean	SD	VI
1. Send email to my students.	2.65	1.26	Average	2.60	1.20	Low
2. Send a document as an attachment to an email	2.80	1.10	Average	2.77	1.21	Average

message to the students.						
3. Use worksheet to compute the grades of the students.	4.05	0.89	High	4.46	0.80	Very High
4. Use web search engine (e.g., Google) to find Web pages related to the subject matter interests.	4.10	1.11	High	4.38	0.82	Very High
5. Use a presentation software such as power point to create an interactive presentation.	4.05	0.69	High	3.89	1.02	High
6. Use ICT tool like laptop to collaborate with co-teachers or students, who are distant from the classroom.	4.15	0.93	High	4.02	0.91	High
7. Apply software programs or apps that I would use in my teaching.	3.50	1.19	High	3.59	0.96	High
8. Create email account.	4.25	0.79	Very High	4.11	1.08	High
9.Use Microsoft Excel to encode students' test results and performances.	4.40	0.82	Very High	4.51	0.87	Very High
10.Use mobile devices to have my students access learning activities.	4.15	0.81	High	4.34	0.90	Very High
11.Download concepts to elaborate the lesson of the day.	3.70	0.86	High	4.00	0.86	High
12.Create a vlog to have my students communicate and exchange ideas.	2.25	1.06	Low	2.40	1.24	Low
13.Upload pictures or images from the web search engine which are related to the lessons.	3.40	0.99	Average	4.02	1.04	High
14.Use Light Emitting Diode Television (LED TV)/ in the classroom.	2.45	1.27	Average	2.85	1.33	Average
15.Send and receive text messages from my students.	4.30	0.92	High	4.43	1.07	Very High
16. Capture images using digital camera or scanner and transfer them to a computer.	3.75	0.85	High	4.24	0.93	Very High
17. Save and access files in the school's network from the classroom.	3.85	0.88	High	3.63	1.08	High
18. Use computers for planning and organizing activities.	4.15	0.67	High	4.33	0.79	Very High
19.Understand the nature and operation of technology systems.	3.80	0.95	High	4.15	0.80	High
20.Use ICT tools such as computer and cellphones to locate, evaluate, and collect information from a variety of sources.	4.35	0.75	High	4.48	0.83	Very High
21.Use social media portals such as Google and Facebook to communicate with the students and to share to them the latest insights which are related to the lesson.	3.95	0.94	High	4.46	0.94	Very High
22.Use terminology related to computers such as internet or worldwide web, modem, virus and the like appropriately in written and oral communications.	3.50	1.00	High	4.03	1.00	High
23.Insert videos in power point presentations.	3.70	0.86	High	3.98	1.05	High
24.Use video maker to prepare my lesson.	3.25	0.91	Average	3.36	1.18	Average
25.Use word processing applications.	3.65	1.18	High	3.97	1.10	High
As a Whole	3.68	0.57	High	3.88	0.63	High

When categorized by gender, Table 8 displays the principals' technological leadership in terms of digital citizenship and teachers' use of technology. The overall mean for male teacher- respondents is 3.68 and 3.88 for female teacher-respondents. The standard deviation for male teacher- respondents is 0.57 and for female teacher- respondents is 0.63 both with high interpretation. The findings conflict with those of Russell and Bradley (1997), who found that anxiety levels were correlated with gender and that female teachers experienced higher levels of worry than male teachers.

Table 9. Teachers' Level of Technology Integration when Grouped According to Age

Technology Integration	Younger			Older		
	Mean	SD	VI	Mean	SD	VI
1. Send email to my students.	2.70	1.29	Average	2.48	1.10	Average
2. Send a document as an attachment to an email message to the students.	2.82	1.31	Average	2.71	1.01	Average
3. Use worksheet to compute the grades of the students.	4.50	0.78	High	4.24	0.88	Very High
4. Use web search engine (e.g., Google) to find Web pages related to the subject matter interests.	4.55	0.71	Very High	4.04	1.02	High
5. Use a presentation software such as power point to create an interactive presentation.	4.08	0.88	High	3.71	1.04	High
6. Use ICT tool like laptop to collaborate with co-teachers or students, who are distant from the classroom.	4.22	0.86	Very High	3.82	0.94	High
7. Apply software programs or apps that I would use in my teaching.	3.69	0.96	High	3.42	1.06	High
8. Create email account.	4.24	0.92	Very High	4.00	1.15	High
9.Use Microsoft Excel to encode students' test results and performances.	4.57	0.77	Very High	4.40	0.96	Very High
10.Use mobile devices to have my students access learning activities.	4.50	0.84	Very High	4.07	0.89	High
11.Download concepts to elaborate the lesson of the day.	4.86	0.90	Very High	3.76	0.77	High
12.Create a vlog to have my students communicate and exchange ideas.	2.48	1.26	Low	2.24	1.15	Low
13.Upload pictures or images from the web search engine which are related to the lessons.	4.14	0.98	High	3.60	1.10	High
14.Use Light Emitting Diode Television (LED TV)/ in the classroom.	2.86	1.33	Average	2.67	1.33	Average
15.Send and receive text messages from my students.	4.50	1.08	Very High	4.29	0.99	Very High
16. Use a digital camera or scanner to take pictures, then upload them to a computer.	4.31	0.92	Very High	3.93	0.91	High
17. Save and access files in the school's network from the classroom.	3.76	1.11	High	3.58	0.97	High
18. Use computers for planning and organizing activities.	4.45	0.80	Very High	4.11	0.68	High
19.Understand the nature and operation of technology systems.	4.16	0.81	High	4.00	0.88	High

20.Use ICT tools such as computer and cellphones to seek out, assess, and gather data from multiple sources.	4.64	0.81	Very High	4.22	0.77	Very High
21.Use social media portals such as Google and Facebook to communicate with the students and to share to them the latest insights which are related to the lesson.	4.60	0.79	Very High	4.07	1.07	High
22.Use terminology related to computers such as internet or worldwide web, modem, virus and the like appropriately in written and oral communications.	4.15	0.99	High	3.64	1.00	High
23.Insert videos in power point presentations.	4.19	0.89	High	3.60	1.10	High
24.Use video maker to prepare my lesson.	3.47	1.17	High	3.18	1.07	Average
25.Use word processing applications.	4.05	1.15	High	3.73	1.07	High
As a Whole	3.99	0.55	High	3.66	0.66	High

When categorized by age, Table 9 displays the principals' technological leadership in terms of teachers' technology integration and digital citizenship. The overall mean for young teacher- respondents 3.99 and 3.66 for old teacher- respondents. The standard deviation for young teacher- respondents is 0.55 and 0.66 for old teacher-respondents both with high interpretation. The study's findings contradict those of John (2015), who claimed that middle-aged instructors use ICT at a higher rate than younger ones.

Significant Differences on the Level of Teachers' Technology Integration

Table 10. Significant Differences on the Level of Teachers' Technology Integration when Grouped According to Sex and Age

Variables	Categories	Mean	SD	Df	t	p	VI
Sex	Male	3.69	0.57	101	-1.29	0.20	Not Significant
	Female	3.88	0.63				
Age	Younger	3.99	0.55	101	2.74	0.01	Significant
	Older	3.66	0.66				

Table 10 reflects that using t-test to compare the level of teachers' technology integration, result indicates that male and female teachers do not differ significantly in the level of their technology integration ($t = -1.29$, $p = 0.20$). This means that the level of technology integration of male and female teachers is almost the same. Male and female teachers are integrating technology in their classes.

On the other hand, significant difference was observed in the level of integration of younger and older teachers ($t = 2.74$, $p = 0.01$). Significant difference favors those of the younger teachers which mean that younger teachers are more receptive to the technology utilization in the classroom. In other words, younger teachers are more technologically skillful the older ones. Bornales (2012) in her study on in the District of Canlaon showed that younger teachers are better ICT skills than the older ones. She expressed that older public-school teachers were not able to acquire the basic ICT competence needed to enhance teaching unlike the younger ones; they are contented with the traditional ways of dealing with classroom instruction, with computing grades and of the use of Manila paper during presentation. Their low responses indicated that older teachers were not anymore interested in the changes that took place in the educational system particularly those on instruction where technology was integrated.

Likewise, Pama (2019) confined in her study that younger teacher level of ICT skills is very high while those of the older teachers were low. Her findings clearly show that younger teachers are more technologically skilled than the older ones. She rationalized that the coming of computer and other technology during their time bring them challenges especially in integrating technology in the classroom. Some said that they are old enough to learn technology.
It can be implied then that younger teachers are more prepared on information technology-based transactions. Thus, motivating them to hone their skills through attendance in seminar workshops dealing on the use of ICT in the classroom.

Correlation Between School Principals' Technology Leadership and Teachers' Technology Integration

Table 11. Relationship Between School Principals' Technology Leadership and Teachers' Technology Integration

Variables Correlated	N	r	p	Interpretation
Technology Leadership in terms of visionary leadership and technology integration	7	0.16	0.73	Not Significant
Technology Leadership in terms of digital age learning culture and technology integration	7	0.31	0.50	Not Significant
Technology Leadership in terms of excellence in professional practice and technology integration	7	0.26	0.58	Not Significant
Technology Leadership in terms of systemic improvement and technology integration	7	0.05	0.91	Not Significant
Technology Leadership in terms of digital citizenship and technology integration	7	0.23	0.62	Not Significant
Technology leadership as a whole and teachers' technology integration	7	0.21	0.65	Not Significant

Table 11 revealed that the technology leadership of school principal's do not correlate to teachers' level of technology integration ($r = 0.21$, $p = 0.65$). The same results also showed that there is no association between teachers' use of technology and the amount of technological leadership at the school principal level, as measured by visionary leadership, digital age learning culture, excellence in professional practice, systemic improvement, and digital citizenship. This means that no matter how school principals are technologically advanced this does not sway the way teachers integrate technology in their classes. In this regard, teachers' perspective on using technology has important bearing of how they will integrate technology in their classes. Furthermore, according to Bizzell (2011), one of the main moderating factors that affects the connection between a principal's technological leadership and educators' use of technology is that principals' courses do not provide continuous professional development and seldom use digital technology. According to Lausa and Arceño (2020) study, teachers' low exposure to and use of technology results in their limited use and usage of ICT, or computer-mediated tools, social media, and learning management systems for instruction. Grissom and Harrington (2010) also pointed out that while a lot of research has been done on teacher professional development, less has been done on how principal professional development affects teachers' use of technology. Lausa and Arceño (2020) articulated the idea that the way in which ICT tools or technology are integrated depends on the views, experiences, and exposure that faculty members have when they are teaching.

Furthermore, future educators view the integration of ICT and technology in instruction as significant, applicable, and helpful, which is driving the shift in the educational landscape to incorporate robots, IOT, and digitalization (Lausa, Balinario, and Arceño, 2024). Therefore, training schools should prioritize funding for cutting-edge, contemporary, and high-end ICT gadgets and equipment comparable with other top universities. Lausa et al. (2024) study also found that a necessary component of successful technology integration in classroom instruction is an ICT enabling environment that the institution provides for the sole use of all student-teachers while they are in class.

CONCLUSION

Principal- respondents of the study possessed technological skills which are suited for their position. However, when variables were considered, there were differences when they were grouped according to sex and age. It can be concluded that teacher- respondents of the study were technology savvy regardless of gender or se. There was a significant difference when they are grouped according to age wherein young ones are techier compared to the older ones. Furthermore, it was found out that teacher's attitude towards the use of technology has important bearing of how they will integrate technology in their classes their teachers so that they too will be motivated in. Therefore, school principals should apply their motivating skills to their teachers especially to the older ones to keep abreast with technology which is the foundation of the 21st century skills that the learners should possess. In that way, they too will be motivated in integrating ICT in their classes to meet the standards set forth for the 21st century learners.

RECOMMENDATION

Based on the results, the researchers therefore recommend to have this ICT Capability Development/ Program and mentoring program for school principals as well as for teachers to capacitate school administrators and teachers towards an enhanced ICT skills, competencies, and attitudes in integrating it to their classes and to become more adept with the latest technology that can be applied in instructional process. This may be well-thought-out as the top priority to both administrators and teachers. Vigorous and stringent implementation and monitoring of Deped Order No. 78, s. 2010, as DepEd Computerization Program serving as the agency's blueprint in realizing DepEd DigiEd 2028, a flagship program to banner the agency's commitment to adaptability and technological advancement. In conducting future research, the researchers recommend to increase the number of participants to consider a significant representation of all districts in the Division of Cadiz City to gather a comprehensive and craft a holistic future ICT school perspective. Explore additional variables related to the study. Furthermore, full support and cooperation for both the principals and teachers are highly recommended for the success of the program.

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