

School Principals' Leadership Behaviors Vis-à-vis Teachers' Instructional Practices

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Abstract

This article focuses on school principals as leaders tasked with significant roles in attaining quality instruction. It is a descriptive study designed to investigate their instructional and technology leadership behaviors being related to teachers' instructional practices, namely: reflective thinking, development of learners' 21st Century Skills, and utilization of pedagogical approaches. The 420 respondents comprised 60 school principals and 360 teachers selected through multi-stage cluster sampling among public elementary schools, Department of Education, Schools Division of Iloilo. Results of the survey revealed that school principals' self-perception of their leadership behaviors and as perceived by their teachers were "highly practiced." Moreover, teachers have "highly practiced" reflective thinking, the development of learners' 21st Century Skills, and the utilization of pedagogical approaches. Also, no significant relationship existed between the school principals' instructional leadership behaviors and the teachers' instructional practices. Furthermore, no significant relationship existed between the school principals' technology leadership behaviors and the teachers' reflective thinking. Meanwhile, a positive and significant relationship existed between the school principals' technology leadership behaviors and the teachers' development of learners' 21st Century Skills and utilization of pedagogical approaches. Consequently, it appears that the school principals are performing their instructional and technology leadership functions very well. Additionally, the results suggest that as reflective practitioners, teachers: (1) constantly review their teaching practices for effective instruction; (2) are well-versed in equipping students with 21st Century Skills; and (3) are knowledgeable of the various pedagogical approaches that fit 21st century learners' development and learning stages.

Keywords: Instructional leadership, pedagogical approaches, reflective thinking, technology leadership, 21st Century Skills

School principals at the top of hierarchical order in schools are responsible for improving instruction and learning. As leaders, they must acquire knowledge about curriculum and instruction, intervene directly with teachers for instructional improvement (Finley, 2014), engage deeply in the school's instructional development (Hallinger, 2003), and exercise technology leadership (SEAMEO INNOTECH, n. d.) since their teachers consider them as the source of instructional advice influencing student outcomes (Robinson et al., 2008). But how can these become possible if principals fall short of the necessary skills and leadership behaviors that are influential in the development of the best teaching practices needed for pupil productivity?

Sindhvad (2009) emphasized that principals are overburdened with administrative tasks and find it difficult to make time for instructional improvement. De Guzman (2007) also mentioned that few school heads exercised genuine instructional leadership. Furthermore, Riehl and Firestone (2005) argued that few studies had been conducted on principals' influence on practices of teachers, and the relationship of leadership to classroom teaching and learning have been left unexplored.

To achieve ideal teaching practices, school principals must emphasize the technical core of instruction, curriculum, and assessment and monitor the day-to-day activities of teachers and students in schools (Marks & Printy, 2003).

In like manner, school principals' competence and expertise on how to use technology is a tool to increase productivity and creativity (Makhanu, 2010). Administrators who act as technology leaders influence teachers to integrate and use technology during instruction more successfully (MacNeil & Delafield, 1998).

On the other hand, teachers need to develop skills for reflective practice (Duthilleul, 2005) because such skills may not be present in their work. School principals can influence their teachers to become reflective thinkers by teaching them how to do it, thus leading to better teaching and improved student learning (Rodgers, 2002).

To be successful in today's world, learners must possess essential 21st Century Skills, namely: information, media and technology skills; communication and collaboration skills; and critical thinking and problem solving skills (Partnership for the 21st Century Skills, 2009). It requires

teachers to learn and use appropriate pedagogical approaches and methods themselves (Sahin, 2009).

This study is linked to instructional leadership construct focusing on leadership functions directly related to teaching and learning (Murphy, 1988). Principals must stay focused on mentoring teachers to use the learning aids in supporting the teaching-learning process. Another theory supporting this study is technology leadership which is vital for effective use of technology (Anderson & Dexter, 2005). It emphasizes that leaders should develop, guide, manage, and apply technology to different organizational operations to improve operational performance. Gardner's multiple intelligences theory, the intrapersonal intelligence domain, supports this study by providing a framework for authentic teacher reflection (Moran & Gardner, 2007). It enables informs teachers to purposely develop, examine, reexamine, and check both their self-knowledge and their capacity to use this knowledge to improve their professional practice (Sellars, 2012). This study is connected to the concept of Dewey's reflective thinking providing an opportunity to step back and think of the best strategies to achieve goals (Rudd, 2007). Furthermore, Ananiadou and Claro (2009) stated that young people will be required to have skills and competencies to be effective workers and citizens in the 21st Century. Finally, teachers must use a variety of teaching methods and activities to catch up with the 21st century skills. Indeed, it is a truism that pedagogy puts the onus on teachers to guide the learner's journey to a particular and productive end.



Figure 1. The interrelatedness of theories used in this study.

My school administrator, is interested to find out whether the school principals' instructional and technology leadership behaviors relate to the teachers' instructional practices in pursuing quality results for the school children being served.

Figure 2 presents the conceptual framework of the study.

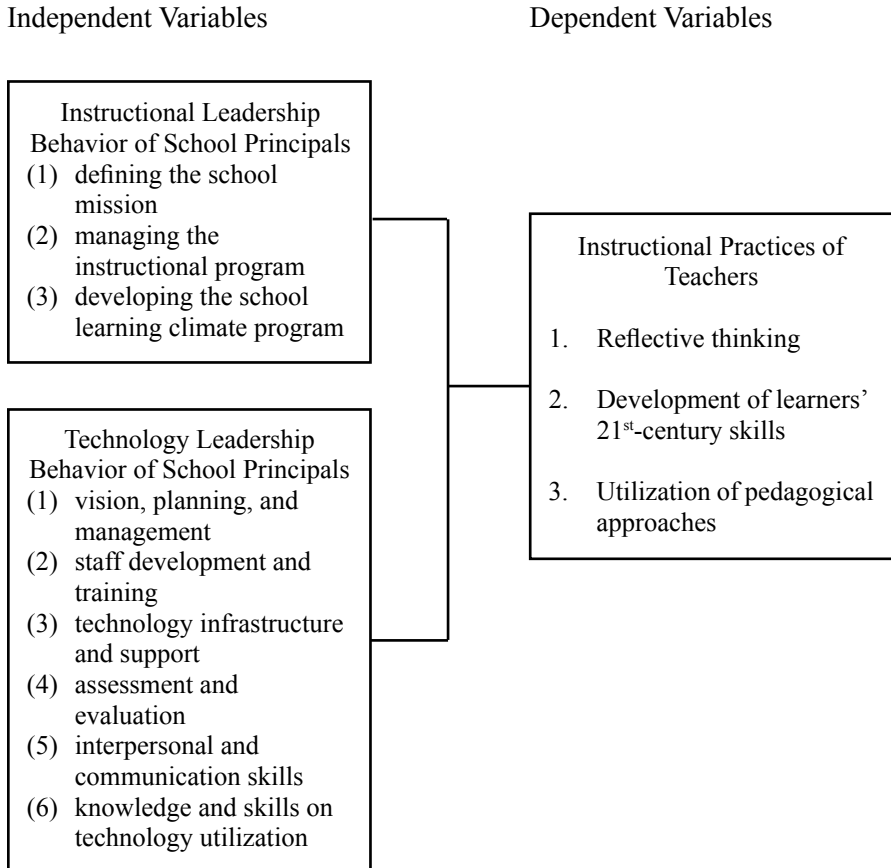


Figure 2. Leadership behaviors of school principals as related to instructional practices of teachers.

Statement of the Problem

The study ascertained the extent of relationship of the school principals' instructional and technology leadership behaviors to the teachers' instructional practices which include reflective thinking, development of learners' 21st Century Skills, and utilization of pedagogical approaches among randomly

selected elementary school principals and teachers in the Schools Division of Iloilo, School Year 2015-2016.

The following specific questions were raised:

1. What is the teachers' perception of the level of their school principals' instructional and technology leadership behaviors?
2. What is the school principals' perception their instructional and technology leadership behaviors?
3. What is the teachers' perception of their instructional practices; namely, (a) reflective thinking, (b) development of learners' 21st Century Skills, and (c) utilization of pedagogical approaches?
4. Is there a significant relationship between the school principals' instructional leadership behaviors and the teachers' instructional practices; namely, (a) reflective thinking, (b) development of learners' 21st Century Skills, and (c) utilization of pedagogical approaches?
5. Is there a significant relationship between the school principals' technology leadership behaviors and the teachers' instructional practices; namely, (a) reflective thinking, (b) development of learners' 21st Century Skills, and (c) utilization of pedagogical approaches?

Hypotheses

1. There is no significant relationship between the school principals' instructional leadership behaviors and the teachers' instructional practices; namely, (a) reflective thinking, (b) development of learners' 21st Century Skills, and (c) utilization of pedagogical approaches.
2. There is no significant relationship between the school principals' technology leadership behaviors and the teachers' instructional practices; namely, (a) reflective thinking, (b) development of learners' 21st-century skills, and (c) utilization of pedagogical approaches.

Methodology

Research Design

This investigation used correlational or associational research design. Correlational research refers to studies in which the purpose is to discover relationships between variables through the use of correlational statistics (Gall, Gall, & Borg, 2007).

In this study, school principals' instructional leadership behaviors were evaluated in terms of (a) defining the school mission, (b) managing the instructional program, and (c) developing the school learning climate program; and their technology leadership behaviors in terms of (a) vision, planning, and management, (b) staff development and training, (c) technology and infrastructure support, (d) assessment and evaluation, (e) interpersonal and communication skills, and (f) knowledge and skills in technology utilization. After determining the school principals' instructional and technology leadership behaviors, the study further looked into their relationship with the teachers' instructional practices; namely, reflective thinking, development of learners' 21st-century skills, and utilization of pedagogical approaches.

Participants of the Study

This study involved 60 public elementary schools, 360 public elementary school teachers, and 60 public elementary school principals, School Year 2015-2016. In selecting the participants, the multi-stage cluster sampling was employed. Cluster sampling is used when it is more feasible to select groups of individuals (called clusters) rather than individuals from a defined population (Gall et al., 2007). Gall et al. (2007) opined that this method involves first selecting clusters and then selecting individuals within clusters.

The following steps were carried out:

First, a list of public elementary schools was obtained in the Schools Division of Iloilo. It included the total number and the names of all public elementary schools from First to Fifth Congressional Districts, Iloilo Province. Through the fishbowl method, only three congressional districts were randomly drawn--First, Second, and Third Congressional Districts.

Next, school districts were randomly selected in each congressional district through the fishbowl method. The Slovin's formula was used to determine the number of school districts drawn. Each municipality has a central school located in the town proper. All central schools were automatically included while the non-central school in the same schools district was selected through the fishbowl method. In this investigation, 30 central schools and 30 non-central schools were included. The sample size is in line with Fraenkel and Wallen's (2006) recommendation that the minimum acceptable sample size for a correlational study must be no less than 30.

Teachers with a minimum of two-year teaching experience were included in this study. These teachers have participated in the Teacher Induction Program (TIP), a systematic and comprehensive training scheme for newly-hired teachers, with 0-3 year experience in the public school system, as part of professional development toward effective teaching and commitment for the profession. Moreover, TIP is a type of support and assistance for newly-hired teachers and has positive impacts on the teachers' classroom instructional practices (Ingersol & Strong, 2011).

To achieve balance, teachers were distributed proportionally per school according to school classification--central and non-central school. Since the implementation of the K to 12 Basic Education Curriculum in 2012, the DepEd Schools Division of Iloilo had conducted seminars and workshops to train teachers in teaching all the subjects under this new curriculum. Only those who had undergone trainings were included—teachers from first to fourth grades: eight (8) in the central school and four (4) in the non-central school. Teacher participants of each school were selected through random sampling technique. Likewise, school principals of participating schools were taken as samples. Sindhvad (2009) pointed out that the Southeast Asian Ministers of Education Organization Regional Center for Educational Innovation and Technology (SEAMEO INNOTECH) designed and implemented an innovative school principalship training program, Instructional and Curricular Excellence in School Principalship for Southeast Asia (ICExCELS), for public school principals throughout the Philippines. This training program is one factor that helps control for the knowledge of teachers acquired from their former or present school principal.

Participants provided necessary information about their personal and professional backgrounds. For school principals, the following data were

asked: gender, age, civil status, educational attainment, present position, years of experience in the current school as well as level of ICT training and period of experience with ICT (Makhanu, 2010). On the other hand, for teachers, the following data were asked: gender, age, civil status, educational attainment, present position, and number of years in teaching.

The profile of school principals and teachers is summarized in Table 1.

Table 1

Profile of School Heads and Teachers

Description	Teachers	School Heads
Entire Group	360	60
Sex		
Male	16	22
Female	344	38
Age		
21-25 yrs. old	5	
26-30 yrs. old	13	
31-35 yrs. old	67	
36-40 yrs. old	65	
41-45 yrs. old	74	
46+ yrs. old	136	
Age		
25 - 35 yrs. old		3
36 - 45 yrs. old		13
46 - 55 yrs. old		37
56 - 65 yrs. old		7
Civil Status		
Single	55	12
Married	298	48
Widow/Widower	7	0
Highest Educational Attainment		
Bachelor's Degree	172	3
Master's Degree	69	38
Doctorate Degree	3	6
CAR	90	12
Others	26	1

Present Position	
Teacher I	95
Teacher II	81
Teacher III	118
Master Teacher I	37
Master Teacher II	29
Present Position	
Head Teacher I	5
Head Teacher II	7
Head Teacher III	8
Principal I	10
Principal II	26
Principal III	3
Principal IV	1
No. of Years in Teaching	
1 - 5 yrs.	28
6 - 10 yrs.	72
11 - 20 yrs.	151
21 - 30 yrs.	91
31 + yrs.	18
Years of Experience at Current School	
2 - 6 yrs.	45
7 - 11 yrs.	7
12 - 16 yrs.	4
17 - 21 yrs.	4
22 - 26 yrs.	0
Level of ICT Training	
No training at all	2
Informal training	27
Formal training with certificate	31
Period of experience with ICT	
No experience	3
Less than 1 year	4
1 to 5 years	26
More than 5 years	7

Instruments

Five (5) instruments were used to gather data from the respondents. Of the five, two (2) standardized questionnaires were adapted: (1) Instructional Leadership Behavior of School Principals (ILBSP) (Ghamrawi & Al-Jammal, 2013) and (2) The Questionnaire for Teachers' Reflective Thinking (Choy & Oo, 2012). Moreover, three (3) researcher-made instruments were used: (1) The Technology Leadership Assessment for School Heads (TLASH), (2) The 21st-Century Skills Checklist, and (3) The Utilization of Pedagogical Approaches Questionnaire. All instruments were subjected to face and content validation.

Data-gathering instruments are summarized in Table 2.

Table 2

Data-gathering Instruments

Instrument	Dimensions to be Measured	Respondents
Instructional Leadership Behavior of School Principals (ILBSP)	(1) defining the school mission (2) managing the instructional program (3) developing the school learning climate program	Principals/ School heads and teachers
Technology Leadership Assessment for School Heads	(1) vision, planning, and management (2) staff development and training (3) technology infrastructure and support (4) assessment and evaluation (5) interpersonal and communication skills (6) knowledge and skills on technology utilization	Principals/ School heads and teachers
Questionnaire for Teachers' Reflective Thinking	(1) ability to self-assess (2) awareness of how one learns (3) developing lifelong learning skills (4) influence of belief about self and self-efficacy	Teachers
21 st -Century Skills Checklist	(1) effective communication skills (2) learning and innovation skills (3) media, information, and technology skills (4) life and career skills	Teachers
Utilization of Pedagogical Approaches Questionnaire	(1) constructivist approach (2) inquiry-based approach (3) integrative approach (4) collaborative approach (5) reflective approach	Teachers

Validity and Reliability of Instruments

A pilot survey was conducted among school principals and teachers in the selected schools in the Schools Division of Iloilo City to test the reliability of the research instruments and confirm that they concurred with study objectives (Bell, 2005). The instruments were administered among 135 respondents--15 school principals and 120 teachers. Responses from the pilot study were analyzed for accuracy of meaning and objectivity. Likewise, a Cronbach's alpha for reliability of each of the five survey instruments was obtained.

The Instructional Leadership Behavior of School Principals (ILBSP) consisted 42 items. It was designed to assess dimensions of instructional leadership. Reliability for this construct was good (above.7), with a Cronbach's alpha of .967. The Technology Leadership Assessment for School Heads (TLASH), with 18 items, was intended to assess principals' technology leadership inclinations and activities. Reliability for this construct was good (above.7), with a Cronbach's alpha of .949. With 33 items, The Questionnaire for Reflective Thinking for Teachers pertains to the reflective practices of teachers when planning their lessons as well as their perceptions toward themselves, their students, and their work. Reliability for this construct was good (above.7), with a Cronbach's alpha of .837. The Checklist for the Development of the 21st Century Skills was designed to measure the extent to which teachers from first to fourth grades develop the learners' 21st-century skills, with 15 items. Reliability for this construct was good (above.7), with a Cronbach's alpha of .947. The Utilization of Pedagogical Approaches Questionnaire has 15 items. It was made to measure the extent of frequency teachers utilized pedagogical approaches attuned to the development of the learners' 21st Century Skills during instruction. Reliability for this construct was good (above.7), with a Cronbach's alpha of .934.

Cronbach's alpha results are summarized in Table 3.

Table 3

Instrument Reliability

Instrument	Cronbach's Alpha	Items
Instructional Leadership Behavior of School Principals (ILBSP)	0.967	42
Technology Leadership Assessment for School Heads (TLASH)	0.949	18
Questionnaire for Teachers' Reflective Thinking	0.837	33
21 st Century Skills Checklist	0.947	15
Utilization of Pedagogical Approaches Questionnaire	0.934	15

Data-gathering Procedure

Permission to conduct the study was first secured from the Schools Division Superintendent, the Public Schools District Supervisors, and the School Principals. As soon as consent was granted, the researcher personally distributed and administered copies of the data-gathering instruments among the respondents with the help of the district bookkeepers and the teachers in the schools involved in the study.

Furthermore, the researcher assured the selected respondents about the confidentiality of the collected information. The investigator prepared a schedule of data gathering on selected schools among the three (3) congressional districts. The obtained data from the retrieved instruments were coded, tallied, tabulated, and computer-processed for statistical analysis.

Analysis of Data

The data collected for this quantitative study were subjected to the Statistical Package for the Social Sciences (SPSS) software. For descriptive statistics, means, frequency counts, and standard deviations were used. For inferential statistics, Pearson's r set at .05 alpha level of significance was employed.

Results and Discussion

Generally, school principals' self-perception of their instructional leadership behaviors ($M= 4.27$, $SD= 0.71$) and as perceived by their teachers ($M=3.98$, $SD= 0.88$) were "highly practiced." Elementary school principals were once classroom teachers, and they are considered generalists who can teach any subject area, making them very comfortable in providing technical assistance to teachers during instructional supervision. But this observation runs counter to the idea that instructional supervision is one that is least catered to by principals and, if ever addressed in the school, is often left to subject coordinators (Chapman, 2000).

Likewise, school principals' self-perception of their technology leadership behaviors ($M= 4.21$, $SD= 0.77$) and as perceived by their teachers ($M= 3.92$, $SD= 0.88$) were "highly practiced." It simply shows that school principals clearly understand the objective of technology leadership which is to influence teachers to use technology in their instructional practices (Ho, 2006). School heads might have realized how technology facilitates effective teaching and meaningful learning and other day-to-day activities of the school; thus, as instructional leaders, they play a role in supporting teachers using technology. Policies and standards on modern delivery systems and state-of-the-art instructional tools might have encouraged school heads to acquire technical knowledge to cope with technological advancement.

Results are revealed in Table 4.

Table 4

School Principals' Self-perception of the Level of Their Leadership Behaviors

Category	Mean	Description	SD
<i>Instructional Leadership Behaviors</i>			
A. Defining school mission	4.50	Highly Practiced	0.55
B. Managing the instructional program	4.26	Highly Practiced	0.65
C. Promoting a positive school learning climate	4.18	Highly Practiced	0.78
Average	4.27	Highly Practiced	0.71
<i>Technology Leadership Behaviors</i>			
A. Vision, planning, and management	4.34	Highly Practiced	0.65
B. Staff development and training	4.22	Highly Practiced	0.74
C. Technology, infrastructure, and support	4.43	Highly Practiced	0.71
D. Assessment and evaluation	4.07	Highly Practiced	0.71
E. Interpersonal and communication skills	4.34	Highly Practiced	0.70
F. Knowledge and skills on technology utilization	3.83	Highly Practiced	0.93
Average	4.21	Highly Practiced	0.77

Note: 4.51 – 5.00, Greatly Practiced; 3.51 – 4.50, Highly Practiced; 2.51 – 3.50, Moderately Practiced; 1.51 – 2.50, Fairly Practiced; 1.00 – 1.50, Poorly Practiced

Furthermore, the majority of the teachers perceived themselves to have “highly practiced” ($M = 4.13$, $SD = 1.06$) reflective thinking. The findings seem to imply that they are actively engaged in reflective thinking, specifically on their teaching practices. More so, school principals may have given teachers intense support for reflective practice by providing rich opportunities for interaction, shared reflection, and modeling. Probably, other factors such as length of teaching experience, attitude towards the teaching profession, and training and seminars attended may have been influential to teachers’ acquisition of skills, thus, making them “active” reflective practitioners.

Additionally, teachers’ development of learners’ 21st Century Skills is also “highly practiced” ($M = 4.08$, $SD = 0.73$). Perhaps, teachers may have taken into consideration the characteristics of the present generation of students who need to know more than core subjects. Sahin (2009) concurred to this idea by stating that students need to know how to use their knowledge and skills—by thinking critically, applying knowledge to new situations, analyzing information, comprehending new ideas, communicating, collaborating, solving problems, making decisions.

Finally, the utilization of pedagogical approaches was rated as “highly practiced” ($M = 4.12$, $SD = 0.81$). In particular, teachers might have been

trained to use methods of teaching that make students think, analyze, make connections of, and reflect on what they are taught (Corpuz et al., 2013). Besides, this is in line with one of the salient features of the K to 12 Basic Education Curriculum—"The K to 12 curriculum goes beyond memorization, the telling and isolated methods of teaching because it is highly constructivist, inquiry-based, integrative, collaborative, and reflective in approach (Corpuz et al., 2013).

Results are revealed in Table 5.

Table 5

Teachers' Self-perception of the Level of Their Instructional Practices

Category	Mean	Description	SD
<i>Reflective Thinking</i>			
A. Ability to self-assess	4.28	Highly Practiced	0.98
B. Awareness of how one learns	4.07	Highly Practiced	1.14
C. Developing lifelong learning skills	4.09	Highly Practiced	1.05
D. Influence of belief about self and self-efficacy	3.78	Highly Practiced	1.08
Average	4.13	Highly Practiced	1.06
<i>Development of Learners' 21st-Century Skills</i>			
A. Learning and innovation skills	3.94	Highly Practiced	0.69
B. Information, media, and technology skills	4.08	Highly Practiced	0.70
C. Effective communication skills	4.12	Highly Practiced	0.78
D. Life and career skills	4.18	Highly Practiced	0.69
Average	4.08	Highly Practiced	0.73
<i>Utilization of Pedagogical Approaches</i>			
A. Inquiry-based Approach	4.18	Highly Practiced	0.80
B. Constructivist Approach	4.18	Highly Practiced	0.80
C. Collaborative Approach	4.20	Highly Practiced	0.77
D. Integrative Approach	3.91	Highly Practiced	0.91
E. Reflective Approach	4.14	Highly Practiced	0.76
Average	4.12	Highly Practiced	0.81

Note: 4.51 – 5.00, Greatly Practiced; 3.51 – 4.50, Highly Practiced; 2.51 – 3.50, Moderately Practiced; 1.51 – 2.50, Fairly Practiced; 1.00 – 1.50, Poorly Practiced

No significant relationship existed between school principals' instructional leadership behaviors and teachers' reflective thinking ($r = 0.077$, $p = .558$). The result conveys that school principals' instructional leadership behaviors seem not influential in making teachers reflect on their teaching practices. Perhaps, it is innate among teachers to reflect on their teaching practices even without their principals telling them to do so.

No significant relationship existed between school principals' instructional leadership behaviors and teachers' development of learners' 21st Century Skills ($r = 0.253, p = .051$). This finding seems to suggest that teachers' ability to develop learners' 21st Century Skills does not solely depend on school principals. Perhaps, teachers are practicing peer coaching to improve their practices and enhance professional development. Parsloe and Wray (2000) defined coaching as a process that enables learning and development to occur and performance to improve. Experienced colleagues may have provided in-class support and feedback on their teaching practices, thus stimulating self-reflection. Lieberman and Miller (2000) have suggested that teachers may well experience enhanced confidence and self-esteem through the mutual support offered by other colleagues.

No significant relationship existed between school principals' instructional leadership behaviors and teachers' utilization of pedagogical approaches ($r = 0.202, p = .121$). This finding suggests that teachers may have developed and internalized a sense of initiative. With or without their school principals who actively perform their functions as instructional leaders, teachers were given the freedom to use varied pedagogical approaches to improve the teaching-learning process.

No significant relationship existed between school principals' technology leadership behaviors and teachers' reflective thinking ($r = 0.142, p = .278$). The result seems to emphasize that school principals' technology leadership does not have a connection with teachers' reflective thinking. Flanagan and Jacobsen (2003) emphasized that school leaders who are committed to ICT integration support teachers in their individual growth plans. It appears that teachers are independent enough to address practical problems they encounter. It must be noted that pedagogical practices that foster critical thinking and higher-order thinking skills provide a perfect partner for computers and technology in the classroom. Similarly, teachers might also be practicing critical reflection or constructive self-criticism of their actions with a view towards improvement.

A positive and significant relationship existed between school principals' technology leadership behaviors and teachers' development of learners' 21st Century Skills ($r = 0.313, p = .015$). It is evident that school principals and administrators pay attention to the technology issue which influences teachers' development of their learners' 21st Century Skills. Notably, as revealed by the index of determination, 9.80% of the variance in

“development of learners’ 21st Century Skills” is accounted for by the school principals’ technology leadership behavior. With this, school principals might have developed a strong belief that ICT is one of the powerful tools to utilize 21st Century Skills. Chang, Chin, and Hsu (2008) mentioned that school leaders should understand the importance of computer and information technology for students as well as enrich the technology environment for student learning. Moreover, principals who effectively lead technology integration within their schools typically perform well in student learning and teaching (International Society for Technology in Education [ISTE], 2001).

A positive and significant relationship existed between school principals’ technology leadership behaviors and teachers’ utilization of pedagogical approaches ($r= 0.290, p= .025$). It appears that school principals as technology leaders model technology utilization in accomplishing daily routines or day-to-day activities. Chang et al. (2008) support this idea by stating that school leaders in the Information Age should model technology leadership behaviors that promote teaching and learning to foster a learning environment in their organization. They further add that technology is a useful tool to facilitate student learning.

Table 6 reveals the results.

Table 6

Relationship Between School Principals’ Leadership Behaviors and Teachers’ Instructional Practices

Category (Teachers’ Instructional Practices)	School principals’ instructional leadership behavior		School principals’ technology leadership behavior	
	<i>r-value</i>	<i>sig. (2-tailed)</i>	<i>r-value</i>	<i>sig. (2-tailed)</i>
A. Teachers’ reflective thinking	0.077	.558	0.142	.278
B. Development of learners’ 21 st -century skills	0.253	.051	0.313*	.015
C. Utilization of pedagogical approaches	0.202	.121	0.290*	.025

Note: * $p < .05$

Conclusions

As instructional leaders, public elementary school principals in the Schools Division of Iloilo are performing their jobs very well as attributed to stakeholders' high expectations, DepEd officials' intensive monitoring and evaluation of performance, and past training in providing technical assistance to teachers.

However, this instructional leadership behavior may have not been channeled to teachers' instructional practices--reflective thinking, development of the 21st Century Skills, and utilization of pedagogical approaches, particularly to teachers handling first to fourth grades. They constantly reflect on their teaching practices by analyzing their own experiences in terms of decisions, actions, and results of teaching even without their school principals telling them. During instruction, they may have adopted some reflective approaches, making them question the goals and values that guide their work; examine their attitudes, beliefs, assumptions, and teaching practices; and use the information gathered as the basis for critical reflection about teaching (Zeichner & Liston, 1996). In other words, teachers have formed the habit of thinking back over situations to analyze what they did and why, and to consider how they might improve learning for their students. Besides, teachers' ability to teach is enhanced most when they are allowed to evaluate their teaching practices. It helps them to critically reflect on the theories, principles, and values underlying their understanding of teaching and learning.

Moreover, Sellars (2012) contends that teachers' skills and opportunities to effect quality educational changes are possible if they possess proficiency and capacities for reflective practice and development of self-knowledge. Being reflective practitioners may also be due to the strong collegial support in the school system which was an important component in teachers' ability to teach, making them confident risk takers in the classroom and try various teaching strategies. Discussing instructional strategies with colleagues was found to be a strong predictor of teachers making real-world connections and using critical thinking skills (Wahlstrom & Louis, 2008). Reflection is a necessity and is considered a metacognitive undertaking and an intensely personal pursuit which teachers must undertake to improve their professional practice (Sellars, 2012).

Furthermore, teachers may have done benchmarking activities to equip learners with 21st Century Skills by adopting the best practices of

other teachers. Specifically, they may have increased their understanding of the 21st Century Skills (Dede, 2010) because of their obligation to equip students with essential skills, such as information, media, and technology skills, communication and collaboration skills, and critical thinking and problem-solving skills to be successful in the 21st-century life and workplace (Partnership for the 21st Century Skills, 2009).

In like manner, teachers in the Schools Division of Iloilo seemed knowledgeable of the various pedagogical approaches appropriate for learners of the 21st Century. The teachers may have modified their teaching style and methodologies to fit learners' development and learning stages. In effect, they have become creative and resourceful practitioners. In particular, better pedagogical methods can lead to better mastery and improved retention, enabling less re-teaching and more coverage within the same timeframe (Van Lehn & the Pittsburgh Science of Learning Center, 2006).

Additionally, it seems that school principals are proactive and well-versed as regards technology leadership. Perhaps, as digital natives, they may have figured out the necessity of being technology literate to be confident in providing technical assistance and support to teachers and pupils.

Although school principals' technology leadership behavior did not relate to teachers' reflective thinking practices, it appeared that teachers managed to look back to their activities considering that they were a personal pursuit. They likewise have acquired more knowledge, skills, and competence in technology utilization, having figured out the necessity of being technology experts.

Consequently, this study revealed that school principals performed their technology leadership functions very well; however, it is a reality that a certain percentage of teachers need to learn how to use modern technology to achieve excellent learning outcomes. Thus, as school heads, they have to ensure that their teachers are given opportunities to acquire skills and competence.

Moreover, since teaching is considered a difficult job, teachers need to regularly reflect on and review their practices to be more effective with instruction. Feedback from students and supervisors must be taken into consideration to help the teachers understand themselves better to improve lesson delivery and future performance. Another practice which teachers

must engage in is action research because there are many areas in a lesson, like content and context, that needs in-depth knowledge and understanding.

Similarly, learning and innovation skills such as creativity, curiosity, critical thinking and problem-solving skills, and risk-taking may be given emphasis. It is also essential for teachers to strengthen their ability in helping learners put together information, originate solutions, and try new procedures to arrive at new understanding, concept, or idea. Teachers need to develop wise decision making by being responsible and accountable for the outcomes of their actions.

Finally, to achieve effective teaching and learning, teachers have to be skilled in utilizing the integrative approach in conducting classroom activities by combining two or more related disciplines into one instructional approach by integrating listening, viewing, reading, speaking, writing, and learning skills in all subject areas to achieve mastery. Hence, continuous training programs for teachers must be institutionalized.

Recommendations

School principals need to manifest high-quality instructional leadership behaviors for positive school outcomes. Regular training and workshops may be conducted for them to acquire meaningful experience and in-depth knowledge of supervisory practices. It is thus recommended that the DepEd Schools Division of Iloilo organize seminars on: (a) protecting instructional time, (b) maintaining high visibility, (c) providing incentives for teachers, (d) promoting professional development, and (e) providing incentives for learning.

Additionally, school principals need to be experienced and specialists in all subject areas. Having strong instructional skills and being actively engaged in instructional supervision can be helpful for them. Early research indicates that principals need to master a body of knowledge to be effective leaders by being intimately familiar with the “technical core” of schooling (Leithwood, Louis, Anderson, & Wahlstrom, 2004).

It is recommended that school principals acquire expertise, knowledge, and skills on technology utilization with the DepEd providing regular trainings for them to be effective technology leaders. The principal is

a key facilitator in the effort to infuse technology into the school; therefore, technology training for principals, as well as for teachers, may be prioritized (Holland & Moore-Steward, 2000). Technology integration cannot succeed in the absence of effective technology leadership by the principal (Anderson & Dexter, 2005). The key to effective technology integration lies in the ability of the principal to lead and guide technology coordinators and other staff members by communicating the importance and the power of technology in education.

Teachers may be provided with support in terms of resources and time for planning and reflecting about the process of supervision. Enhancing their reflective thinking skills will put them in a role model position from the perspective of students. Furthermore, research literature provides a growing body of empirical evidence that recommends teachers systematically engage in inquiries about their practice (Crawford, 2007).

In like manner, teachers can foster learners' ability such as creativity, curiosity, critical thinking and problem-solving skills, and risk taking. It is recommended that teachers introduce activities that would hone learners' creative thinking. Meanwhile, teachers need to keep themselves attuned with the trends of teaching. Seminars on teaching pedagogies and those that provide opportunities to practice the skills in the classroom and in the learning environment can also be given to teachers as part of their professional growth and development.

Another practice which teachers may engage in is action research. This academic endeavor has been viewed as a way for teachers to inquire into and improve their practice.

Further research needs to be carried out to understand the evolving role, competencies, and dispositions towards technology, by the school principals in order to best develop and support use of technology in the classroom. For future study, important 21st Century Skills, such as creativity and innovation skills, critical thinking and problem solving skills may be investigated with ICT integration to enhance them. Other variables may be explored, such as teachers' metacognition. Further studies may examine the nature of supervisory practices through observation of meetings and dialogues within the supervisory process. Discourse analysis may be employed when doing an in-depth analysis of the content of the feedback, comments, and suggestions given by the school principals during instructional supervision.

Based on the findings of this study, a proposed in-service training program for teachers and school principals was designed. The DepEd Schools Division of Iloilo may use it as a guide and basis for topics suitable during seminars. District supervisors and school principals may adopt the training program since the topics included were tailored according to the needs of the teachers and the school principals in the Schools Division of Iloilo.

The results of this study may be used by professors and instructors in honing the skills, potentials, and competencies of future teachers by applying in their teaching practices necessary ideas and concepts conveyed in this investigation. These can be very helpful in producing competent graduates who are ready to teach all subject areas under the K to 12 Basic Education Curriculum.

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