

Leading a 21st Century School in Basic Education: The Leadership Styles, Roles and Responsibilities of School Heads in Technology Integration

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ABSTRACT

The study examined leadership styles, roles, and responsibilities of school heads in leading 21st-century schools in technology integration. The views of the school heads, ICT coordinators, and teachers were gathered as the basis for the analysis and interpretation of this qualitative study. Specifically, the study employed multiple-case approach postulated by Yin (1994). Moreover, the participants of the study were purposively chosen based on identified criteria like the length of service, school size, availability of DepEd Computerization Program packages in school, and knowledge of the integration of technology in the teaching and learning process. The researchers focused on three cases, namely, the cases of school heads, ICT coordinators, and classroom teachers. The study utilized the interview, direct observation, FGD, and analysis of documents as tools for data gathering. The study revealed three emerging themes that described the leadership styles that school heads could use to lead schools through the integration of technology. These themes were repetitively described in the responses of the participants. School heads in the 21st-century exercise democratic, situational, and transformational leadership styles. The study further highlighted eight emerging themes that defined the roles and responsibilities of school heads in leading schools through technology integration. School heads are responsible for assessing teacher's technology skills, establishing the

vision and goals, providing opportunities for teachers to grow in technology integration, securing resources to support technology integration, supporting and encouraging the integration of technology, extending assistance and urging collaboration, modeling the integration of technology, and monitoring and evaluating the integration of technology consistently.

Keywords: School heads, leadership styles, roles and responsibilities, technology leadership, technology integration, 21st-century school in basic education, multiple case approach

INTRODUCTION

Schools in the 21st century focus on the implementation of digital-age literacy to invent, communicate, and produce. However, teachers are challenged when the integration of technology in teaching is considered (DepEd Order No. 35, s 2005). School heads as school leaders who lead the successful incorporation of technology in school, together with teachers, are undergoing batteries of training on technology, curriculum, learning modalities, and skills in the 21st century. These training programs help the schools to keep abreast of the trends in the country's educational system, as highlighted in RA 10533.

Consequently, the Department of Education needs a new paradigm in education. One that significantly develops learners is to acquire learning and life skills in the 21st century. Learning skills involve critical thinking, creative thinking, collaborating, and communicating. Students think innovatively, describe articulate thoughts efficiently, work with diverse teams, and utilize a wide range of idea-creation techniques.

Specifically, the Department of Education wants to improve the teaching and learning process of schools with the advent of 21st-century education and technology. School heads need to employ suitable leadership styles in performing their roles and responsibilities as bearers of change to overcome the challenges. Consequently, to be a school head in the 21st-century demands leadership of technology. No one has the power to lead if one does not have the skill. School heads need to model the integration of technology in teaching to encourage teachers (Metcalf, 2012).

The Department of Education presented transformations to improve the Basic Education of the Philippines, as specified in Republic Act No. 10533, otherwise known as the Enhanced Basic Education Act of 2013. Through this

act, it is anticipated that the Philippines could raise more skilled graduates for employment locally and internationally. Moreover, the Department of Education also implements the Computerization Program (DCP) through DepEd Order No. 78, s. 2010, otherwise known as the Guidelines on the Implementation of the DepEd Computerization. This DepEd order seeks to support school heads by providing schools with appropriate technologies that would enhance teaching and learning in the 21st century.

Furthermore, DepEd Order No. 35, s. 2005 stated that school heads need to undergo workshops and training. The order aims to enhance their skills and roles as administrative, instructional, and technology leaders. As a result, they would develop commendable technology skills, thereby transforming themselves into 21st-century school heads.

There is a need to assess how our school heads lead 21st-century schools through technology integration. There are instances that in-school learning modalities are not possible, like during the occurrence of health outbreaks, human-made, and natural disasters. Technology plays a very significant role in ensuring the continuity of learning through live chats, online and offline learning kits, and modules. Moreover, the International Telecommunications Union (2013) ranked countries based on their ICT Development Index. The Philippines ranked 103rd together with other developing countries. ICT Development Index measures the countries' progress in ICT development and its growth potential. SEAMEO INNOTECH (2010) further identified the Philippines to be in the applying stage in terms of integrating technology into education.

The circumstances presented provided the researcher with a strong drive to conduct the study and to come up with a model that would help school heads in leading 21st-century schools. The model was crafted based on the findings of the study. The investigation aimed to explore the leadership styles, roles, and responsibilities of school heads in leading 21st-century schools based on how school heads, ICT coordinators, and teachers view them.

FRAMEWORK

The study anchors on the Path-goal theory of leadership developed by House (1996). The theory indicates that the school head's main objective is to provide guidance, support, and help necessary for subordinates to increase motivation in achieving the goals of the organization effectively. The theory further suggests four leadership styles: transformational, participative or democratic, situational,

and directive-supportive leadership styles. These leadership styles would help school heads lead 21st-century schools.

Bass (1990) developed the transformational leadership style. In this kind of leadership style, school heads create changes in an organization. School heads transform organizations for the better. It is believed that school heads are extraordinary individuals. They maintain a clear vision and are skillful in inspiring others to do great things. In this light, change is another indispensable aspect with which school heads are concerned.

In the same way, the democratic leadership style postulated by Lewin et al. (1939) is more of a follower-motivational style of leadership than it is a style of genuine leader-follower development. At its core, the democratic leadership style emphasizes the importance of every individual and his/her ideas for the group. Moreover, the school heads aim to increase motivation by improving one's job satisfaction and performance in achieving one's goal. Democratic school heads are very influential, motivating, and encouraging. They listen attentively to situations and act accordingly.

The situational style of leadership introduced by Hersey and Blanchard (1969), boosts commitment and motivation. A school head influences a group of individuals to achieve a common goal. Also, the situational style of leadership selects a leadership behavior based on the characteristics of the follower and the task. Hence, a follower's motivation is contingent on the school head, picking the correct leadership approach to fit the follower and the undertaking he or she is engaged in.

In the same manner, the study anchors on the International Society for Technology in Education-National Educational Technology Standard for Administrators and I-VISA model of technology leadership (Chang, 2011). National Educational Technology Standard for Administrators presented the outright roles of school heads in the inclusion of technology in the curriculum. Likewise, I-VISA model provided five roles and responsibilities of school heads in 21st-century schools. These are considered vital elements in the addition of technology in education and technology leadership for a smarter school.

Moreover, the provisions of Republic Act No. 10533 and DepEd Order No. 35, s. 2005 highlighted the enhancement of the country's basic education and the encouragement of school heads to undergo technology training as required by the new curriculum. Department education aims to transform schools and be able to address the needs of children of the current century. Transforming schools in the 21st century needs to fill in the gaps that inhibit and challenge the change

process. These concepts served as guides for the researcher in the conduct of the present study.

OBJECTIVES OF THE STUDY

This study aimed to explore the views and perceptions of school heads, ICT coordinators, and teachers in leading 21st-century schools in basic education through the integration of technology in the teaching and learning process. Specifically, the study sought to identify the leadership styles in leading 21st-century schools through the integration of technology. Moreover, the study ascertained the roles and responsibilities of school heads in leading 21st-century schools in basic education through the integration of technology in the teaching and learning process.

METHODS

The study employed qualitative research design. Qualitative research could provide an in-depth understanding of the views and perceptions of school heads, ICT coordinators, and teachers by sharing their experiences and insights on leadership styles and roles, and responsibilities in leading 21st-century schools through the integration of technology. In detail, the study utilized a multiple-case approach which was structured by Yin in 1994. The multiple case approach deliberately produces detailed descriptions of the phenomenon using constructs to order data and relate to earlier literature. Moreover, the study focused on three cases: the school heads, ICT coordinators, and classroom teachers.

The setting of the study is the Division of Malaybalay City. The division is one of the divisions joining the force of the Department of Education in Region X- Northern Mindanao. The location is in the southern part of the region with an estimated land area of 96,919 hectares and is considered a medium-sized division. The Division of Malaybalay City consists of ten (10) school districts.

The researchers conducted the study in three (3) districts of the Division of Malaybalay City. They were considered due to the availability of internet access in these areas, current conditions of technology tools, its distance from the researcher's current station, and the potential information, which these schools could provide in enriching the results of the study.

The researchers employed purposive sampling which involves identifying and selecting individuals that are notably knowledgeable about a phenomenon of

interest. The criteria were followed in identifying the participants of the study. In this study, the purposive sample included three elementary school heads, three ICT coordinators, and nine classroom teachers. The Elementary School Head participants constituted the first case of the study. The school heads are full-fledged school heads who managed public elementary schools. They perform both instructional and administrative functions and have served the Department of Education for at least five years. The second case was represented by School ICT coordinators. These individuals are teachers who are designated by the school's division superintendent as explained in DepEd Order No. 78 s. 2010. They facilitate and operate the DCP packages, systems implemented by the Department of Education, and other ICT-related concerns. They have served for at least three (3) years. Moreover, classroom teachers who are teaching grades four to six comprised the third case of the study. The researcher made sure that they have enough knowledge about the integration of Information Communication Technology tools in teaching. Three (3) classroom teachers were picked from every identified school. These teachers have been in the Department of Education for at least two (2) years.

In the study, codes were assigned to each school head, ICT coordinator, and teacher. It was done for an easy comparison of data and information in every case for the formation of themes. The researcher put side by side the transcribed discourses of the views of school heads, ICT coordinators, and teachers. Thematic synthesis for comparison and evaluation was employed patterned after (Cruzes & Dybå, 2011).

The next process employed was cross-case analysis. The cross-case analysis is a method that simplifies the assessment of differences and similarities in the themes, events, actions, procedures, and pieces of analyses across cases. The term cross-case analysis is referred as a general umbrella term for the analysis of multiple case studies to create a synthesized output (Khan & VanWynsberghe, 2008).

RESULTS AND DISCUSSION

This section presents the results after cross-case analysis was done. Furthermore, it presents analysis and interpretation of the data gathered from the participants during the one-on-one interviews, focused group discussions, class observations, and document analysis, which were scheduled as indicated in the timeline of the study. The data gathered from each of the processes were used to supplement and corroborate the acquired information from other sources. The researcher

clustered the responses into themes presenting these in frames based on the views and experiences shared by the participants during the interviews. This kind of presentation prevents analogous and recurring ideas to duplicate.

Leadership Styles of School Heads in Leading 21st Century School in Basic Education Through Technology Integration

Table 1 shows the surfacing themes after performing a cross-case analysis on the three cases about the leadership styles of school heads in leading 21st-century schools. The findings ended up with three leadership styles particularly a democratic leadership style, a transformational leadership style, and a situational leadership style. School heads, ICT coordinators, and classroom teachers agreed that these leadership styles have the potential to implement successful technology integration that characterizes a 21st-century school. They view transformational leadership as an effective style for it is characterized by leaders who set a clear vision and allow teachers to perform and innovate by providing them continuous support, motivation, confidence, and a wholesome working relationship.

Table 1

Cross Case Analysis on Leadership Styles of School Heads in Leading 21st-Century Schools Through Integration of Technology

School heads	ICT Coordinators	Classroom Teachers	Formulated Meanings	Meaning Units	Theme
21st-century school heads trust the abilities of teachers with the appeal of bringing change to the system.	21st-century school heads allow everyone to participate, share an opinion, and be treated equally.	Share leadership by giving each one equal importance, trust to share, and being productive towards desired goals.	School heads in the 21 st century set goals and plan how the change will be achieved by allowing teachers to share, participate and lead.	Shared leadership	Democ-ratic Leadership
21st-century school heads bring change to the system with managerial competence.	21st-century school heads set common goals and visions and help people achieve them through excellent leadership.	21st-century school heads help people achieve change by setting clear goals with sufficient support and good leadership.	School heads in the 21 st century are visionary and help people acquire skills for change through encouragement, support, and exemplifying leadership skills.	Bring out change	Trans-forma-tional Leadership
21st-century school heads gather and study the school's current situation.	21st-century school heads establish clear goals and set the pace of achieving them based on teachers' capabilities.	Assess, understand and plan out things one by one based on teachers' needs and skills.	School heads in the 21st-century establish a clear vision based on the need of teachers and set the pace on how change is be achieved.	Setting the pace based on maturity	Situa-tional Leadership

Similarly, the school heads, ICT coordinators, and teachers illustrated a transformational leadership style suitable for technology leadership because it is less bureaucratic and has the capacity as a transforming agent. It does not only empower selected techie individuals but everybody as a group. In general, this leadership style increases the motivation and commitment of teachers in technology integration, for they are led in a positive course.

The study published by Khasawneh et al. (2012), on transformational leadership and organizational commitment of teachers, disclosed that school leaders who lead in a transformative way have a stronger positive relationship with committed teachers. Moreover, transformational leadership is positively linked with schools' advanced environment, and it motivates followers to do beyond what is expected from them in terms of additional hard work and superior output (Moolenaar et al., 2010).

Further, a democratic leadership style can also bring a lot of advantages to leading technology in school. School heads, ICT coordinators, and classroom teachers favored a leadership style that allows everybody to show their skills and talents by letting them share their views and ideas, rather than merely conforming to expectations. In this style, school heads facilitate healthy conversation, encourage every teacher to open up their thoughts, and synthesize all information given to formulate a very suitable and substantial technology plan for the school. Positively, teachers' productivity and commitment will also increase since a leader serves as a coach who guides and does not incur pressure.

Luthan (2011) stressed that the involvement of the staff is key to attaining high follower performance, which results in exceptional employee commitment since they feel treasured and appreciated. He also added that democratic leadership could boost the morale of employees because employees made contributions to the decision-making process. Democratic leadership style helps employees adhere to changes easily. Bringing employees on board when making choices about the organization's future actions helps fortify the relationship between the followers and the leader (Robbins, 2014).

Lastly, the respondents pointed out through their descriptions the kind of leadership that considers the current situation of the organization and teachers. The objectives and activities linked to technology integration conform to the current state of the school. Technically, this leadership style is known as situational leadership. This leadership style highlights leaders' capability to consider the employee's needs and wants to ensure their satisfaction. Likewise, situational leadership would address the incapability of teachers in integrating technology

into the curriculum in the most appropriate ways.

Situational leadership is recognized for providing suitable guidance and support to members of the organization to achieve the anticipated goals positively. This leadership style allows leaders to manage problems innovatively to overcome them. According to studies, this style is highly associated with the development of employee productivity (Cnaff & Wright, 2013). Furthermore, Shriver (2018) accentuated that situational leadership performs the following four core steps: diagnosing, adapting, communicating, and advancing.

Roles and Responsibilities of School Heads Leading 21st Century Schools in Basic Education Through Technology Integration

Table 2 displays the themes that emerged after the analysis done on different described roles and responsibilities of school heads in leading 21st-century schools through technology integration in all cases. Technology plays a major role in transforming education. School heads and teachers have to accept the changes and the occurrence of these technology tools. However, it takes a good school head who knows his roles and responsibilities in ensuring that these changes are properly managed and addressed.

Table 2

Cross-Case Analysis on the Viewed Roles and Responsibilities of School Heads in Leading 21st- Century Schools Through Integration of Technology

School heads	ICT Coordinators	Classroom Teachers	Formulated Meanings	Meaning Units	Theme
21 st - century school heads set vision and goals for the integration of technology in school.	21 st - century school heads set the technology goals of the school.	School heads establish the direction of the school through planning.	School heads have the responsibility to lead the establishment of the vision and goals of the school.	Visionary Focused	Establish the vision and goals
21 st - century school heads assess teachers' capabilities and provide opportunities for teachers to grow and develop skills for the integration of technology.	21 st - century school heads assess teachers' technology skills.	School heads determine teachers' competence and need in technology integration.	School heads assess teachers' technology skills to identify their needs.	Need assessment	Assess teacher's technology skills

Table 2 continued.

School heads	ICT Coordinators	Classroom Teachers	Formulated Meanings	Meaning Units	Theme
21 st - century school heads assess teachers' capabilities and provide opportunities for teachers to grow and develop skills for the integration of technology.	21 st - century school heads provide opportunities to teachers to foster technology growth through training appropriate for them.	School heads conduct training for teachers to acquire skills.	School heads provide and initiate activities that would allow teachers to grow and acquire technical skills.	Foster technology growth	Provide opportunities for teachers to grow in technology integration
21st-century school heads provide enough resources to be used for technology integration.	21st-century school heads produce and provide resources for technology integration to happen.	School heads supply resources used in the integration of technology.	School heads provide resources important in integrating technology in school.	Resource Provider	Secure resources to support technology integration
21st-century school heads promote and encourage the use of technology in improving learning.	21st-century school heads support and encourage the use of technology among teachers and serve as bearers of change.	School heads assist and boost the use of technology among teachers.	School heads advocate and encourage teachers to integrate technology into teaching.	Supporter and encourage	Support and encourage the integration of technology
21st-century school heads communicate well and extend technical assistance.	21st-century school heads exchange ideas to help teachers and cultivate collaboration.	School heads nurture a collaborative learning atmosphere among teachers.	School heads provide teachers with technical assistance and foster collaboration among teachers learning technology skills.	Assist and foster collaboration	Extend technical assistance and urges collaboration
21st-century school heads possess knowledge and model technology integration.	21st-century school heads model knowledge on the use of technology.	School heads show competence and model the use of technology.	School heads model technology integration and is knowledgeable about technology integration.	Reliable model	Model the integration of technology
21st-century school heads monitor integration of technology in school and foster collaboration among teachers in learning integrating technology.	21st-century school heads monitor the integration of technology regularly.	School heads evaluate and check the integration of technology.	School heads consistently monitor and evaluate teachers to ensure the integration of technology in teaching.	Monitor and Evaluate	Monitor and evaluate the integration of technology consistently

The participants of the study in all cases identified the following roles and responsibilities of school heads as very vital in leading technology integration in schools: assess teacher's technology skills, establish the vision and goals, provide opportunities for teachers to grow in technology integration, secure resources to support technology integration, support and foster the integration of technology, extend technical assistance and urge collaboration, model the integration of technology, and monitor and evaluate the integration of technology consistently.

A School head is responsible for conducting an assessment of teachers' technology skills, needs, and the school's current technology situation. This assessment is necessary for establishing the goals and plans of the school. The school head leads the creation of the school's vision, goals, and plan for technology integration. The consensual process allows everybody in the organization to develop a sense of ownership of the plan. The process will improve the commitment of teachers to achieving the technology goals of the school.

The school head secures the technology resources of the school to implement the programs and activities successfully. The implementation suggests requesting provision from the central office through the DepEd Computerization Program, sparing allotment from the school's Monitoring and Other Operating Expenses, and ensuring a strong commitment of external stakeholders for donations. Furthermore, they need to provide opportunities for teachers to grow technologically. They do this by giving consistent school in-service development programs and sending teachers to training sponsored by higher offices or even by international organizations like SEAMEO INNOTECH. Equally, it is the role and responsibility of the school head to encourage teachers by giving simple acknowledgment and appreciation to the work and output of teachers.

School heads model and demonstrate skills to teachers to heighten their motivation. They also inspire teachers to extend effort and increase productivity. Additionally, the school head extends technical assistance to teachers to improve the integration of technology in their lessons. Technology integration would also ensure the quality of their outputs. Equally, School heads also initiate collaboration and teamwork for easy diffusion of skills among teachers.

Lastly, school heads are responsible for conducting monitoring and evaluation. They ascertain effective and consistent integration of technology. They do these through continual and diligent checking of daily lesson plans, scheduling instructional supervision, and conducting mentoring and coaching activities. This process allows the school head to review the efficiency of conducted activities in achieving the technology goals of the school. School heads allow the school

to make the necessary adjustment for better integration of technology in the curriculum.

Grady (2011) emphasized the roles and responsibilities of school heads in leading 21st-century schools. She mentioned that school heads need to establish the vision and goals, carry the technology banner of the school, model the use of technology, support technology use in school, engage in professional development activities, and provide professional development for teachers. She further stated that school heads secure resources to support technology use and integration in school, advocate technology use, and communicate the uses and importance of technology in enhancing student learning experiences to the school's stakeholders.

Similarly, Chang (2011) presented five main roles and responsibilities of school heads in leading 21st-century schools through the integration of technology. I-VISA model emphasizes the roles and responsibilities of school heads as technology leaders in 21st-century schools. School heads serve as mentors and motivators to teachers. During the development processes, the school heads and teachers have the same goal as agreed upon consensually.

Additionally, school heads need to assess the technology factors of the school, initiate group vision sharing and planning, design projects, execute the plan, harvest and analyze the outcomes, and implement each stage again. Besides, school heads act as coordinators of resources. As the leaders of 21st-century schools, they facilitate the provision of supplies through internal budgeting and working for external sources to accelerate the growth of the schools.

Moreover, school heads design professional development of teachers by providing allocation for the training of staff. School heads build a good culture of continuous professional development in school. Additionally, to ensure the efficiency of the implementation, school heads initiate evaluation and monitoring of the outputs and the level of teachers in applying technology effectively in teaching.

CONCLUSIONS

The school heads can effectively lead 21st-century schools through the integration of technology by employing transformational, democratic, and situational leadership styles. The transformational leadership style allows everybody to work in a less bureaucratic system for a common goal with excellent support and motivation. The leadership style creates notable school technology transformations. Similarly, it increases the steadfastness and productivity

of teachers. The leadership style gives importance to the views and ideas of individuals for the development of an extensive technology plan. Besides, the situational leadership style ensures that school heads can provide tailored-fit plans and activities linked to the integration of technology due to an accurate need-based assessment.

School heads have roles and responsibilities to lead effectively 21st-century schools through integrating technology. They have to conduct an assessment of the technology preparedness of the school and lead the consensual establishment of a strategy that ensures the feasibility, suitability, and sustainability of technology goals, plans, and actions. Moreover, they need to support teachers by providing the school with enough technology resources and investing more in human capital, such as equipping teachers with technology skills through training.

Furthermore, school heads have to encourage teachers by appreciating their efforts through simple complements and model technology skills that are expected from teachers. Likewise, they need to help teachers by extending technical assistance and forming learning groups concerning the integration of technology in teaching. Additionally, to ensure that technology plans and activities are well-organized, school heads have to monitor and evaluate the efficacy of the plan and its activities.

RECOMMENDATIONS

The recommendations drawn from the findings of the study are the following:

1. School heads may fruitfully lead 21st-century schools through the integration of technology by paving the way for teachers to become motivated and committed by portraying the qualities of transformational, democratic, and situational leadership styles. School heads may conduct assessments and evaluations on the digital readiness of schools and classroom teachers. Moreover, they may include teachers in the planning process to effectively implement the integration of technology in schools;

2. School heads may support teachers by securing full access to sufficient and functional technology assets necessary for integrating technology in class. School heads can request additional equipment from the Department of Education or any prospective stakeholders in the community. Furthermore, school heads also can inspire teachers by extending technical assistance, nurturing collaboration, exhibiting desired skills, and doing consistent monitoring;

3. The Department of Education, in partnership with national and international agencies, may conduct an assessment of the current status of our school heads in the conduct of their roles and responsibilities as technology leaders. School heads may design comprehensive and need-based technology in-service training programs for teachers to acquire more technical skills that they can use in integrating technology into teaching; and

4. To make school heads and teachers ready in providing 21st-century education and to make sure that they are geared up with technology skills, higher education institutions through their baccalaureate and post-graduate programs may include technology-based teaching and learning, leadership styles, roles and responsibilities of technology leaders, and technology integration as substantial concepts in upgrading college training programs. School heads and teachers are also encouraged to enroll in short courses in ICT and post-graduate programs to keep themselves abreast of the latest trends in teaching. They may also attend free webinars online that would hone their knowledge about distance learning, education in the new normal, and continuity of learning amidst the pandemic.

If these recommendations are recognized and attained, it is the researcher's belief and conviction that the integration of technology in schools will become successful. School heads would become capable of leading 21st-century schools, and classroom teachers would become proficient in integrating technology to improve processes in schools, definitely in the teaching and learning process.

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