Digital Leadership of School Heads and Teachers' Technological Proficiency on School Outcomes, Schools Division Office of Laguna

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Abstract

This study aims to determine the relationship between the digital leadership of school heads and teachers' technological leadership on school outcomes in the Division of Laguna. The presentation and discussion of the major findings followed the order of the presentation of the statement of the problem. It is limited to specific areas, namely: the level of digital leadership of school heads; the level of teachers' technological proficiency; the level of school outcomes; significant relationship between the digital leadership of school heads and school outcomes and lastly significant relationship between teachers' technological proficiency and school outcomes.

The study used the correlational research design since it wanted to know "what is" the typical conditions dealt with assessing relationship between digital leadership of school heads and teachers' technological proficiency on school outcomes, Schools Division of Laguna. A survey questionnaire which was the sources of data, was utilized in this study. The study's respondents were 250 teachers from fourteen schools in the four districts in the Division of Laguna. The statistical tools used in this study were weighted mean and standard deviation to determine the mean level of digital leadership of school heads and teachers' technological proficiency on school outcomes. Pearson Product Moment of Correlation or Pearson R was used to assess the significant relationship.

It was found that the level of digital leadership of school heads in terms of digital literacy, technology adaptation, technological vision, and data driven decision making were all very high by the school heads. The level of teachers' technological proficiency in terms of attitude toward the uses of technology, planning and designing digital learning environment and experiences, self – efficacy, technical competence, and approach to collaboration were all very high. Moreover, the level of school outcomes in terms of curriculum and instruction, community engagement, infrastructure assessment, and resource assessment were all very high. Based on the data presented, analyzed, and interpreted, it is found that the level of digital leadership in terms of all variables shows no significant correlation on school outcomes variables. The level of teachers' technological proficiency in terms of their attitude toward the uses of technology and technical competence shows significant correlation on school outcomes on community engagement.

Furthermore, the statistical analysis indicated significant relationships between Digital Leadership of School Heads and Teachers' Technological Proficiency on School Outcomes, with very weak to very strong pearson correlation coefficient. The study determines that there is a significant relationship between Teachers' Technological Proficiency on School Outcomes. The null hypotheses were rejected, affirming the presence of significant relations.

Likewise, it is recommended that teachers and school administrators participate in the technology leadership and integration training program. Develop interactive lessons, tailor instruction to individual needs, and integrate digital tools into teaching practices and for future researchers they need to include other variables such as digital services and innovative performances.

Keywords: Digital Leadership; Literacy; Technological

1. Introducation

The field of education is becoming more and more difficult, particularly in the digital age when school administrators must learn how to use digital technologies for management and administration. The question for school administrators is where to start, how to start, and why. Digital leadership is not about fancy tools; rather, it's about having a strategic mentality that makes the most of the resources at hand to better our work while foreseeing the adjustments required to foster an engaged and successful school culture. It is a novel idea of leadership that develops from the symbiotic bond between the leader and technology.

The principal's role as an educational leader is becoming increasingly important. Technology has changed the way people live, from the use of the internet to the way they communicate with text messages and e-mails. This change is also evident in the education system. The study of (Naciye Güliz Uğur & Tuğba Koçtraced 2019) shows how principals' leadership roles have changed in the school setting because digital natives and society, in general, have become technologically savvy.

Digital technology and information advances nowadays have implications for learning patterns in schools. The emergence of digital based learning innovations, such as e-learning, virtual classes, game-based learning, interactive multimedia, computer-based learning, and so on fosters student's independent learning.

Learning is not only limited by classroom partitions and time, but can browse information online through computers and smartphones, so that the 21st century demands innovation in the learning process (Wahyudi, 2019).

The principal has a prominent role when it comes to creating a collaborative working culture together with teachers and learners, in addition to providing the right conditions for pedagogical development. As stated by Mendoza & Lyrma, 2020, The educational leaders were able to draw initiative and enthusiasm from the teachers to perform various tasks and nurture a climate of openness and trust to increase the organization's performance.

The fast-paced development and changes in technology have profoundly affected the teaching process, changing the methods for accessing information as well as the speed at which it is accessed. In this digital age, radical transformations have been seen in educational practices. It is evident that educational institutions must adapt to the digital transformation trend. The widespread use of technological devices in recent years and the sustainability of education under various conditions are a direct result of the sector's digital transformation. Digitalization is a global transformation that applies not only in terms of an economy, across virtually all areas of human life. Governments worldwide, however, are at varying stages of digital transformation according to their priorities for establishing a functioning digital economy based on their national agenda. In this process of digital transformation, organizational administrators cannot distance themselves from this emerging and ongoing radical process of change.

This study of Digital Leadership of School Heads and Teachers' Technological Proficiency on School Outcomes, Schools Division Office of Laguna will be beneficial to school heads, teachers, and learners, that sizable studies have claimed that school principals' technology leadership affects educational technology integration, which positively impacts learners' achievement and improvement.

1.1 Statement of the problem

Specifically, the study seeks to determine the following:

1. What is the level of digital leadership of school heads be described in terms of the following

indicators:

1.1 digital literacy;

1.2 technology adaptation;

1.3 technological vision; and

1.4 data driven decision making?

2. What is the level of teachers' technological proficiency be described in terms of the following indicators:

2.1 attitude toward the uses of technology;

2.2 planning and designing digital learning environment and experiences;

2.3 self – efficacy;

2.4 technical competence; and

2.5 approach to collaboration?

3. What is the level of school outcomes described in terms of the following indicators:

3.1 curriculum and instruction;

3.2 community engagement;

3.3 infrastructure assessment; and

3.4 resource assessment?

4. To what extent does digital leadership of school heads exert a significant relationship on school outcomes?

5. To what extent does teachers' technological proficiency exert a significant relationship on school outcomes?

2. Methodology

The study used the descriptive correlational research design since it wanted to know "what is" the typical conditions dealt with assessing relationship between digital leadership of school heads and teachers' technological proficiency to school outcomes, Schools Division of Laguna. A survey questionnaire which was the sources of data, was utilized in this study.

3. Results and Discussion

In this study, digital leadership of school heads includes digital literacy, technology adaptation, technological vision and data driven decision making.

In reality, integrating digital technology and educating teachers for the digital world present quite different challenges for principals and school administrators. This process imposes that administrators take a proactive stance in developing their new skills and experience while also evolving as individuals to guarantee that the schools are prepared for the next technology revolutions.

Table 1. *Level of Digital Leadership of School Heads in terms of Digital Literacy*

THE SCHOOL HEADS…	*Mean*	*SD*	*REmarks*
…FEEL CONFIDENT ABOUT USING COMPUTERS.	3.63	0.57	*Strongly Agree*
…HAVE KNOWLEDGE ABOUT COMPUTER TERMINOLOGIES	3.33	0.80	*Strongly Agree*
.ENSURE THAT DATA PRIVACY AND SECURITY MEASURES ARE IN PLACE FOR DIGITAL SYSTEMS.	3.68	0.56	*Strongly Agree*
.HAVE THE KNOWLEDGE ON HOW TO NAVIGATE COMPUTER PROGRAMS (MICROSOFT, GOOGLE AND WPS PROGRAMS ETC.)	3.49	0.58	*Strongly Agree*
.CAN DETERMINE THE BASIC FUNCTIONS OF EACH COMPUTER HARDWARE.	3.64	0.58	*Strongly Agree*
Overall mean: 3.55			
Overall SD: 0.45			
Interpretation: very High			

Table 1 illuminates the level of digital leadership of school heads in terms of digital literacy. As can be observed, from the summary of digital leadership of school heads average mean in table 5, it appeared that ensuring data privacy and security measures are in place for digital systems in terms of digital literacy with the highest mean of (M=3.68, SD=0.56) and remarked as *strongly agree*. While the mean is slightly lower (M=3.33, SD=0.80) of school heads' knowledge about computer terminologies in terms of digital literacy still remarked as *strongly agree.* The level of digital leadership in terms of digital literacy has an overall (M=3.55, SD=0.45) with interpretation of *very high,* which shows that school leaders possess the ability and literate to utilize technology.

Table 2. *Level of Digital Leadership of School Heads in terms of Technology Adaptation*

THE SCHOOL HEADS…	*Mean*	*SD*	*Remarks*
.USE TECHNOLOGY TO COLLECT AND ANALYZE DATA, INTERPRET RESULTS, AND PUBLISH RESULTS, TO IMPROVE TEACHING AND LEARNING.	3.56	0.56	*Strongly Agree*
.EMPLOY DIVERSE METHODS TO ASSESS THE UTILIZATION OF TECHNOLOGICAL RESOURCES, WITH THE AIM OF IMPROVING EDUCATIONAL AND OPERATIONAL PRODUCTIVITY.	3.70	0.52	*Strongly Agree*
.EVALUATE THE USE OF TECHNOLOGY AMONG FACULTY AND STAFF	3.61	0.55	*Strongly Agree*
.MAKE DECISIONS ABOUT STAFF AND THEIR PROFESSIONAL DEVELOPMENT ACCORDINGLY.	3.77	0.49	*Strongly Agree*
.ENGAGE ICT IN PROVIDING INTERVENTION PROGRAMS AND INNOVATIONS TO TEACHERS FOR CONTINUOUS PROFESSIONAL GROWTH.	3.81	0.47	*Strongly Agree*
Overall mean: 3.69			
Overall SD: 0.39			
Interpretation: very High			

Table 2 reiterates the mean level of digital leadership of school heads in terms of technology adaptation. Also shows the statements, mean standard deviation and remarks. The teacher perceived that the technology adaptation of digital leadership of school heads, with the mean of (M=3.81, SD=0.47) and remarked as *strongly agree,* suggests a high proficient of engaging ICT in terms of technology adaptation. While the mean is slightly lower (M=3.56, SD=0.56) of school heads' collecting and analyzing data to improve teaching and

learning in terms of technology adaptation, yet still acknowledged as *strongly agree*. The level of digital leadership of school heads in terms of technology adaptation has the overall (M=3.69, SD=0.39), with interpretation of *very high,* which indicates that school heads were able to utilize technology appropriately and develop teachers with the use of technology. Value the efficacy of technology in performing everyday tasks and make it evident that they are personally embracing the initiative.

Table 3. *Level of Digital Leadership of School Heads in terms of Technological Vision*

THE SCHOOL HEADS…	*Mean*	*SD*	*remarks*
.ENCOURAGE COMMUNICATION BETWEEN STUDENTS AND TEACHERS, AND TEAM WORK TO CULTIVATE A VISION FOR TECHNOLOGY.	3.23	0.70	*Strongly Agree*
.SUPPORT VARIOUS LEARNING STYLES (E.G. USE MEDIA FOR AUDITORY AND VISUAL LEARNERS.	3.38	0.69	*Strongly Agree*
.SUPPORT INNOVATION IN LEARNING BY DEVELOPING A TECHNOLOGICAL LEARNING ENVIRONMENT.	3.46	0.64	*Strongly Agree*
.INSPIRE A SHARE VISION FOR COMPREHENSIVE INTEGRATION OF TECHNOLOGY AND FOSTER AN ENVIRONMENT AND CULTURE CONDUCIVE TO THE REALIZATION OF THAT VISION	3.25	0.65	*Strongly Agree*
.MAINTAIN AN INCLUSIVE AND COHESIVE PROCESS TO DEVELOP, IMPLEMENT, AND MONITOR A DYNAMIC, LONG- RANGE, AND SYSTEMIC TECHNOLOGY PLAN TO ACHIEVE THE VISION.	3.32	0.61	*Strongly Agree*
Overall mean: 3.33 ***Overall SD: 0.47*** ***Interpretation: very High***			

Table 3 presents the mean level of digital leadership of school heads in terms of technological vision. Also shows the statements, mean standard deviation and remarks.

The teachers thought that the school heads' technology vision for digital leadership demonstrated a high level of proficiency in fostering innovation in education through the creation of a technological learning environment, as indicated by the mean of (M=3.46, SD=0.64) and remarked as *strongly agree*. Although the mean (M=3.23, SD=0.70) of school heads' support for teacher-student communication and collaborative efforts to foster a technological vision is somewhat lower, and still remarked as *strongly agree.* The overall (M= 3.33, SD=0.47) with interpretation of *very high,* revealed that digital leadership of school heads in terms of technological vision, were knowledgeable and supportive of national technology standards and promote attainment of the standards in the school.

Therefore, the results conclude that school heads support innovation in learning by developing technological environment is significantly and favorably impacted by school heads digital leadership. A school leader should actively introduce resources to school, boost students' ability to learn and teachers' teaching.

Table 4. *Level of Digital Leadership of School Heads in terms of Data Driven Decision Making*

THE SCHOOL HEADS…	*Mean*	*SD*	*remarks*
…EFFECTIVELY ALLOCATE FINANCIAL AND HUMAN RESOURCES TO ENSURE THAT TECHNOLOGY PROGRAMS ARE MAINTAINED.	3.41	0.67	*Strongly Agree*
…ENSURE THAT TEACHERS ARE MAKING FULL USE OF THE RESOURCES AT THEIR DISPOSAL BY	3.35	0.66	*Strongly Agree*

DRIVING TECHNOLOGICAL SOLUTIONS, STRATEGIC INTEGRATION, AND IMPROVEMENT MEASURES.			
…IMPLEMENT STANDARDIZED PROCEDURES TO ENSURE THE CONTINUED IMPROVEMENT AND REFINEMENT OF TECHNOLOGY SYSTEMS.	3.17	0.59	*Strongly Agree*
…USE LEARNERS' DATA TO PROMOTE THEIR SELF-REGULATION OF LEARNING AND THEIR GOALS ACHIEVEMENT	3.29	0.64	*Strongly Agree*
…PROVIDE A STUDENT-CENTERED TECHNOLOGICAL LEARNING ENVIRONMENT THAT CAN BE ADAPTED TO THE INDIVIDUAL DIFFERENCES OF STUDENTS.	3.07	0.66	*Strongly Agree*
Overall mean: 3.26			
Overall SD: 0.49			
Interpretation: very High			

Table 4 presents the mean level of digital leadership of school heads in terms of data driven decision making. Shows the statements, mean standard deviation and remarks. Teachers believed that school heads' data-driven decision-making in digital leadership was very skilled in adopting standardized processes to guarantee ongoing technological system development and refinement, with the mean of (M=3.46, SD=0.64) remarked as *strongly agree,* supports this perception, and indicates as strongly agree. The school heads' financial and human resource allocation to sustain technology programs in terms of data-driven decision making, is rather lower (M=3.23, SD=0.70) with interpretation of *strongly agree*. The overall (M=3.26, SD=0.49) with interpretation of *very high,* shows that the digital leadership of school heads in terms of data driven decision-making, states and deliver their commitments to equity, evidence-based classroom practice, enhanced learners' outcomes, and informed policymaking. It emphasizes the importance of data as a catalyst for change and highlights the importance of evidence-based practices in promoting educational excellence.

Level of Teachers' Technological Proficiency

In this study, teachers' technological proficiency includes attitudes towards technology, planning and designing digital learning environment and experiences, self- efficacy, technical competence, and approach to collaboration.

These abilities are needed to participate in a technological world. Teachers typically require proficiency in information technology to prepare papers, plan activities and information, and communicate electronically in classrooms or higher education settings.

Table 5. *Level of Teachers Technological Proficiency in terms of Attitude Towards Uses of Technology*

AS A TEACHER, I …	*Mean*	*SD*	*remarks*
…CAN USE TECHNOLOGICAL DEVICES IN DIFFERENT WAYS.	3.95	0.28	*Strongly Agree*
…KNOW HOW TO USE ICT TECHNOLOGY IS WORTHWHILE SKILL.	3.91	0.33	*Strongly Agree*
…HAVE ICT EQUIPMENT AVAILABLE TO ME WOULD IMPROVE MY GENERAL SATISFACTION IN TEACHING.	3.93	0.31	*Strongly Agree*
…KNOW THAT COMPUTERS GIVE ME OPPORTUNITIES TO LEARN MANY NEW THINGS.	3.04	0.27	*Agree*
…BELIEVE THAT IT IS VERY IMPORTANT FOR ME TO LEARN HOW TO USE ICT EQUIPMENT.	3.04	0.30	*Agree*
Overall mean: 3.57			

Overall SD: 0.22			
Interpretation: very High			

Table 5 presents the mean level of teachers' technological proficiency in terms of attitude towards the uses of technology. Also shows the statements, mean standard deviation and remarks.

The teachers proclaimed that the attitude towards technology of teachers with the mean (M=3.95, SD=0.28) stated as *strongly agree* in using technological devices in different ways. While some teachers think computers give opportunities to learn many new things, where the mean is slightly lower (M=3.04, SD=0.30) and remarked as *agree.* The overall (M=3.57, SD=0.22) with interpretation of *very high,* shows that the teachers' technological proficiency in terms of attitude towards technology, that teachers can use to support and/or enrich their teaching practices, and teachers who were in technology advanced schools used technology to promote their own already existing traditional views.

Table 6. *Level of Teachers Technological Proficiency in terms of Planning and Designing Digital Learning Environment and Experiences*

AS A TEACHER, I …	*Mean*	*SD*	*remarks*
.cAN SHARE IDEAS WITH EXPERTS AND COLLEAGUES ON AN ONLINE BASIS TO DEVELOP MY TEACHING SKILLS.	3.36	0.59	*Strongly Agree*
.CAN USE SOFTWARE (SUCH AS MICROSOFT WORD, EXCEL, POWERPOINT) THAT WILL INCREASE THE QUALITY OF INSTRUCTIONAL APPLICATIONS.	3.37	0.60	*Strongly Agree*
.CAN USE SUCH COMMUNICATION TOOLS AS E-MAIL, FORUMS, AND DISCUSSION GROUPS, TO HAVE COOPERATION AMONG MY STUDENTS, THEIR PARENTS, AND MY COLLEAGUES.	3.60	0.60	*Strongly Agree*
.CAN ALWAYS DEVELOP MYSELF IN TERMS OF NEW TECHNOLOGICAL TOOLS, TO BECOME AN EFFICIENT TEACHER.	3.25	0.55	*Strongly Agree*
.CAN EXPLAIN THE EFFECTS OF THE USE OF SUCH ELECTRONIC ENVIRONMENTS AS COMPUTERS AND THE INTERNET ON SOCIAL LIFE	3.50	0.64	*Strongly Agree*
Overall mean: 3.42			
Overall SD: 0.44			
Interpretation: very High			

Table 6 presents the mean level of teachers' technological proficiency in terms of Planning and Designing Digital Learning Environment and Experiences. Also shows the statements, mean standard deviation and remarks.

The teachers stated that using communication tools such as e-mail, forums, and discussion groups have support among students, their parents, with the mean (M=3.60, SD=0.60) resulted in *strongly agree* in using technological devices in different ways. Some teachers believe that they can always develop themselves in terms of new technological tools, to become an efficient teacher, where the mean is somewhat lower of (M=3.25, SD=0.55) and remarked as *strongly agree.* The overall (M=3.42, SD=0.44) with interpretation of *very high,* revealed that teachers in terms of planning and designing digital learning environment and experiences, provide teachers with options for management of technology resources within the context of learning activities, will enable the educators to help create and implement an inclusive teaching and learning environment to improve the learner's expectation and academic performance.

Table 7. *Level of Teachers Technological Proficiency in terms of Self –Efficacy*

AS A TEACHER, I …	*Mean*	*SD*	*remarks*
.CAN PLAN LEARNING ACTIVITIES BASED ON TECHNOLOGY USE FOR STUDENTS TO YIELD CREATIVE PRODUCTS.	3.24	0.60	*Strongly Agree*
.CAN FOLLOW TECHNOLOGY-BASED MEASUREMENT AND EVALUATION STRATEGIES WHICH WILL HELP EVALUATE THE PERFORMANCE OF STUDENTS VIA SUCH TOOLS AS PORTFOLIO AND E-MAIL.	3.25	0.75	*Strongly Agree*
.USE TECHNOLOGY FOR THE PURPOSE OF DEVELOPING APPROPRIATE STRATEGIES TO SOLVE THE REAL-LIFE PROBLEMS.	3.52	0.67	*Strongly Agree*
.CAN USE TECHNOLOGICAL DEVICES TO SEND THE RESULTS OF ANY EVALUATION OF THE TEACHING PROCESS TO STUDENTS AND THEIR PARENTS.	3.43	0.63	*Strongly Agree*
.CAN DESIGN TECHNOLOGY- BASED CLASSROOM ACTIVITIES IN A WAY THAT MY LEARNERS CAN LEARN BY THEMSELVES UNDER MY GUIDANCE.	3.28	0.66	*Strongly Agree*
Overall mean: 3.35 ***Overall SD: 0.47*** ***Interpretation: very High***			

Table 7 presents the mean level of teachers' technological proficiency in terms of Self – Efficacy. Also shows the statements, mean standard deviation and remarks.

The teachers perceived that the self - efficacy, (M=3.52, SD=0.67) resulted in high proficiency in using technological devices in different ways. On the other hand, teachers can plan learning activities based on technology use for students to yield creative products in terms of their self – efficacy where the mean is somewhat lower of (M=3.24, SD=0.60). The overall (M=3.35, SD=0.47) shows that teachers' self-efficacy, perceived ability to incorporate digital tools into classroom lessons, as well as facilitate meaningful instruction using appropriate digital tools.

Table 8. *Level of Teachers Technological Proficiency in terms of Technical Competence*

AS A TEACHER, I …	*Mean*	*SD*	*remarks*
.CHOOSE THE TECHNOLOGY APPROPRIATE TO THE TEACHING PROCESS BY EVALUATING THE PRESENT TECHNOLOGICAL SOURCES.	3.61	0.58	*Strongly Agree*
.STATE WHETHER THE ELECTRONIC SOURCES ARE SUITABLE FOR THE PLANNING OF LEARNING ACTIVITIES.	3.57	0.62	*Strongly Agree*
.INFORM STUDENTS ABOUT THE BENEFITS OF USING DIFFERENT TECHNOLOGICAL DEVICES IN THE PROCESS OF TEACHING.	3.59	0.58	*Strongly Agree*
.USE SOURCES ON THE INTERNET IN ORDER TO PREPARE DIFFERENT LEARNING ACTIVITIES AND TEACHING STRATEGIES.	3.50	0.68	*Strongly Agree*
.MAKE USE OF RESEARCH FINDINGS ABOUT TECHNOLOGY USE FOR THE PLANNING OF EDUCATIONAL ENVIRONMENTS.	3.44	0.68	*Strongly Agree*
Overall mean: 3.54 ***Overall SD: 0.45*** ***Interpretation: very High***			

Table 8 presents the mean level of teachers' technological proficiency in terms of technical competence. Also shows the statements, mean standard deviation and remarks.

The teachers believed that they could choose technology for the teaching process by evaluating the present technological sources, with the highest mean of (M=3.61, SD=0.58) remarked as *strongly agree*. Meanwhile, teachers make use of research findings about technology use for the planning of educational environments in terms of their technical competence where the mean is slightly lower of (M=3.44, SD=0.68) yet remarked as *strongly agree.* The overall (M=3.54, SD=0.45) with interpretation of *very high,* teachers' technical proficiency from the above table demonstrated that teachers were highly proficient in utilizing technology in preparing various learning activities and teaching strategies.

Table 9. *Level of Teachers Technological Proficiency in terms of Approach to Collaboration*

AS A TEACHER, I …	*Mean*	*SD*	*remarks*
…WORK IN PARTNERSHIP IN THE IMPLEMENTATION LEGAL AND ETHICAL (MORAL) REGULATIONS PERTAINING TO DATA PROTECTION, INFORMATION SECURITY, COPYRIGHT, AND PRIVACY AS THEY RELATE TO THE USE OF ICT.	3.66	0.49	*Strongly Agree*
…COLLABORATE AND IMPLEMENT TECHNOLOGY-BASED LESSONS THAT HELP LEARNERS TO PRODUCE ORIGINAL PRODUCTS AND DEVELOP THEIR ABILITIES TO ANALYZE, SYNTHESIZE AND CRITICIZE.	3.66	0.49	*Strongly Agree*
…COLLABORATE, PLAN AND IMPLEMENT TECHNOLOGY-BASED LESSONS THAT HELP LEARNERS TO PRODUCE ORIGINAL PRODUCTS AND DEVELOP THEIR ABILITIES TO ANALYZE, SYNTHESIZE AND CRITICIZE.	3.58	0.51	*Strongly Agree*
…UNDERTAKE A COURSE OR WEBINAR ON INTEGRATING ICT INTO TEACHING AND LEARNING DEVELOPED TECHNOLOGY-BASED TEACHING INSTRUCTION.	3.41	0.51	*Strongly Agree*
…DEVELOP TRAINING/WEBINARS ON ICT APPLICATIONS FOR TEACHERS (E.G., WORD PROCESSING, PRESENTATIONS, INTERNET USE, SPREADSHEETS, DATABASES) HELPS TO EASE TEACHERS' WORK.	3.34	0.49	*Strongly Agree*
Overall mean: 3.53 ***Overall SD: 0.39*** ***Interpretation: very High***			

Table 9 presents the mean level of teachers' technological proficiency in terms of Approach to Collaboration. Also shows the statements, mean standard deviation and remarks.

The table 9 reveled that the educators believed that the collaboration approach with the highest mean of (M=3.66, SD=0.49) remarked as *strongly agree* in implementation of legal and ethical (moral) regulations pertaining to data protection and implementing technology-based lessons that help learners to produce original products and develop their abilities to analyze. Teachers develop training/webinars on ICT applications for teachers help to ease teachers' work in terms of their approach to collaboration where the mean is a bit lower of (M=3.34, SD=0.49) yet still remarked as *strongly agree.* The overall (M=3.53, SD=0.39) with interpretation of *very high,* states that utilizing social networking skills and encouraging collaboration allows learners and teachers to demonstrate responsiveness to others and work together in different environments.

Table 10. *Level of School Outcomes in terms of Curriculum and Instruction*

Statement	*Mean*	*SD*	*remarks*
…CURRICULUM ALLOW TIME TO INTEGRATE	3.17	0.61	*Strongly Agree*

ICT IN TEACHING.			
…FEEL COMFORTABLE USING DIGITAL DEVICES DURING CLASS DISCUSSION.	3.28	0.61	*Strongly Agree*
…USE ICT IN TEACHING AND LEARNING NOT BEING A GOAL IN OUR SCHOOL.	3.25	0.64	*Strongly Agree*
…CAPABLE TO LEARN MORE ABOUT DIGITAL TECHNOLOGIES.	3.30	0.66	*Strongly Agree*
…THINK THAT MY LEARNING CAN BE ENHANCED BY USING DIGITAL TOOLS AND RESOURCES.	3.40	0.67	*Strongly Agree*
Overall mean: 3.28			
Overall SD: 0.44			
Interpretation: very High			

Table 10 presents the mean level of school outcomes in terms of Curriculum and Instruction. Also shows the statements, mean standard deviation and remarks. The teachers believed that the school outcomes in terms of curriculum and instruction, that learning can be enhanced by using digital tools and resources with the highest mean of (M=3.40, SD=0.67) with the verbal interpretation of *strongly agree*. On the other hand, teachers assumed that curriculum allows time to integrate ICT in curriculum in teaching in terms of curriculum and instruction with the lowest mean of (M=3.17, SD=0.61) and verbal interpretation of *strongly agree*. The overall (M=3.28, SD=0.44) with interpretation of *very high,* revealed that the school outcomes in terms of curriculum and instruction, learners were easily learning about digital technologies, opportunity for teachers to differentiate instruction to modify information for the appropriate learning capabilities of their students. The use of technology can also enable learners to work in their own way.

Table 11. *Level of School Outcomes in terms of Community Engagement*

Statement	*Mean*	*SD*	*remarks*
…ENABLES STUDENTS TO USE ICT TO EXPRESS THEIR IDEAS AND THOUGHTS BETTER.	3.84	0.39	*Strongly Agree*
…PROMOTES ACTIVE AND ENGAGING LESSON IN USING ICT FOR STUDENTS' BEST LEARNING EXPERIENCE	3.84	0.39	*Strongly Agree*
…TECHNOLOGY CAN HELP US EXPRESS OURSELVES AND OUR IDEAS IN SO MANY WAYS -- WE CAN BLOG, CREATE MUSIC AND ART, AND TELL STORIES THROUGH VIDEO.	3.80	0.42	*Strongly Agree*
…THE INTERNET OFFERS OPPORTUNITIES FOR US TO BE CONSUMERS OF INFORMATION, AS WELL AS CREATORS AND CONTRIBUTORS.	3.86	0.37	*Strongly Agree*
…THE USE OF ICT HELPS STUDENTS TO FIND RELATED KNOWLEDGE AND INFORMATION FOR LEARNING.	3.42	0.54	*Strongly Agree*
Overall mean: 3.75			
Overall SD: 0.31			
Interpretation: very High			

Table 11 presents the mean level of school outcomes in terms of Community Engagement. Also shows the statements, mean standard deviation and remarks.

The teachers assessed school outcomes in terms of community participation, the mean score of (M=3.86, SD=0.37) and interpreted as *strongly agree*, stating that internet offers opportunities for us to be consumers of information. Meanwhile the use of ICT helps students to find related knowledge and information for learning is slightly lower (M=3.42, SD=0.54), with verbal interpretation of *strongly agree.* The overall (M=3.75, SD=0.31) with interpretation of *very high,* revealed that community engagement, is clear that school

technology engagement improves the effectiveness of learners' education when it comes to utilization of digital technologies.

Table 12. *Level of School Outcomes in terms of Infrastructure Assessment*

Statement	*Mean*	*SD*	*remarks*
…THERE IS A FUNCTIONAL COMPUTER CLASSROOM IN THE SCHOOL.	3.67	0.54	*Strongly Agree*
…LACK OF ADEQUATE ICT FACILITIES AND EQUIPMENT.	3.68	0.53	*Strongly Agree*
…SCHOOL SUSTAINS BUDGET FOR THE IMPLEMENTATION / MAINTENANCE OF ICT EQUIPMENT.	3.33	0.54	*Strongly Agree*
…LACK OF PEDAGOGICAL MODELS ON HOW TO USE ICT FOR LEARNING	3.27	0.53	*Strongly Agree*
…LACK OF INTERNET ACCESS FOR LEARNERS IN E-LABORATORY.	3.39	0.72	*Strongly Agree*
Overall mean: 3.47 ***Overall SD: 0.42*** ***Interpretation: very High***			

Table 12 presents the mean level of school outcomes in terms of infrastructure assessment. Also shows the statements, mean standard deviation and remarks.

The teachers assessed school outcomes in terms of infrastructure assessment, as can be observed that functional computer classroom in the school has the highest mean score of (M=3.67, SD=0.54) and interpreted as *strongly agree*, meanwhile the lack of pedagogical models on how to use ICT for learning is slightly lower with the mean and standard deviation of (M=3.27, SD=0.53), with verbal interpretation of *strongly agree.* The overall (M=3.47, SD=0.42) with interpretation of *very high*, states that school outcomes in terms of infrastructure assessment in schools have ICT equipment but were not sufficient and lack of pedagogical models on how to use it, that teachers and learners were not able to utilize it in classrooms.

Table 13. *Level of School Outcomes in terms of Resource Assessment*

Statement	*Mean*	*SD*	*remarks*
…ICT INTEGRATION ABILITY IS INCREASED THROUGH TRAININGS GIVEN BY YOUR SCHOOL.	3.49	0.54	*Strongly Agree*
SCHOOL IS CONSCIOUS ABOUT ICT TRAINING FOR TEACHERS …SCHOOL IS SENSIBLE ABOUT ICT TRAINING FOR TEACHERS.	3.46	0.54	*Strongly Agree*
…SCHOOL ADEQUATELY STAFFED WITH TRAINED TEACHERS CAPABLE OF EFFECTIVE ICT INTEGRATION.	3.55	0.56	*Strongly Agree*
…SCHOOL ENCOURAGES YOU TO USE SUBJECT-SPECIFIC DIGITAL TEACHING AIDS IN TEACHING.	3.59	0.54	*Strongly Agree*
EEL YOUR SCHOOL TAKE EFFECTIVE STEPS IN MENTORING OF TEACHERS TO PROVIDE THEM WITH ICT SKILLS AND CULTURE …SCHOOL MANAGEMENT ASSISTS YOU IN IMPROVING YOUR ICT INTEGRATED TEACHING.	3.78	0.45	*Strongly Agree*
Overall mean: 3.57 ***Overall SD: 0.34***			

Interpretation: very High

Table 13 presents the mean level of school outcomes in terms ofresource assessment. Also shows the statements, mean standard deviation and remarks.

Table 16 reveled that school management assistance improves ICT integration, with the highest mean score of (M=3.78, SD=0.45) and interpreted as *strongly agree*, meanwhile the school is sensible about ICT training for teachers is slightly lower with the mean and standard deviation of (M=3.46, SD=0.54), with verbal interpretation of *strongly agree.* The overall (M=3.57, SD=0.34), with interpretation of *very high,* shows that resource assessment on school outcomes were essential for teachers to increased their professional development to ease the use of technology integration inside the classroom.

Test of Significant Relationship between the Digital Leadership of School Heads and the School Outcomes

To test the significant relationship between the digital leadership of school heads' digital leadership, technology adaptation, technological vision and data driven decision making and the school outcomes in terms of curriculum and instruction, community engagement, infrastructure assessment and resource assessment they were treated statistically using the Pearson correlation.

Table 14. *Significant Relationship between the Digital Leadership of School Heads and the School Outcomes*

Digital Leadership of School Head (IV)	School Outcomes (DV)			
	Curriculum and Instruction	Community Engagement	Infrastructure Assessment	Resource Assessment
Digital Literacy:				
Pearson Correlation	0.41	0.56	0.56	-0.43
Significance(2-Tailed)	.503	.361	.368	.488
N	264	264	264	264
Technology Adaptation:				
Pearson Correlation	.001	-0.43	0.11	.111
Significance(2-Tailed)	.985	.490	.862	0.72
N	264	264	264	264
Technological Vision:				
Pearson Correlation	0.98	.013	-.014	.102
Significance(2-Tailed)	.113	.828	.816	.097
N	264	264	264	264
Data Driven Decision Making:				
Pearson Correlation				
Significance(2-Tailed)	-0.74	-0.21	-0.40	-0.14
N	.231	.729	.519	.821
	264	264	264	264

The correlation coefficients measure the strength and direction of the relationship between the digital leadership of school heads and school outcomes. A positive correlation indicates that as digital leadership of school heads increase, school outcomes also tend to increase.

Correlations were computed among four digital leadership of school heads on data for 264 teachers. A correlation coefficient of 1 indicates a perfect positive correlation, while a coefficient of -1 indicates a perfect negative correlation.

The correlation coefficients range from 0.001 to 0.74, indicating a very weak relationship. The digital leadership of school heads *digital literacy, technology adaptation, technological vision, and data driven decision making* were observed to have no significant relationship to school outcomes' *curriculum and instruction, community engagement, infrastructure assessment and resource assessment*. This means that the collaboration of school heads, technology, and resources creates digital leadership. The ability of educational leaders to lead digitally is crucial in the face of technological advancements today. Developing digital leadership is possible if the school leaders continue to push hard and gives every student the chance to participate in indirect interaction with electronic devices.

On the other hand, the correlation coefficients range from -0.14 to -0.74, indicating a low negative relationship between the digital leadership of school heads and the school outcomes, significant 2 tailed or the p-value is greater than the 0.05 level of significant.

This indicates that the school heads need to consider the digital leadership to improve the quality of education, including learners and teachers have access to digital technology and the internet, the existence of quality and quantity of materials, and teachers have the knowledge and skills to operate digital technology. In today's rapidly evolving digital age, it is imperative for school heads to embrace digital leadership in order to improve the quality of education.

Digital leadership involves utilizing technology and online resources to enhance teaching and learning experiences for both students and educators. One reason why school heads need to consider digital leadership is the ability to provide personalized learning opportunities. With access to various online platforms and tools, teachers can tailor their lessons to meet the individual needs of each student, ultimately leading to improved academic performance.

In conclusion, the impact of digital leadership on school outcomes cannot be overstated. School heads must continue to adapt to the ever-changing technological landscape to ensure that their schools remain at the forefront of educational excellence.

Table 15. *Significant Relationship between the Teachers' Technological Proficiency and the School Outcomes*

Teachers' Technological Proficiency (IV)	**School Outcomes (DV)**			
	Curriculum and Instruction	Community Engagement	Infrastructure Assessment	Resource Assessment
Attitude Towards Uses of Technology:				
Pearson Correlation	-.060	.201**	-.089	.055
Significance(2-Tailed)	.335	<.001	.152	.377
N	264	264	264	264
Planning And Designing Digital Learning Environments and Experiences:				
Pearson Correlation	.042	.019	-.002	-.034
Significance(2-Tailed)	.499	.756	.977	.582
N	264	264	264	264
Self- Efficacy:				
Pearson Correlation	-.061	-.013	-.097	-.024
Significance(2-Tailed)	.320	.834	.115	.699
N	264	264	264	264

Technical Competence:				
Pearson Correlation	.049	-.164**	.052	-.048
Significance(2-Tailed)	.432	.007	.399	.438
N	264	264	264	264
Approach to Collaboration:				
Pearson Correlation	.011	.075	-.087	.048
Significance(2-Tailed)	.859	.225	.158	.440
N	264	264	264	264

The correlation coefficients measure the strength and direction of the connection between the teachers' technological proficiency and school outcomes. A positive correlation indicates that as teachers' technological proficiency increases, school outcomes also tend to increase.

Correlations were computed among four teachers' technological proficiency on data for 264 teachers. A correlation coefficient of 1 indicates a perfect positive correlation, while a coefficient of -1 indicates a perfect negative correlation.

1. Conclusion and Recommendation

Based on the findings of the study, the following conclusions are hereby offered:

The digital leadership of the school heads in terms of digital leadership, technology adaptation, technological vison and data driven decision making have no significant relationships on school outcomes, therefore it is accepted, it indicates that the school heads were ready to face the technology infusion in school digital education. Also, The teachers' technological proficiency in terms of planning and designing digital learning environment and experiences, self- efficacy, and approach to collaboration making have no significant relationships on school outcomes, it shows that they are knowledgeable about how they will incorporate technology in day-to-day teaching, as well as updated on trends and demands of 21st century education.

However, in terms of attitude toward the uses of technology and technical competence showing a significant relation. When teachers are proficient in using technology, they are better equipped to engage students and enhance their learning experience. This proficiency also allows teachers to access a wide range of resources and tools that can support their teaching practices. Additionally, teachers who have a positive attitude towards technology are more likely to integrate it into their lessons effectively. Therefore, it is rejected.

Based on the findings and conclusions of the study, the following recommendations are hereby offered:

1. That school heads prioritize developing their own digital literacy skills and understanding of emerging technologies. By staying informed and up to date on the latest trends in educational technology, school heads can make informed decisions about integrating digital tools into the curriculum and improving overall student learning outcomes.
2. That the teachers should participate in ongoing professional development opportunities. This could include attending workshops, webinars, or online courses focused on integrating technology into the classroom. By continuously learning and expanding their knowledge of technology, teachers can better meet the needs of their tech-savvy students.
3. That the Division office should include the nature and concept of digital citizenship in school management and leadership. For them to do this, this indicator should be included in the School Head's Development Program, as one of the foundational courses of leadership for the principal, appropriate trainings, and seminars for teachers to support their professional development.

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