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Technostress Among School Heads and Teachers of Baggao West District: A Basis for an ICT Intervention Plan

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Abstract

This study explored the technostress, a growing concern, among school heads and teachers in the Baggao West District, Philippines. The aim was to inform the development of an intervention plan to create a more supportive technological environment for educators.

A descriptive correlational design was employed to investigate relationships between variables influencing technostress. Questionnaires were distributed to all school heads and purposive samples of EPP-ICT teachers.

The findings revealed that school heads, typically older with higher qualifications, reported higher technostress levels compared to teachers. Factors contributing to technostress included age, qualifications, job security, workload, and a lack of ICT training. Educators commonly experienced stress related to integrating technology into teaching processes, dealing with technical issues, and keeping pace with rapid technological advancements.

Interestingly, the study identified a statistically significant gender difference, with female teachers reporting greater technostress.

The age difference between school heads and teachers suggests a potential link between age and comfort level with technology, which might influence technostress. The identified gap in ICT training highlights the need for targeted interventions to equip educators with the necessary skills.

Based on the findings, the study proposes recommendations to create a more supportive technological environment. These include implementing targeted training programs, providing readily available technical support systems, and fostering a culture of collaboration among educators.

The findings provided a strong foundation for developing an ICT intervention plan that addresses the identified technostress factors through targeted training, technical support, and collaborative practices. The study also highlights the need for further research into the gender dimension of teacher technostress to inform the development of more needs-based interventions..

Keywords: *ICT, ICT teachers, ICT training, technological environment, technostress*

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INTRODUCTION

The education sector has undergone a significant transformation in recent years, largely driven by the ubiquitous presence of technology. This integration of technology, while offering numerous advantages, has also introduced new challenges for school administrators and teachers. This study focuses on the Baggao West District and explores the phenomenon of technostress among school heads and teachers in this region.

The COVID-19 pandemic served as a catalyst for the widespread adoption of technology in educational settings. School closure mandates necessitated a shift towards remote learning approaches. The Department of Education (DepEd) implemented the Basic Education Learning Continuity Plan (BELCP) to ensure educational continuity during this challenging period. This plan heavily relied on technology to facilitate virtual classrooms, online learning modules, and communication between teachers, students, and parents.

While technology offered a solution for uninterrupted education during the pandemic, it also introduced new complexities in which School heads, now responsible for overseeing virtual operations, faced a steeper learning curve. Tasks like conducting virtual meetings, trainings, and classroom observations demanded a new set of technological skills. Similarly, teachers had to adapt their instructional methods to incorporate online tools and platforms effectively.

Research suggests that strong leadership qualities are no longer the sole competency required for effective school administration. Technological proficiency has become an equally important aspect of the role. School heads need to be comfortable using various technological tools to manage various administrative tasks, access information, and communicate efficiently.

However, the current landscape reveals a gap between the growing demand for technological skills and the existing comfort level of some school heads and teachers. While training programs exist, some educators might still feel a lack of confidence in their technological abilities. This lack of confidence can lead to feelings of stress and overwhelm, impacting their overall job satisfaction and potentially hindering their effectiveness.

Technostress, a concept emerging from the growing presence of technology in the workplace, refers to the negative psychological and physiological effects resulting from the inability to cope with new technologies. Studies have shown that educators who struggle with integrating technology into their daily routines are more susceptible to technostress. This can manifest as feelings of anxiety, frustration, and exhaustion.

Furthermore, the increased workload associated with virtual tasks and potential technical difficulties can exacerbate technostress. School heads and teachers might experience work fatigue, characterized by emotional exhaustion, depersonalization, and a decline in overall performance. Ultimately, unaddressed technostress can negatively impact not only the well-being of educators but also the overall performance of schools.

Despite the challenges posed by technology integration, its potential benefits for education are undeniable. However, to fully harness these benefits, it is crucial to address the issue of technostress among school heads and teachers. This research aimed to investigate the specific challenges faced by educators in the Baggao West District due to technology use.

By understanding the root causes of technostress in this region, the district can develop a targeted ICT intervention plan. The proposed plan focuses on equipping school heads and teachers with the necessary skills and support systems to navigate the technological landscape confidently. Ultimately, this

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research aspires to contribute to a more positive and productive learning environment for both educators and students in the Baggao West District.

Statement of the Problem

This study aimed to assess the technostress of school heads and teachers in Baggao West District, Baggao, Cagayan for the School Year 2023-2024, as basis for an ICT intervention Plan.

Specifically, it sought to answer the following questions:

1. What is profile of the School Heads/ Teacher respondents in terms of:
   1.1 Age
   1.2 Sex
   1.3 Highest Educational Attainment
   1.4 Length of Service in the department as a school head
   1.5 Last Position held
   1.6 Number of subordinates
   1.7 School Classification
   1.8 Number of Relevant Trainings on ICT
2. What is the level of technostress of the two groups of respondents with respect to:
   2.1 Learning-Teaching Process Oriented
   2.2 Profession Oriented
   2.3 Technical Issue Oriented
   2.4 Personal Oriented
   2.5 Social Oriented
3. Is there a significant difference on the level of technostress of the two groups of the respondents?
4. Is there a significant difference on the level of technostress of the two groups of respondents when grouped according to profile variables?
5. Is there a significant relationship on the level of technostress of the respondents and their profile variables?
6. What ICT intervention plan may be crafted based on the findings of the study?

Hypotheses

This study was guided by the following hypotheses:

- There is no significant difference on the level of technostress of the two groups of the respondents.
- There is no significant difference on the level of technostress of the two groups of respondents when grouped according to profile variables.
- There is significant relationship on the level of technostress of the respondents and their profile variables.

Significance of the Study

This study on technostress among school heads and teachers aims to provide valuable insights for a variety of stakeholders in the Baggao educational zone. This study will benefit the following:

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School Heads and Teachers. By understanding the factors contributing to technostress, school heads can develop targeted ICT intervention plans. These plans can equip teachers with the necessary technology and training to leverage technology effectively, ultimately enhancing the learning experience for everyone.

Learners. The use of technology in classrooms, informed by this research, can foster a more engaging and interactive learning environment for students. As technology becomes more integrated into their education, students may gain valuable ICT literacy skills that will benefit them throughout their lives.

Policy makers. This research adds valuable data to the ongoing conversation about technology integration in education. By sharing these findings with policymakers and educational institutions, the research can inform evidence-based practices and policies at local, regional, and even national levels. This can lead to systemic change, ensuring that all schools have the resources and support needed to foster a technology-rich learning environment that benefits all students.

Barangay Officials. The research can inform initiatives focused on community growth and development. By recognizing the potential of ICT in education, stakeholders can explore ways to support schools and enhance the quality of life within their communities.

Other Stakeholders. Partners in teacher professional development can leverage the study's findings to create programs that address technostress and equip teachers with the skills and confidence to thrive in a technology-driven classroom.

The Researcher. This study has provided the researcher with invaluable insights into the dynamics of technology integration in education. Through the research process, the researcher has gained a deeper understanding of the challenges and opportunities associated with ICT in the classroom, contributing to their professional growth and expertise in the field.

Future Researchers. This study contributes valuable data and knowledge to the ongoing exploration of technology integration in education. Researchers can utilize these findings as a foundation for future studies on technostress, technology leadership, and effective teaching practices in a technology-rich environment.

Scope and Delimitations of the Study

This study aimed to craft a comprehensive ICT intervention plan for the 16 Public Elementary School Heads and Grade 4-6 Teachers in Baggao West District, Baggao Cagayan during the 2023-2024 school year. The scope was limited to investigating the impact of technology on the work of school heads and teachers. Information was gathered through an instrument inspired by a questionnaire developed by other researchers.

METHODOLOGY

This part presents the methods and procedures that were employed in the study such as the research design, the respondents of the study, the data gathering tool, the data gathering procedure, and the statistical tools.

Research Design

The study made use of the descriptive correlational design because the present study involves the collecting of precise and accurate information that explains an existing phenomenon, such as the impact

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of technology on the job of school principals in public elementary schools in Baggao, Cagayan, this research design was chosen.

A survey was conducted, with questionnaires being utilized to collect data in order to generalize the findings to a population that is representative of the sample group of participants.

Further, correlation was used to assess whether or not there are any significant relationships between and among the variables that have been collected.

Respondents of the Study

The respondents of the study were the 16 school heads and 55 Grade IV, Grade V and Grade VI teachers. There is a total of 71 respondents from public elementary schools in Baggao West District.

Purposive sampling was used to choose EPP-ICT teachers from each school who were asked to participate as teacher- participants, preferably teachers in Grades IV, V and VI teachers who are handling EPP-ICT Subjects.

Table 1 . Distribution of the Respondents of the Study

Baggao West District Elementary School	Participants				Total
	Number of School Heads	Grade IV Teachers	Grade V Teachers	Grade VI Teachers	
1. Adaoag ES	1	1	1	1	4
2. Asassi IS	1	2	2	2	7
3. Baggao West CS	1	2	4	4	11
4. Bagunot ES	1	1	1	2	5
5. Bitag Grande ES	1	1	1	2	5
6. Bunugan ES	1	1	2	1	5
7. Callao ES	1	1	1	1	4
8. Canagatan ES	1	1		1	3
9. Carupian ES	1	1	1	2	5
10. Ibulo ES	1				1
11. Masisit ES	1	1		1	3
12. Masical ES	1	1	1	1	4
13. San Vicente ES	1	1		1	3
14. Taguing IS	1	1	1	1	4
15. Temblique ES	1	1	1		3
16. Tueg ES	1	1	1	1	4
TOTAL	**16**	**17**	**17**	**21**	**71**

Data Gathering Tool

The information was gathered through the use of a questionnaire. In order to collect the information necessary for the completion of the study, a questionnaire was properly administered. The questionnaire is divided into five levels, each explored the technostress of the two groups of respondents, the extent to which

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these levels are utilized by school heads/administrators, the levels of work performance of school heads/administrators, the impact of technology usage on the school districts of Baggao West, and the impact of technology usage on the work performance of teachers.

The questionnaire was patterned in the study of Ahmet Naci Çoklar(2019), titled Defining Teachers' Technostress Levels: A Scale Development.

Furthermore prior to the administration of the tool, the study instrument was subjected to content validation by the six (6) experts. The evaluation of the panel of experts was subjected to content validity index analysis following Aiken's V Framework and interpreted with the use of the guidelines of Polit and Beck (2012). In the validation procedure six (6) validators were asked of the relevance of the statements in each constructs. The derived content validity indices interpretation/decision on the level of technostress is with acceptable validity.

Data Gathering Procedures

A systematic strategy and approach was used to gather the data. A few days after delivering an oral presentation of her study proposal to members of a panel, the researcher submitted a revised and final version of her research proposal to the Institutional Review Board (IRB), which conducted an ethical review and granted approval for the data collection.

As a next step, the researcher wrote an open letter to the Division Office through the Schools Division Office, requesting permission to perform the study in their respective Districts. Same Letter is also forwarded to all the School Heads/Teacher respondents through the District Supervisor.

After the approval of the letter of permission, the researcher personally distributed the questionnaire to the target respondents of the research. Informed consent was given first to the participants before the distribution of the survey questionnaires. The researcher explained the nature and purpose of the study and confidentiality was ensured throughout the conduct of the study.

Statistical Tool

The following were used to analyze the data gathered in this study:

Frequency counts and percentages were used to analyze the profile of the School Heads/ Teacher respondents.

Weighted and Overall Mean were used to analyze the level of technostress of the two groups of respondents and was interpreted in the scale below:

Mean Range	Qualitative Description
3.24-4.00	Strongly Agree
2.50-3.24	Moderately Agree
1.75- 2.49	Slightly Agree
1.00-1.74	Not Agree

Independent samples t test was used to analyze the difference on the level of technostress of the two groups of the respondents.

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One way Analysis of Variance (ANOVA) wand Independent samples t test were used to analyze the difference on the level of technostress of the two groups of respondents when grouped according to profile variables.

Chi Square following Cramer's V correlation analyzis were used to analyze the relationship on the level of technostress of the respondents and their profile variables Hypotheses were tested at 0.05 level of significance and were analyzed with the use JAMOVI software.

RESULTS AND DISCUSSION

This part presents the summary of findings, conclusion and recommendations that were obtained after undertaking careful analysis/interpretation of the data gathered.

Summary of Findings

In the light of the results and discussions, the following are the key findings of the study:

Profile of the respondents

School heads skew older than teachers, with a slightly higher proportion of females in leadership positions. School heads generally have higher qualifications (Masters) compared to teachers. Teachers have a longer average tenure than school heads, suggesting more experience with technology. All school heads hold permanent positions, while teachers have a wider range, including temporary positions. School heads manage varying team sizes. Most schools are small and with many teachers lacking ICT training compared to school heads.

Level of technostress of the two groups of respondents

School heads and teachers in the Baggao West District experience technostress related to learning & teaching processes, technical issues, and keeping up with rapid technological advancements.

School heads report higher technostress regarding the profession's value due to technology and job security compared to teachers.

Social anxieties related to technology use appear to be higher for school heads.

Comparison on the Level of Technostress of Two Groups of Respondents

There is no difference between the two groups (null hypothesis) and conclude that school heads and teachers experience technostress differently across all measured aspects.

Comparison on the Levels of Technostress of the Respondents when Grouped according to their Profile Variables

There are no statistically significant differences (p-value > 0.05) in technostress levels when grouped by any of the listed profile variables.

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Correlation between the Levels of Technostress of the Two Groups of Respondents to their Profile Variables

Sex is a statistically significant factor for teachers, with females reporting higher technostress

PROPOSED ICT INTERVENTION PLAN

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

PROPOSED ACTION PLAN 2024

Introduction and Rationale

The integration of technology in education is essential for modern teaching, enhancing educational quality and student engagement. To support educators in this transition, a comprehensive strategy is needed. This plan aims to equip educators with the skills and confidence to effectively use technology in their classrooms.

Blended professional development programs on technology integration and pedagogical approaches will be offered to ensure educators are well-prepared, aiming to increase participation, confidence, and effective technology use in lessons. Experienced tech-savvy educators will mentor less confident colleagues to foster peer support, improve problem-solving skills, and boost technical confidence. Online forums will be created for educators to share best practices and collaborate, building a supportive network and fostering a sense of community. Training on time management apps will help educators manage tasks and reduce stress, while user-friendly project management tools will facilitate collaboration and efficient workload distribution, enhancing communication and coordination. Communication platforms will be utilized to improve collaboration and support, and an online knowledge base with tutorials and troubleshooting guides will be developed to increase self-sufficiency and reduce reliance on technical support. Digital wellbeing programs integrated into professional development will promote healthy technology use and work-life balance, aiming to reduce stress and burnout among educators.

By implementing these strategies, the aim is to create a supportive environment where educators can confidently integrate technology into their teaching practices, ultimately preparing students for a technology-rich future.

Information And Communication Technology (ICT) Proposed Action Plan 2024

PROJECTS/	STRATEGIES/ Intervention Strategy	PERSON/S RESPONSIBLE	TIME FRAME	COMPETENCIES/ PERFORMANCE INDICATORS
Professional Development Programs:	Develop or curate online modules on: *Effective technology integration strategies for different subjects and grade levels	Instructional Technology Team /Curriculum Team School Head	Ongoing development & updates. Training sessions offered quarterly.	Increased teacher participation in professional development programs. Improved teacher confidence in

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PROJECTS/	STRATEGIES/ Intervention Strategy	PERSON/S RESPONSIBLE	TIME FRAME	COMPETENCIES/ PERFORMANCE INDICATORS
	*Common technical concerns like data security, using educational technology tools *Pedagogical approaches for technology integration *Offer blended professional development programs (online & in-person) to cater to different learning preferences.			integrating technology into lessons. Integration of technology observed in lesson plans and classroom practice.
Mentorship Programs	Pair experienced tech-savvy teachers with less confident colleagues for peer support, knowledge sharing, and troubleshooting assistance.	School Head Instructional Technology Team	Mentor-mentee pairs established by beginning of each school year. Ongoing mentorship meetings throughout the year.	Increased collaboration and knowledge sharing among teachers. * Mentees report receiving effective support from mentors. * Improved problem-solving skills and technical confidence among mentees.
Online Communities:	Create online forums or social media groups for teachers to: --- *Share best practices in technology integration. *Discuss challenges and solutions related to technology use.	School Head Instructional Technology Team	Online forum/group established within the first month. Ongoing moderation and promotion of active participation.	Increased online forum/group participation by teachers. * Sharing of successful practices and solutions observed within the platform. * Teachers report feeling more connected and supported by colleagues.

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PROJECTS/	STRATEGIES/ Intervention Strategy	PERSON/S RESPONSIBLE	TIME FRAME	COMPETENCIES/ PERFORMANCE INDICATORS
	*Build a network of support among colleagues. *Encourage knowledge exchange and collaborative problem-solving.			
Time Management Skills Development	Introduce and train educators on using time management apps to: *Schedule tasks and deadlines effectively. *Manage technology consumption efficiently. *Prioritize workload and optimize workflows.	Instructional Technology Team School Head	Training workshops offered at the beginning of the school year. Ongoing support and resource provision throughout the year.	Increased teacher adoption of time management apps. *Improved time management skills observed in work practices. *Reduced feelings of overwhelm and workload stress reported by teachers
Project Management Tools Implementation	Implement user-friendly project management tools to facilitate: * Collaborative tasks and assignments among teachers. *Efficient workload distribution and team communication. *Project tracking and progress monitoring.	Instructional Technology Team School Head	Tool selection and implementation completed within the first semester. Ongoing training and support provided for teachers.	Increased use of project management tools for collaborative projects. * Improved communication and coordination among teachers working on joint projects. * Efficient project completion and tracking observed.
Communication & Collaboration Platforms:	Utilize communication platforms (e.g., instant messaging, collaborative documents) to:	School Head Instructional Technology Team	Platforms chosen and integrated within existing communication systems by the beginning of the school year.	Increased communication and collaboration observed within the school through the platform. *Improved response times and problem-

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PROJECTS/	STRATEGIES/ Intervention Strategy	PERSON/S RESPONSIBLE	TIME FRAME	COMPETENCIES/ PERFORMANCE INDICATORS
	*Enhance communication and collaboration between teachers. *Improve coordination with school leadership and technical support staff. *Foster a more connected and supportive work environment.		Ongoing training and support provided for teachers.	solving through efficient communication channels. *Teachers report feeling more supported by school leadership and technical staff.
Knowledge Base Creation:	Develop a centralized online knowledge base with easily accessible resources such as: *Tutorials on using different educational technology tools. * Frequently Asked Questions (FAQs) to address common technical issues. * Troubleshooting guides for resolving problems independently.	Instructional Technology Team Tech Support Staff School Head	Knowledge base established and populated within the first semester. Ongoing updates and maintenance of resources.	Increased usage of the online knowledge base by teachers. * Reduced reliance on technical support staff for basic troubleshooting. *Improved problem-solving skills and self-sufficiency among teachers.
Digital Wellbeing Programs:	Integrate digital wellbeing programs into professional development to promote: *Healthy technology habits and responsible technology use. * Awareness of potential health risks	School Head Instructional Technology Team	Digital wellbeing workshops offered during professional development sessions. Ongoing access to resources and support materials for teachers.	Increased teacher awareness of digital wellbeing practices. * Adoption of healthy technology habits observed among teachers. *Reduced reports of stress and burnout

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PROJECTS/	STRATEGIES/ Intervention Strategy	PERSON/S RESPONSIBLE	TIME FRAME	COMPETENCIES/ PERFORMANCE INDICATORS
	associated with prolonged screen time. * Strategies for achieving a healthy work-life balance with technology.			related to technology use. pen_spark

Conclusions

In light of the key findings of the study, several conclusions can be drawn. Age differences between school heads and teachers suggest a potential influence on technology comfort levels and technostress. The higher qualifications of school heads might be linked to greater technology comfort, while teachers' longer tenure suggests more overall technology experience. Job security variations between permanent and temporary positions could be a factor influencing technostress among teachers. The varying team sizes managed by school heads highlight the potential impact of workload on technostress, further emphasizing the importance of leadership style in technology implementation. The limited access to ICT training for many teachers underscores the need for targeted interventions. The study confirms that both school heads and teachers in Baggao West District experience technostress. Common sources of technostress include challenges within teaching and learning processes, technical difficulties, and keeping pace with technological advancements. Interestingly, school heads reported higher technostress related to the perceived value of their profession due to technology and job security, as well as higher social anxieties surrounding technology use.

Recommendations

- In the light of the forgoing findings, the researcher offers the following recommendations to create a more supportive technological environment for both school heads and teachers.
- Implement targeted training programs to address specific needs of educators, such as technology integration strategies, resource evaluation skills for digital learning materials, and time management.
- Provide readily available technical support systems for educators, including an IT helpdesk, online tutorials, or a network of tech-savvy educators within the district.
- Foster a culture of collaboration among educators by creating online forums, professional learning communities focused on technology, and peer mentoring programs to share best practices and reduce technostress.
- Integrate sessions on healthy technology habits and ergonomics into professional development programs to address concerns about technology's impact on wellbeing.
- Develop school leadership strategies that specifically address challenges faced by school heads during technology integration within their schools.

- Conduct further research into the gender dimension of teacher technostress to understand the reasons behind higher stress levels reported by female teachers and develop targeted interventions to create a more supportive environment.

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