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Educational Technology in Elementary Teaching: Philosophies and Practices of Selected Teachers

[1]Monica Sophia Reyes*, [1]Joy San Buenaventura-Gaza
Corresponding Author: * monicasophia.reyes@unc.edu.ph
[1] University of Nueva Caceres, Naga City, Philippines

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ABSTRACT

Technology is present in almost all of society, including education. While there is increased use of various forms of technology and their applications, it is also essential to understand the philosophies and beliefs of elementary teachers and their decision points in incorporating technology into their teaching practice. This study aimed to systematically review the educational technology used in elementary teaching and document and describe the philosophies and practices of selected teachers. The researcher used the PRISMA model to review literature and group best practices into five areas: Teaching Methods, Instructional Materials, Interaction and Collaboration, Assessment, and Accessibility. Data was collected through surveys and a Focus Group Discussion (FGD). One survey question used SAMR descriptors to assess how often and in what ways teachers used technology in class. These helped identify which practices worked well for both teachers and students. To see if teachers followed best practices found in literature, the researcher included them in the survey and confirmed them in the FGD. A Teaching Philosophy test also identified each teacher's dominant philosophy. Results were analyzed qualitatively. The study found that even with some challenges, elementary teachers used technology in varied ways aligned with global best practices. The literature review highlighted effective strategies from countries like the US, the UK, Singapore, Japan, and Canada, offering models the Philippines can adopt or adapt. It also showed that teaching philosophy did not affect how teachers applied technology in their classrooms.

Keywords
Best Practices
Educational Technology
Literature Review
SAMR Model
Teaching Philosophies

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Introduction

Technology nowadays significantly influences enhancing and facilitating the learning and teaching process [1], [2]. Educators do not confine technology's impact to using digital tools, multimedia devices, educational applications, and online classes in education [3]. It also includes the teacher's beliefs, philosophies, and perspectives on technology and its educational application [4]. In most cases, while technology is available and accessible, the teaching process is still teacher-dominated [5]. Teachers' attitudes and beliefs are essential in determining the effectiveness of technology and its role in their classrooms [6], [7]. They decide whether to use technology throughout their curriculum, complement lessons with digital tools, or continue with traditional approaches [8]. These variations reflect their philosophies about how students learn and how they drive their teaching instruction.

While numerous inquiries have addressed best practices in technology integration [9], relatively few explicitly focus on elementary school teachers' perspectives. This gap is essential given children's increasing early exposure to technology [10]. Consequently, this study examines recent literature describing practical strategies for incorporating digital tools and explores how teachers' philosophical orientation influences their adaptation or resistance [11].

Technology has brought progressive changes globally [2], [12], introducing possibilities to supplement traditional classrooms. UNESCO [11] emphasizes preparing students for a digital future, equipping them with critical thinking, creativity, and collaboration skills [7]. Successful technology use also depends on teacher–student relationships and communication [13]. While digital tools can enhance learning experiences, teachers often balance innovation with long-practiced methods [5. Educators highlight the importance of monitoring technology use to keep students focused [8.

Each educator's philosophy shapes how they plan, organize, and execute teaching activities [4]. Documenting these philosophies in relation to educational technology helps identify advantages, disadvantages, and challenges [14]. Ultimately, such insights support effective, evidence-based strategies to enhance learning [15].

Even at a young age, students are exposed to mobile devices and applications [10], [16]. Research shows technology affects children's cognitive, social-emotional, and literacy

development, including attention span [3]. While technology can increase engagement and curiosity [7], distractions remain a risk. Thus, careful planning and responsible use are key to ensuring effectiveness [12].

The study of educational technology in elementary teaching is significant for teachers, students, administrators, parents, and researchers. Teachers benefit by diversifying instructional methods [9]; students gain preparation for digital demands [1], [17]; schools and administrators sustain best practices [12]; parents engage with flexible digital tools [16]; and researchers build a foundation for future inquiries [7].

The present study aims to systematically review recent scholarly literature on the integration of educational technology in elementary teaching by applying the PRISMA methodology to identify best practices across diverse contexts. It further seeks to analyze how educational technology is categorized in terms of teaching methods, instructional materials, interaction and collaboration, assessment, and accessibility. In addition, the study examines how teachers' philosophies of education such as essentialism, progressivism, and existentialism influence the adoption, adaptation, or resistance to technology use in classrooms. To deepen this analysis, the SAMR model is applied to evaluate the levels of technology integration, ranging from substitution to redefinition. Beyond literature analysis, the research also compares documented best practices with field data collected through surveys, interviews, and focus group discussions with elementary teachers to assess their real-world application. Moreover, the study explores the dominant teaching philosophies of elementary educators using the Sadker and Sadker framework and aligns them with identified practices of technology integration. Ultimately, the research aims to provide evidence-based recommendations for educators, administrators, and policymakers to align technological innovations with pedagogical philosophies, thereby enhancing student engagement, learning outcomes, and digital readiness.

Materials and Methods

This study employed a qualitative research design, specifically utilizing a Concurrent Triangulation strategy to enhance the validity and reliability of the findings. A structured survey was simultaneously administered, and Focus Group Discussions (FGDs) were conducted to obtain comprehensive qualitative data. The qualitative data findings were then used to interpret the results. The survey instrument was constructed to collect narrative responses aligned with those thematic categories described in the literature review in the previous chapter.

In addition to FGD, qualitative interviews were employed to deepen understanding of the participants' pedagogical approaches. Tabular formats were utilized to display the

synthesized qualitative findings, facilitating comparative analysis and ensuring clarity in presentation.

The study achieved its research objectives by conducting a systematic literature review of the educational technology used in elementary teaching and documenting and describing the philosophies and practices of selected teachers, as answered through the following: First, the literature gathered was reviewed using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) methodology. Studies, journals, and articles written in English were analyzed and evaluated to determine their relevance to the study, and the complete texts were narrowed down for further evaluation. The literature was presented using minimal relevant data, including the author, the year of publication, the research title, and a summary of content outlining the best practices of educational technology used in elementary teaching. Second, the literature on educational technology used in elementary teaching was reviewed thematically and organized by themes rather than chronologically. The literature gathered for the five developed countries was presented and broken down into five categories: Method of Teaching, Organization of Instructional Materials, Interaction and Collaboration, Assessment, and Accessibility. Third, SAMR descriptors were included in one of the questions that were part of the survey or interviews. The frequency with which educators used these descriptors in incorporating technology in the classroom was identified, and the effectiveness for both educators and their elementary students was determined. The descriptors were used to identify the best practices adopted by each teacher respondent in teaching elementary students. Fourth, the best practices from the literature review were embedded into the survey among elementary teachers to determine whether they were implemented. These findings were further verified through a FGD. Lastly, the teacher respondents' dominant teaching philosophy was assessed using a Teaching Philosophy test. Questions from the "What is your Philosophy of Education?" test, designed by Sadker, M.P., and Sadker, D.S. (2014), were asked of the respondents. The results were presented alongside the findings from the best practice survey.

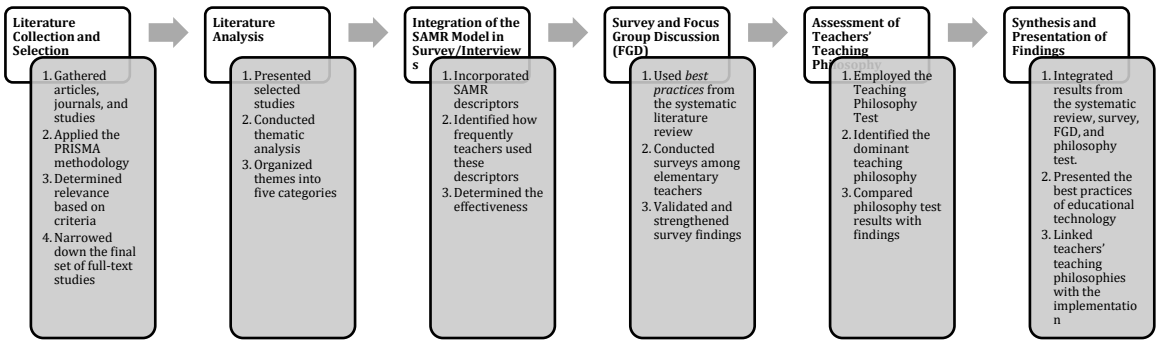


Fig. 1. Article Selection and Analysis Process

The philosophy test was interpreted based on the teachers' responses gathered for the questions leaning towards their dominant philosophy. The 5-point scale responses for each question were added. The total score determines the dominant philosophy. The philosophies and the best practices from the FGD were combined. The qualitative data were presented in tabular form to facilitate comparison. The hypothesis was tested using a survey, the philosophy test, and a FGD.

Results

A. Systematic Literature Review of the Educational Technology Used in Elementary Teaching

The systematic literature review identified 14 studies across five educational technology themes in elementary teaching (Table 1). Studies in the Method of Teaching emphasize mobile devices, iPad initiatives, flipped team-based learning, and national ICT frameworks as drivers of learner-centered instruction and enhanced engagement. For the Organization of Instructional Materials, research highlights the role of digital resources such as eBooks, tablets, interactive whiteboards, and technology funding schemes that expand classroom interactivity and extend learning into home environments. In Interaction and Collaboration, initiatives such as Chromebook distribution, EdTech platforms, teacher networks, and digital learning commons promote peer-to-peer collaboration and professional development for educators. Studies addressing Accessibility show that infrastructure ensures equitable opportunities across geographic and socioeconomic divides. Finally, in Assessment, technology integration enables real-time grading, digital rubrics, data-driven performance monitoring, and alignment between assessment design and instructional content. These findings collectively demonstrate how best practices in different countries advance technology integration in elementary education by addressing pedagogy, infrastructure, and inclusivity.

Table 1. Selected Papers for the Systematic Literature Review

No.	Author(s)	Year	Issue / Focus	Theme
1	Lin, Chen, & Lin [3]	2017	Mobile devices and internet-based instruction enhance motivation and performance (USA)	Method of Teaching
2	Jordan [8]	2018	One-to-one iPad initiative improves attitudes and competencies (UK)	Method of Teaching
3	Hinds [12]	2019	Broadband access in rural regions ensures inclusion (UK)	Accessibility
			Internet/cloud services enable student monitoring (UK)	Assessment
4	Wang [17]	2019	Digital rubrics and real-time grading (USA)	Assessment
5	Nuncio [14]	2020	ICTE4E framework: teacher training, curriculum innovation, mobile learning (Japan)	Method of Teaching
			Future & Dream School Projects: devices, whiteboards, broadband (Japan)	Organization of Instructional Materials
			Innovative digital learning commons (Japan)	Interaction & Collaboration

No.	Author(s)	Year	Issue / Focus	Theme
			Cloud computing and fiber-optic infrastructure (Japan)	Accessibility
6	Jewitt [16]	2021	Home Access Programme promotes active home learning (UK)	Organization of Instructional Materials
7	Goldey [13]	2021	District-wide Chromebook distribution and teacher training (USA)	Interaction & Collaboration
8	Kizuna [15]	2021	Cloud-based content and grading systems (Japan)	Assessment
9	Veletsiano & VanLeeuwen	2021	Alignment of content and assessment in online learning (Canada)	Assessment
10	Aston et al. [2]	2022	EdTech market enhances collaboration and tutoring (UK)	Interaction & Collaboration
11	Si Hua et al. [18]	2022	Flipped team-based learning promoting autonomy and collaboration (Singapore)	Method of Teaching
12	Cuban [5]	2023	Universal device access across demographics (USA)	Accessibility
13	UNESCO [9]	2023		
			Digital textbooks/eBooks integrated in school curricula (Singapore)	Organization of Instructional Materials
			Student Learning Space (SLS) platform (Singapore)	Accessibility
			Professional development on digital assessment (Singapore)	Assessment
			Teacher-centric collaborative networks (Singapore)	Interaction & Collaboration
	UNESCO [11]	2023	OpenSchool.ca and partnerships provide universal educational access	Method of Teaching
			The Technology and Learning Fund enables the acquisition of digital tools	Organization of Instructional Materials
			TELT Contact initiative supports professional collaboration	Interaction & Collaboration
			Contact Nord supports marginalized learners (Canada)	Accessibility
14	Gimbert & Cristol [6]	2024	Tablets and Chromebooks support interactive learning (USA)	Organization of Instructional Materials

1. Best Practices Along with the Method of Teaching

In their study conducted in the United States, Lin, Chen, and Lin [1] emphasize how mobile devices and internet-based instruction improve student motivation and academic performance, affirming the role of digital tools as foundational to fostering technology-rich environments. Jordan [5], exploring a one-to-one iPad initiative in the United Kingdom, finds that personal devices improve students' attitudes toward learning and build their technological competencies. A digital learning publication further enhances it by sustaining a continuous EdTech culture. Si Hua et al. [11] in Singapore highlight the advantages of a flipped team-based learning approach. This model, which encourages a technology-mediated, learner-centered approach that promotes autonomy, collaboration, and critical inquiry, allows teachers to act as facilitators of interactive and process-oriented learning. Nuncio [14] documents Japan's ICTE4E framework, a comprehensive approach to technology integration that includes teacher training, curriculum innovation, and mobile learning. It supports continuous access to learning outside the classroom through digital platforms. UNESCO [11] details how Canada's OpenSchool.ca and its partnership with

class.telequebec.tv and Alloprof deliver universally accessible, high-quality educational resources to diverse learner demographics.

2. Best Practices Along with the Organization of Instructional Materials

In the United States, Gimbert and Cristol [6] report that elementary students most frequently use tablets and Chromebooks, which combine multimedia functionalities like GPS, cameras, and touchscreen interfaces to support interactive learning. Jewitt [16], examining the Home Access Programme in the UK, finds that digital resources expand opportunities for active learning at home, encouraging self-directed learning through tools such as educational games, blogs, and forums. In Singapore, the UNESCO Global Education Monitoring Report [9] identified using digital textbooks and eBooks in school curricula to increase student interaction and engagement. Nuncio [14] describes Japan's Future & Dream School Projects as part of its ICT4E strategy, where it provides each student and teacher with personal devices, interactive whiteboards, and high-speed Internet, creating a comprehensive infrastructure for digital learning. Lastly, UNESCO [11] documents Canada's approach, where provinces such as Ontario allocate digital resources funding through the Technology and Learning Fund that enables schools to acquire tablets, cameras, and software that enrich classroom instruction.

3. Best Practices Along Interaction and Collaboration

In the United States, Goldey [13] delineates a district-wide initiative in New Jersey wherein all elementary school students received Chromebooks, and teachers were equipped with interactive whiteboards and document cameras. These tools and annual recurring training for new teachers can ensure technological fluency among educators. Aston et al. [2] highlight the EdTech market in England that promotes student, teacher, and parental collaboration through digital resources and platforms and online tutoring services. This design enhances students' learning both at school and at home, while also involving parents. According to the UNESCO Global Education Monitoring Report [9], Singapore's strategic approach features teacher-centric collaborative networks such as the Singapore Teachers' Network and Singapore Teaching Practice, which foster knowledge exchange and peer mentoring. In Japan, Nuncio [14] highlights the innovative learning commons at Doshisha University, which are equipped with advanced digital devices, high-capacity printing, multimedia tools, and discussion rooms that enable students to engage in independent academic discussions and research. Lastly, UNESCO [11] discusses Canada's TELT Contact initiative in Ontario, which provides teachers with instructional support through professional development webinars, continuous access to digital teaching

resources, and asynchronous training modules, empowering educators to collaborate effectively in online and blended learning environments.

4. Best Practices Along Accessibility

In the United States, Cuban [5] asserts that universal device access is available for both teachers and students from kindergarten through high school, regardless of their demographic lines of race, class, and ethnicity. This technological diffusion is one of the most successful initiatives in American public schooling. In the United Kingdom, Hinds [12] outlines the government's endeavor to emphasize the implementation of high-speed broadband and wireless connectivity in rural regions, ensuring digital inclusion. Complementing this infrastructural perspective, the UNESCO Global Education Monitoring Report [9] examines Singapore's Student Learning Space (SLS). This centralized, nationally integrated platform enables educators to personalize instruction and students to access curriculum-aligned resources. Nuncio [14], addressing Japan's ICT4E framework, recognizes the strategic necessity of cloud computing and fiber-optic connectivity as foundations for technologically enhanced pedagogy and digital literacy. Similarly, UNESCO [11] documents Canada's strategic approach of Contact Nord. This provincially funded nonprofit initiative provides marginalized and geographically isolated learners with laptops, internet access, and digital support under Ontario's Virtual Learning Strategy.

5. Best Practice Along Assessment

Wang [17] describes a technologically enhanced assessment model in the United States that allows elementary educators to integrate customizable rubrics and real-time grading functionalities into their assessments. This model enables teachers to select applicable criteria digitally and provide immediate performance feedback. This method mitigates the inefficiencies of manual grading and fosters real-time learning and reflection for students. Similarly, Hinds [12] identified high-speed internet connectivity and cloud services in the United Kingdom as facilitating student monitoring and grading systems. These technological platforms offer centralized tools and expanded real-time analytics and performance tracking capacity. In Singapore, the UNESCO Global Education Monitoring Report Team [9] recognizes the complexities of integrating technology into assessment and responds with sustained professional development initiatives focused on curriculum design, assessment strategies, and adaptive classroom management strategies. Japan's national strategy, outlined by Kizuna [15], implemented digital content delivery systems and cloud-based administrative frameworks to reduce instructional preparation time while increasing operational efficiency in grading, allowing educators to allocate time for pedagogical refinement. Meanwhile, Veletsiano and VanLeeuwen [7] report that Canadian faculty must reexamine the pedagogical alignment between the course content and

assessment structure in designing asynchronous online courses, resulting in improved digital and in-person instructional modalities.

B. Documentation and Description of the Philosophies and Practices

The findings reveal that teachers' integration of technology varies across philosophies but converges on standard best practices that align with international trends (Table 2). Essentialist teachers (1, 3, 6) emphasize structured use of tools for organization, collaboration, and assessment, blending traditional and digital methods. Existentialist teachers (2, 4) adopt student-centered strategies, primarily using interactive games and redefinition-level practices that grant learner autonomy, though their contributions in accessibility and assessment remain limited. Progressivist teachers (5, 7, 8) consistently apply blended and collaborative learning, leveraging platforms like Google Drive, YouTube, Kahoot, and Quizizz to foster experiential, student-driven engagement. Across all groups, the SAMR model is reflected at different levels, yet factors like access, professional training, and institutional support strongly influence the depth of integration.

Table 2. Best Practices of Teachers in Technology Integration

Theme (Best Practice)	Teacher Number	Finding	Remark
Method of Teaching	1, 3, 6 (Essentialism)	Use structured tools, interactive games, multimedia apps (Kahoot, Mentimeter), blended learning, self-made videos; SAMR: substitution, augmentation, modification.	Blend traditional and digital tools; emphasize structure and varied resources.
	2, 4 (Existentialism)	Focus on interactive games, student-centered approach, greater learner autonomy; SAMR: modification, redefinition.	More emphasis on student choice and independent exploration.
	5, 7, 8 (Progressivism)	Apply blended learning; video-based lessons (YouTube), collaborative activities; SAMR: modification.	Intense experiential and collaborative orientation.
Organization of Instructional Materials	1, 3, 6 (Essentialism)	Use lesson planning tools, scheduling, Google Forms/OneDrive; provide materials in multiple formats; SAMR: substitution, augmentation, modification.	Emphasis on structure, order, and resource management.
	2, 4 (Existentialism)	Use interactive games and learner-driven resources; SAMR: modification and redefinition.	Technology supports autonomy and creativity.
	5, 7, 8 (Progressivism)	Use Google Drive, Dropbox, and OneDrive to organize, share, and revise instructional materials; SAMR: modification.	Emphasize collaboration and evolving materials.
Interaction and Collaboration	1, 3, 6 (Essentialism)	Use Microsoft Teams and Google Workspace for structured collaboration, feedback, and shared resources.	Emphasis on guided collaboration and structured communication.
	2, 4 (Existentialism)	Prepare videos and games, and use internet resources to sustain engagement.	Student engagement and creativity are prioritized.

Theme (Best Practice)	Teacher Number	Finding	Remark
	5, 7, 8 (Progressivism)	Use Teams, Google Workspace for co-planning; student collaboration through Google Meet, Messenger; and online evaluation tools.	Focus on real-time collaboration and peer learning.
Accessibility	1, 3, 6 (Essentialism)	Use PowerPoint, Google Forms, portfolios, and Messenger for submissions.	Attempt to accommodate diverse learning styles despite access limitations.
	2, 4 (Existentialism)	No comments provided.	Suggests limited involvement in accessibility practices.
	5, 7, 8 (Progressivism)	Use Google Forms, Kahoot, and Quizizz for online assessments and feedback.	Promote accessibility through formative/summative online evaluation.
Assessment	1, 3, 6 (Essentialism)	Use PowerPoint, Google Forms, and portfolios; Messenger for submissions.	Balance between digital tools and conventional approaches.
	2, 4 (Existentialism)	No comments provided.	Suggests limited reliance on digital assessment.
	5, 7, 8 (Progressivism)	Use Google Forms, Kahoot, and Quizizz with automatic grading and feedback.	Emphasis on efficiency and immediacy of results.

1. Best Practices Along with the Method of Teaching

Teachers 1, 3, and 6, who align with Essentialism, utilized structured tools and interactive resources in their teaching. Their practices included interactive games and hands-on PowerPoint activities. They also use interactive educational apps and multimedia resources like Kahoot, Mentimeter, etc., to make lessons more engaging. Blended learning and differentiation are included in this category. Since they also still value traditional ways of teaching and learning, they still use a blended learning approach, which combines technology with face-to-face instruction. They also combine traditional face-to-face instruction with online tools like Canva. They also use self-made videos to present the lesson and incorporate educational games or badges to motivate students. Teachers 2 and 4, guided by Existentialism, focused on interactive games. It shows a student-centered approach where students have greater autonomy within their learning experience. Teachers 5, 7, and 8 align with Progressivism and use a blended learning approach combining technology with face-to-face instruction. For instance, their students watch video-based lessons at home (using tools like YouTube) and engage in discussions, problem-solving, or hands-on activities during class, emphasizing experiential and collaborative learning.

Even the technology indicators SAMR, such as modification, substitution, augmentation, and redefinition, vary across philosophies. Their responses to how they perceive technology, motivation, and challenges also vary and do not have a consistent pattern in the practice and philosophy they believe in. The best practices they follow are similar to those of the five developed countries in the literature review for the teaching method.

Essentialists (teachers 1, 3, and 6) use modification, substitution, and augmentation as technology indicators. They use lesson planning tools, scheduling, and resource management, some of their school's best practices. They use Google Forms, OneDrive, etc. They also offer materials in various formats, like videos, slides, and text, to cater to their different learning preferences. Existentialists (teachers 2 and 4) use modification and redefinition as technology indicators. They use interactive games in their teaching instructions. Progressivists (teacher 5, 7, and 8) use modification as their technology indicator. They use platforms like Google Drive, Dropbox, or OneDrive to organize and store teaching resources, lesson plans, videos, and supplementary materials. It allows easy access, sharing, and revision of materials year after year.

The results of this study showed that while teaching philosophy can influence technology integration, it is not the sole determinant. Resistance to change, support mechanisms, and the alignment of teaching practices with technological tools are crucial in how educators utilize technology in educational settings.

2. Best Practices Along Organization and Instruction Materials

The study's findings reveal a generally favorable perception regarding integrating technological tools in the Organization of Instructional Materials. The data reflects a consolidated perspective among the eight participating elementary teachers regardless of their education philosophy, affirming the pedagogical value of engaging learners through digital platforms that extend beyond traditional textbooks. The data suggest a positive perception among the teachers regarding the use of technology in organizing instructional materials. This response consistency highlights that integrating technology into an instructional organization is widely accepted and valued. However, the slightly varied results suggest that gaps in access, experience, or training may still exist. It highlights the need for ongoing professional development and support to ensure technology is used effectively in educational settings.

Teachers participating in the study utilized different strategies for organizing instructional materials, influenced by their educational philosophies: Essentialism, Existentialism, and Progressivism. Their practices aligned with specific levels of the SAMR model: Substitution, Augmentation, Modification, and Redefinition.

Teachers 1, 3, and 6, who align with Essentialism, prioritized structure and order as shown in their use of lesson planning tools, scheduling systems, and digital resource management platforms like Google Forms and OneDrive. They use materials in various formats, such as videos, slides, and Word documents, to cater to diverse learning preferences. Their practices use substitution and augmentation with modification as they

adapt technology to improve instruction. Teachers 2 and 4, guided by Existentialism, focused on learner autonomy and self-expression. They use interactive games that allow students to explore learning based on their interests. Their use of technology involves modification and redefinition to transform the learning experience using technology. Teachers 5, 7, and 8 who align with Progressivism emphasize student-centered learning. They use platforms like Google Drive, Dropbox, or OneDrive to organize and store teaching resources, lesson plans, videos, and supplementary materials. It allows easy access, sharing, and revision of materials year after year. Their approach supports collaboration and the evolution of materials, aligning with modification, as it will enable more accessible content management.

The participants' best practice position for this category was similar to the teaching method. However, with the teaching process, there was no pattern on which philosophy was more inclined to use technology, consistent with the result discussed.

3. Best Practices Along Interaction and Collaboration

The combined responses of the eight elementary teachers, regardless of their educational philosophy, support the belief that technology enhances motivation and fosters collaboration between students and teachers. It is achieved by providing more opportunities for interaction through online platforms. Overall, this category's general outlook is positive, indicating that most participants see technology as a supportive tool for interactive and collaborative engagement.

Teachers 1, 3, and 6 follow the Essentialist philosophy, focusing on structured collaboration and guided instruction. They use technology in this category through communication platforms, collaborative projects, feedback and reflection, and shared resources. They use tools like Microsoft Teams or Google Workspace to share resources, lesson plans, and student data with co-teachers, enabling co-planning and streamlined communication. Teachers 2 and 4, aligned with Existentialism, prioritize learner engagement, autonomy, and creative expression. They use technology by preparing videos and games in their lessons to keep the students engaged. They search the Internet for ideas that may help their teaching process be effective. Teachers 5, 7, and 8, grounded in Progressivism**,** emphasize real-time collaboration, communication, and shared learning experiences. They collaborate with colleagues using platforms like Microsoft Teams or Google Workspace to allow teachers to collaborate on lesson plans, curriculum development, or shared resources in real time. They also choose student collaboration, encouraging students to learn and speak up. They use collaboration tools like Google Meet and Messenger to communicate. They also use online evaluation and communication platforms.

4. Best Practices Along Accessibility

The data from the Focus Group Discussion highlights varied perceptions among educators regarding accessibility to technology integration. The results suggest that while some teachers view accessibility positively, many report significant limitations. Regardless of their education philosophy, at least half of the participants acknowledge that students still experience restricted access to technological tools. This lack of access may lead to ongoing instructional challenges when integrating technology into the curriculum lessons. The data underscores persistent disparities in the availability of digital resources for both educators and students. Although improvements have been made, implementing accessible technologies remains inconsistent across educational environments. These findings reinforce the need for transparent and fair use of accessibility standards so that every student can access learning tools equally.

The result diverged from the initial three categories of best practices discussed. It should be recognized that although educators are generally inclined to incorporate technological tools in their instructional practices, challenges, including the unavailability and unstable network connections, shortage of digital devices, expensive Internet access, and a widespread lack of digital literacy skills, compounded by limited professional training, collectively affect the implementation of technology in educational environments.

Teachers 1, 3, and 6 follow the Essentialist philosophy and accommodate various learning styles and strengths by utilizing online platforms such as PowerPoint presentations and Google Forms. They also encourage students to create portfolios and send their work through Messenger group chat. Teachers 2 and 4, aligned with Existentialism, did not provide comments on this category. Teachers 5, 7, and 8 are grounded in Progressivism and integrate online assessments using tools like Google Forms, Kahoot, and Quizziz to create formative and summative assessments. These tools allow for automatic grading, saving time and providing immediate feedback to the students.

5. Best Practices Along Assessment

The data from the Focus Group Discussion (FDG) showed that the eight elementary teachers' combined viewpoint, regardless of their educational philosophy regarding assessment, leans toward a general preference for conventional forms of student evaluation and grading instead of using digital assessment tools. The participants perceive assessment as falling short, indicating that many educators may struggle to align assessment tools with instructional goals. Nevertheless, some respondents demonstrated a more positive perception of assessment practices. However, while a notable number of participants mentioned they use online tools for assessment, other respondents provided

a lower position score for this category. Consequently, although most participants lean toward traditional assessment methods, the results of the FDG indicate variability in preferences, with a notable number of respondents possibly going toward greater integration of technology in assessment practices. This difference could point to traditional evaluation methods, a lack of professional development in assessment design, or a disconnect between assessments and diverse student learning styles.

Teachers 1, 3, and 6 follow the Essentialist philosophy and address different learning styles and strengths using online platforms like PowerPoint presentations and Google Forms. They also ask students to create portfolios and submit their work through a Messenger group chat. Teachers 2 and 4, aligned with Existentialism, did not provide comments on this category. Progressivist teachers 5, 7, and 8 use online assessment tools such as Google Forms, Kahoot, and Quizizz to create formative and summative assessments. These tools automatically grade assignments, saving time and offering immediate feedback to students.

Conclusion

This study concluded that technology can be a powerful tool in the education systems of developed nations to support increased student engagement, collaboration, and innovative teaching practices. However, the full potential of technology is still hindered by challenges such as limited access to resources, insufficient training, and infrastructure differences. While blended learning models are widely implemented, the degree of sophistication and access varies between countries. This difference highlights the need for continued efforts to enhance technology accessibility and support teacher development. Technology integration can potentially improve educational outcomes, but addressing these challenges is crucial for maximizing benefits.

This study showed no significant relationship exists between a teacher's educational philosophy and the use of technology best practices. Teachers use tools that align with teaching goals, student engagement, and curriculum standards, regardless of philosophical stance. Technology enhances instructional quality when thoughtfully applied, but gaps in training, accessibility, and strategy limit its full potential, especially in assessment.

Conflict of Interest

The authors declare that there is no conflict of interest.

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Authors



Monica Sophia Reyes is an experienced ELD teacher who holds a Master's degree in Leadership in Teaching with a specialization in Special Education from Notre Dame of Maryland University. She began her teaching career in Baltimore City, Maryland, where she dedicated 15 years to teaching Mathematics before transitioning to English language development. Drawing on her extensive classroom experience, she now focuses on promoting the academic and language growth of students acquiring English as a second language. (email: monicasophiareyes@unc.edu.ph).



Joy San Buenaventura-Gaza is an experienced HR professional and instructional leader who serves as the human resource recruitment and training officer and a professor at the School of Graduate Studies at the University of Nueva Caceres in Naga, Bicol, Philippines. She leverages her recruitment, training, teaching, and development expertise to foster professional growth and enhance institutional practices. A dedicated researcher, her contributions span human resources, language, literature, and educational leadership. As a global citizen advocate, she pursues research supporting sustainable development and community well-being. Her roles as an HR practitioner, educator, researcher, and community volunteer highlight her commitment to positive impact. (email: joy.gaza@unc.edu.ph).