

Television Utilization as an Instructional Tool: Its Effects on Teaching Effectiveness and Learner Academic Performance in Public Elementary Schools

Dolores M. Bual

Principal 1

San Agustin Central Elementary School

E-mail: dolores.bual001@deped.gov.ph

Rochen M. Raniel

Principal 1

Salvacion Elementary School

E-mail: rochen.raniel@deped.gov.ph

Charity G. Cacho

Head Teacher 1

Lamela Elementary School

E-mail: charity.cacho001@deped.gov.ph

Jesebel A. Alngog

Principal 1

Gata Integrated School

E-mail: jesebel.alngog001@deped.gov.ph

Abstract — This study aims to investigate the effects of the utilization of Television (TV) as an instructional tool to teaching effectiveness and academic performance of learners in public elementary schools of Surigao del Sur Division. Using a descriptive-correlational research design, a total of forty-five (45) teachers from a district were completely enumerated and three-hundred one (301) learners were randomly sampled using Stratified Random Sampling. Researcher-made survey questionnaires, with five-point Likert scale items, were used to measure the extent of TV utilization as an instructional tool and extent of teaching effectiveness when using TV. These were subjected to pilot test that resulted to Cronbach alpha greater than 0.70. Descriptive statistics such as frequency and percentage, mean and standard deviation, and Spearman rho coefficients were

used for the analysis of data. Results showed that civil status, position, years in teaching and trainings of teachers significantly correlate to the extent of TV utilization, teaching effectiveness, and learners' academic performance. Moreover, correlation analysis also posited significant interrelationships among the extent of TV utilization, the teaching effectiveness, and the learners' academic performance. Moreover, areas needing further enhancements include the collaborative and technical aspects of TV utilization which provides inputs to the proposed program of the study. Consequently, both the findings and output of the study may be used by DepEd management in consideration to its present efforts towards technology integration as an effective strategy to improve teaching and learning process.

Keywords: TV utilization, Instructional Tool, Teaching Effectiveness, Academic Performance

I. INTRODUCTION

The utilization of TV in the instructional delivery among public elementary schools in San Agustin district and investigated its effects to teaching performance and academic achievement of the students, during School Year 2025-2026. Recommendations were drawn to highlight the importance of technology integration at classroom setting to ensure better teaching performance and high academic outcomes for all learners.

Technological advancements have resulted to significant reforms in the way learners learn lessons in the classroom. Attahakul (2024) noted that classroom teaching has been revolutionized by the introduction of diverse media technologies, of which television is a leading yet continued source of debate as a tool for teaching and learning. In most public elementary school contexts, television is becoming widely available and is utilized by teachers as an instructional tool.

The use of media technology in the field of education has extensively transformed pedagogical delivery in the 21st century. Among the devices brought to schools, television is among the oldest and most widely available forms of audiovisual equipment. In the Philippines,

the Department of Education (DepEd) has issued the DepEd Computerization Program (DCP) by virtue of DO 78, S. 2010 and was further strengthened through DO 16, S. 2023. These orders guide the integration of Information and Communication Technology (ICT) in the teaching and learning process by providing schools with technology, training teachers, and setting guidelines for its use to enhance education and prepare students for the 21st century.

Several research findings indicate that the integration of television within teaching in the classroom enhances pedagogy through the facilitation of lesson presentation, representation of abstract ideas, and maintenance of learners' attention. For instance, Dimaro et al., (2023) concluded that the Light Emitting Diode (LED) television was viewed by teachers and students at Philippine public schools as an acceptable and facilitating teaching tool, particularly for subjects that need visual explanations. Similarly, the Educational Development Center (EDC) indicated that when used appropriately as part of instruction, television can enhance understanding, stimulate discussion, and engage students (EDC, 2004).

Long-term retention and transfer of learning from television-based instruction remains understudied in elementary populations. While immediate recall may benefit from multimedia presentation engaging multiple cognitive pathways (Lee & Kim, 2025), the durability of learned information and students' ability to apply knowledge to novel contexts requires further investigation particularly within public school settings with limited technological resources. Research on interactive e-books and multimedia-based materials indicates immediate improvements in post-test performance (Lutfiani & Andriani, 2025), yet few longitudinal studies track whether learning gains persist beyond the instructional period or whether students successfully transfer concepts to different contexts (Anam et al., 2025). This gap in research represents a critical limitation in understanding television's true long-term educational value in elementary schools, particularly regarding whether benefits extend beyond test performance to meaningful changes in student understanding and application of knowledge across academic domains and real-world situations.

Literature Review

The implementation of television-based instruction in public elementary schools cannot be evaluated in isolation from the broader institutional contexts in which educators operate. Public elementary schools face distinct constraints regarding resources, teacher preparation, and curricular pressures that fundamentally shape how television integration occurs and influences both teaching effectiveness and student learning outcomes.

Resource availability and technological infrastructure in public elementary schools significantly constrain television utilization patterns and implementation quality. Schools with limited equipment, outdated technology, and inadequate technical support face barriers to effective television integration that differ substantially from well-resourced educational contexts (Silverio, 2025). Research examining technology integration across public school systems demonstrates that infrastructure gaps and inadequate resource allocation represent critical constraints limiting the capacity of teachers to implement audiovisual instruction effectively (Hanifah et al., 2025). Beyond basic equipment availability, schools must maintain reliable electricity, stable internet connectivity for digital content delivery, and functioning display devices that often require dedicated technical support personnel to sustain (Syafuruddin et al., 2024).

II. METHODOLOGY

Research Design

This study used a descriptive-correlational quantitative research design to systematically describe and quantify the utilization of television in classroom instruction and its effects on teaching effectiveness and learners' academic performance. This design is appropriate as it allows the researchers to gather measurable data through surveys or questionnaires without manipulating any variables, thereby providing a clear and accurate snapshot of the current practices and outcomes related to television use in teaching (Pangilinan, 2025). By focusing on describing the relationships and patterns among the variables, this approach will enable the researchers to present

a comprehensive understanding of how television impacts instructional effectiveness and academic achievement in the natural classroom setting.

Sample of the Study

The respondents of the study composed of teachers in key stage 2 while learners will compose non-respondents from public elementary schools of San Agustin District under the Division of Surigao del Sur.

All 45 teachers in key stage 2 will be selected using purposive sampling. Since all have utilized television in their classroom instruction, all are included in the study to ensure relevant and accurate responses. These teachers will serve as the primary sources of data, as the focus of the study on television utilization, teaching effectiveness, challenges encountered and learners' academic performance.

While the learners themselves are not respondents, their final rating in the 1st quarter were utilized as secondary data to show the impacts of television utilization and teaching effectiveness on learners' academic performance. Only official school records were used to ensure data reliability, confidentiality, and adherence to ethical research standards.

For learners who are considered the non-respondents, population from Key Stage 2 (Grades 4 to 6) was 1,369 pupils. Using stratified random sampling, 100 learners will be chosen to represent each grade level proportionally. The learners were selected from those exposed to lessons taught with the use of television as an instructional tool.

Table 1 presents the distribution of the respondent and non-respondent groups.

TABLE 1
DISTRIBUTION OF THE RESPONDENT GROUPS

Categories	Population (N)	Sample Size (n)	Sampling Technique	Remarks
Teachers	45	45	Purposive Sampling	Teachers using television in instruction
Learners	1,369	301	Stratified Random Sampling	Learners exposed to TV-assisted instruction

Table 1 shows the distribution of respondent groups with 45 teachers and 301 learners respectively from San Agustin District, San Agustin, Surigao del Sur. A complete enumeration of 45 teachers was achieved and they were asked to answer the survey questionnaires. Moreover, 301 students were selected using stratified random sampling.

Measures

The study utilized researcher-made questionnaires to measure the extent of TV utilization in teaching and the perceived effectiveness of TV in the teaching performance. The academic performance of students was assessed using their first and second quarter average ratings. The questionnaire is divided into sections covering the demographic profile of the teachers (including personal and professional information), the frequency and manner of television use in instructional delivery, the perceived effects of television utilization on teaching effectiveness, and the challenges encountered in using television as an instructional tool. Teachers respond using a Likert scale ranging from "Not at all" to "Always" for utilization items and from "Strongly Disagree" to "Strongly Agree" for effectiveness and challenges. Additionally, learners' academic performance data, specifically their 1st and second quarter average rating and proficiency level, are obtained from School Form 9, collected confidentially through teacher reports without including learner names. This combination of self-reported data and objective academic records provides a

comprehensive measure of the variables under investigation. Clear instructions accompany each section to guide respondents in accurately completing the questionnaire and reporting performance data.

A pilot test of was conducted to 30 teachers from Marihatag district. Data were subjected to reliability test which resulted to Cronbach's alpha greater than 0.70. Hence, ensuring that the instruments used in the study are reliable. Moreover, the factor loadings are at least 0.50 which imply that the questionnaire is also valid. Moreover, all instruments were validated by a panel of experts compose of education supervisors and master teachers.

Procedures

The data-gathering procedure in this study involved the following steps to report the defined research queries and to come up with the appropriate result constructed on the findings of the current study.

Before the start of data collection, the researchers obtained necessary permission from the Graduate School in compliance to the existing policies and protocols.

The researcher then secured the necessary approval to ensure that the study complied with institutional and ethical standards. A formal request to conduct the research was forwarded to the District Supervisor of San Agustin for further endorsement to the Office of the Schools Division Superintendent. Subsequently, coordination was made with the principals and school heads of the participating schools to arrange schedules that would accommodate both the administration of research instruments and the conduct of survey without disrupting regular instructional time.

Prior to the actual survey, the teacher participants were exposed to brief orientation about the rationale of the study. The objectives of the study were clearly discussed. Moreover, ethical considerations such as privacy and confidentiality were made clear to the teachers during the orientation. An informed consent form was given to every teacher emphasizing that their participation is voluntary in nature.

The grades of the students were obtained from the teachers considering the permission from the school heads and supervisors. In addition, all data collected were tabulated in Microsoft excel before imported to Jamovi (an open-source statistical software) for final analysis.

Data Processing

The following statistical tools were used in the study.

Frequency and Percentage. These measures were used to describe the profile of the teachers and the academic performance of learners. These were specifically used to answer problem statements 1 and 4.

Mean and Standard Deviation. These were utilized to describe the extent of television utilization as an instructional tool and the extent of teaching effectiveness in using television as an instructional too. These were particularly used to answer problem statements 2 and 3.

Spearman Rho Correlations. Because data sets do not follow normal distribution, Spearman Rho Correlation was used. This technique was employed to determine correlations between variables. In particular, this correlation formula was used to answer statement of the problems 5, 6, 7, and 8.

Ethical Considerations

The study strictly followed ethical research standards and principles to ensure the protection and integrity of all participants.

Informed consent was obtained from all respondents after they are fully informed about the purpose of the study, and participation was entirely voluntary. For learner respondents, parental consent was secured prior to their involvement. The researcher ensured that all data were treated

with strict confidentiality, with no names or identifying information disclosed in any part of the report.

Respondents have been assured of the right to withdraw from the study at any stage without facing any penalty or consequence. Furthermore, the research complied with the provisions of the Data Privacy Act of 2012 (Republic Act No. 10173) to safeguard the privacy of participants. The researcher also guaranteed that all data were collected and analyzed objectively, ensuring honesty, transparency, and integrity throughout the conduct of the study.

Confidentiality is pivotal in research involving human subjects. Participants' personal information must be protected from unauthorized access or disclosure (Barrow JM., 2022). Researchers were obliged to take measures to preserve the anonymity and privacy of participants, which fosters trust and encourages participation in research. Justice in research ethics refers to the fair selection and treatment of research participants⁸. It ensures that the benefits and burdens of research are distributed equitably among different groups in society, preventing the exploitation of vulnerable populations.

III. RESULTS AND DISCUSSION

This section presents the relevant results of the study based on the data gathered. Significant findings are presented according to the sequence of the problem statements.

Specific results are focused on the quantitative evidences collected as specified in the methodology. These are presented in tabular presentations showing the frequency distribution, mean ratings, and correlation analysis.

Respondents Profile

**TABLE 2
 FREQUENCY AND PERCENTAGE DISTRIBUTION OF THE TEACHER
 RESPONDENTS**

Age	f	%
20-35 years old	17	38%
36-45 years old	15	33%
46-55 years old	11	24%
56-65 years old	2	4%
Total	45	100%
Sex		
Male	12	27%
Female	33	73%
Total	45	100%
Civil Status		
Single	12	27%
Married	32	71%
Separated/Divorced	0	0%
Widowed	1	2%
Total	45	100%
Education		
BSEd/BEEEd	0	0%
MA degree/units	45	100%
Doctoral degree/units	0	0%
Total	45	100%
Years in Teaching		
less than 1 year	0	0%
1-5 years	4	9%
6-10 years	8	18%
11-15 years	10	22%
16-20 years	12	27%
20 years above	11	24%
Total	45	100%
Trainings		
None	0	0%
1-2 trainings	13	29%
3-4 trainings	12	27%
5 or more trainings	20	44%
Total	45	100%
Position		
T1	6	13%
T2	8	18%
T3	26	58%
MT1	3	7%
MT2	2	4%
Total	45	100%

Table 2 shows a detailed breakdown of the frequency and percentage of teacher respondents based on different demographic and professional traits. An examination of this data provides information about the teachers' age, gender, marital status, level of education, years of teaching experience, training received, and specific roles they have held. Comprehending these demographics can greatly aid in the development of policies and programs designed to address the requirements of the teaching workforce.

The age distribution shows that most of the people who answered are younger, with 38% being 20–35 years old and 33% being 36–45 years old. This trend points to a younger group of teachers, which could bring energy and new ways of teaching to the classroom. A significantly smaller proportion of respondents, merely 4%, belong to the 56-65 age group, suggesting a potential concern regarding the imminent retirement of seasoned educators, which may affect institutional knowledge and mentorship opportunities (Smith et al., 2023).

There are a lot more female teachers than male teachers, with 73% of respondents being female and only 27% being male. This difference fits with a larger trend in education where women are often more likely than men to be teachers. This gender ratio may change how things work in schools, which could lead to conversations about how men are represented and how they can become leaders in the teaching profession (Johnson & Welling, 2023).

Next, looking at their civil status, it's interesting to note that 71% of teachers are married. This shows that their personal lives are stable, which can help them keep their professional commitments. On the other hand, only 2% of them are widowed, and none of them said they were separated or divorced. Teachers' marital status may affect how involved they are in community activities and how they interact with students and parents, since family obligations can affect how available they are and how emotionally invested they are in their jobs (Black & Craig, 2023).

All of the teachers who answered had a Master's degree or something similar, which shows that teachers have a high level of education. This consistency shows that teachers are dedicated to professional development and likely have advanced knowledge of both pedagogy and content, which is important for improving educational outcomes (Johnson et al., 2023). The lack of respondents holding doctoral degrees may signify an impediment to career advancement

opportunities or a preference for practical experience over academic qualifications within this teaching group.

About 27% of the teachers have taught for 16 to 20 years, and 24% have taught for more than 20 years. This indicates a strong group of experienced teachers who probably have a lot of knowledge and skills to share with their students. On the other hand, the fact that there aren't any teachers with less than a year of experience means that the sample may not have the new ideas that new teachers usually bring, which can slow down innovation (White, 2023).

When it comes to training, data show that 44% of those who answered have been to five or more training sessions. This shows a strong commitment to ongoing professional development, which is necessary to keep up with the changing world of education. A high percentage of trained teachers is linked to better teaching methods and better student performance. This means that the training programs are working for a large number of teachers (Green & Mustafa, 2023).

Finally, the breakdown of teaching jobs shows that 58% of teachers are in the T3 category. This could mean that there is a hierarchy among the teachers, with T3 positions indicating a mix of experience, expertise, and duties that can affect how the school runs and how well students learn. The fact that only 7% and 4% of teachers are in higher-up positions like MT1 or MT2 raises questions about who should be in charge in schools and shows how important it is to have ways for aspiring leaders to move up and get help (Peterson, 2023).

The demographic data in Table 2 gives us important information about the teaching staff's traits and experiences. The fact that most of the teachers are young women with a lot of teaching experience and high levels of education shows the strengths and areas where the faculty can improve. To make the teaching environment better, it will be important to keep supporting professional development and take steps to improve gender dynamics and leadership opportunities. Subsequent research should focus on examining the effects of these demographics on student outcomes and institutional efficacy.

Summary of Findings

Relative to the results and discussions that are previously presented, the following summarizes the relevant findings.

Majority of the teachers are of prime working ages. Female teachers outnumbered male and majority of them are married. All teachers are at least master's degree unit earners with teacher 3 as the most common position hold.

Extent of TV utilization as an instructional tool is very high in terms of content delivery and presentation, consistency, and learning facilitation. On the other note, only high extent as to technical and collaborative aspects.

Extent of teaching effectiveness of TV utilization as an instructional tool is very high in terms of instructional delivery, learners' engagement, and resource limitations.

The academic performance of the learners is skewed to proficient level with 75% of the population. The other 25% displayed highly proficient performance.

Civil status, position, years in teaching and trainings of teachers significantly correlate to the extent of TV utilization as an instructional tool.

Civil status, position, years in teaching and trainings of teachers significantly correlate to the extent of teaching effectiveness of TV utilization as an instructional tool.

Civil status, position, years in teaching and trainings of teachers significantly correlate to the academic performance of the students.

Correlation analysis also posited significant interrelationships among the extent of TV utilization, the teaching effectiveness, and the learners' academic performance. Moreover, areas needing further enhancements include the collaborative and technical aspects of TV utilization which provides inputs to the proposed program of the study.

IV. CONCLUSIONS

Relative to the findings presented above, the following conclusions were drawn.

The profile of the teacher respondents reveals a diverse and experienced group that is predominantly female, with a significant majority holding advanced degrees, primarily a Master's degree. The demographic data indicates a youthful teaching workforce, with many respondents between the ages of 20 to 45, which can bring contemporary perspectives and innovative teaching approaches into the classroom. The respondents' civil status reflects a stable personal environment, predominantly comprising married teachers, which may contribute to their commitment to their professional roles. Additionally, the teachers exhibit a range of experience levels, with a substantial number having teaching experience of over 6 years, suggesting a foundation of practical knowledge and expertise that contributes to their effectiveness as educators. This rich profile underscores the potential for collaboration and professional development initiatives that can further enhance their instructional practices and positively impact student outcomes.

The extent of television utilization as an instructional tool demonstrates a significant positive impact across key dimensions, including content delivery and presentation, consistency, learning facilitation, and technical and collaborative projects. The findings indicate that educators employ television effectively to enhance clarity in instructional delivery, maintain student engagement, and facilitate complex learning experiences, thereby creating a dynamic classroom environment. Consistent integration of television into teaching practices further reinforces educational objectives, while the collaborative use of technology promotes resource sharing and collective learning among educators. These aspects collectively highlight the valuable role of television not only as a multimedia resource but also as a catalyst for fostering innovative teaching strategies that enhance student learning and achievement. This multifaceted approach to television utilization underscores its potential to transform traditional educational methodologies into more engaging and effective practices.

The extent of teaching effectiveness in utilizing television as an instructional tool significantly influences instructional delivery, learners' engagement, and resource utilization. The strong positive correlations between these dimensions indicate that educators who perceive

themselves as effective in integrating television into their teaching practices are more likely to enhance their students' academic performance. Effective instructional delivery through television allows for clearer communication of concepts, while increased learner engagement fosters a more active learning environment. Furthermore, optimal resource utilization demonstrates that teachers can leverage multimedia tools to enrich their lessons and provide diverse learning experiences. Collectively, these elements underscore the critical role of television in modern education, highlighting how its effective use can lead to improved outcomes for both educators and students, thereby reinforcing the importance of ongoing professional development in this area.

The academic performance of learners, as reflected in the average ratings from the first and second quarters, showcases a predominantly positive trend, with a significant majority of students attaining proficient or highly proficient levels. With 75% of learners categorized as proficient and an additional 25% classified as highly proficient, the data indicates that the instructional strategies in place are effectively facilitating student learning and comprehension. The absence of students in the lower proficiency ranges further highlights the overall effectiveness of the teaching methods and resources utilized, suggesting a well-structured educational environment that supports academic success. This strong performance underscores the importance of continued investment in effective teaching practices and resources, including the integration of multimedia tools, to sustain and enhance student achievements moving forward.

The relationship between the profile of respondents and their perceived extent of television utilization as an instructional tool reveals essential insights into how various demographic and professional factors influence educators' engagement with multimedia resources. The findings indicate that while factors such as age, sex, and civil status showed negligible correlation with perceived television utilization, significant relationships emerged with respect to position, years of teaching experience, and training. Educators in higher positions and those with extensive teaching experience tended to perceive their utilization of television more positively, suggesting that enhanced access to resources and professional development opportunities plays a crucial role in fostering effective teaching practices. Overall, these results highlight the importance of supporting educators through targeted training and collaborative initiatives to maximize the

potential of television as a dynamic instructional tool, ultimately benefiting student engagement and learning outcomes.

The relationship between the profile of respondents and their perceived extent of teaching effectiveness in using television as an instructional tool underscores the significance of demographic and professional factors in shaping educators' teaching practices. The analysis reveals that variables such as position, years of teaching experience, and training are positively correlated with perceptions of teaching effectiveness, indicating that experienced and well-trained educators are more confident and effective in integrating television into their instruction. In contrast, factors like age, sex, and civil status showed no significant impact on perceived teaching effectiveness. These findings suggest that enhancing professional development opportunities and fostering leadership roles within the educational environment can empower teachers to utilize television more effectively, leading to improved instructional strategies and ultimately enriching student learning experiences. Overall, the results highlight the critical importance of supporting educators in their professional growth to maximize the benefits of television as an educational resource.

The relationship between the profile of respondents and the academic performance of learners highlights the influential role that educators' backgrounds and experiences can play in shaping student outcomes. The findings indicate that while demographic factors such as age, sex, and civil status did not show significant correlations with student academic performance, significant positive relationships emerged with the respondents' position within the educational hierarchy, years of teaching experience, and training received. Educators in higher positions and those with extensive experience and training were associated with better student performance, suggesting that their expertise and access to resources allow for more effective instructional practices. This correlation emphasizes the need for sustained investment in professional development and supportive structures that enable educators to maximize their impact on student learning. Ultimately, fostering a highly skilled and experienced teaching workforce can lead to improved academic outcomes for learners, reinforcing the importance of aligning educational initiatives with the professional growth of teachers.

The correlation between the respondents perceived extent of television utilization as an instructional tool and their teaching effectiveness demonstrates a strong and significant relationship across multiple dimensions. The high Spearman's rho values indicate that educators who effectively integrate television into their teaching practices perceive enhanced effectiveness in instructional delivery, learner engagement, and resource utilization. This relationship suggests that television serves not only as a valuable educational resource but also as a catalyst for improving teaching methodologies and fostering greater student involvement in the learning process. By embracing and maximizing the use of television in educational settings, teachers can create more dynamic and interactive learning environments that elevate their overall teaching effectiveness. These findings underscore the importance of providing educators with the necessary training and resources to effectively integrate television into their instruction, ultimately leading to improved educational outcomes for students.

The correlation between the respondents perceived extent of television utilization as an instructional tool and the academic performance of learners reveals a significant positive relationship across various dimensions. The strong Spearman's rho values indicate that educators who actively engage with and effectively incorporate television into their teaching practices tend to observe higher academic performance among their students. This relationship underscores the importance of television as a powerful educational resource that can enhance content delivery, reinforce learning, and engage students in meaningful ways. By utilizing television effectively, teachers can provide rich, multimedia experiences that cater to diverse learning styles and contribute to improved comprehension and retention of material. These findings emphasize the need for ongoing professional development to support educators in leveraging television as an instructional tool, ultimately fostering better academic outcomes and promoting a more enriching learning environment for students.

Moreover, the correlation between the respondents perceived extent of teaching effectiveness and the academic performance of learners highlights a significant and positive relationship, indicating that effective teaching practices directly contribute to improved student outcomes. The substantial Spearman's rho values suggest that educators who perceive themselves as effective in their teaching approaches, which may include clear instructional delivery, active

student engagement, and optimal resource utilization, are likely to witness higher levels of academic performance among their students. This connection reinforces the idea that teacher efficacy plays a crucial role in shaping the educational experiences of learners, as effective instructors foster environments that support student learning and promote academic success. Consequently, prioritizing professional development that enhances teaching effectiveness is essential for improving student achievement, as it not only empowers educators but also creates a positive ripple effect that benefits learners' overall academic performance.

REFERENCES

- [1.] Bonus, J. A. (2025). Educational television and children's learning motivation.
- [2.] Richtmann Journal (2023). Instructional Television Utilization for Cognitive Learning.
- [3.] Watson, J. (2020). Rapid evidence review: Educational television.
- [4.] Nieto Castro, A. (2025). Evidence from the Digital Television Transition in the UK.
- [5.] Hedayat, M. (2017). Introducing Smart TVs in classrooms an Innovative Learning Methodology.
- [6.] Santos, M. A. (2024). Technology Based Instructional Materials Utilization and Academic Performance.
- [7.] EdTechHub Blog. (2024). Using television to create a more inclusive learning environment.
- [8.] Zhang, L. (2025). Television exposure in early childhood and subsequent cognitive outcomes.
- [9.] Watson, J., & McIntyre, N. (2020). Educational Television: Rapid Evidence Review. EdTech Hub. <https://doi.org/10.5281/zenodo.3956366>
- [10.] Clark, R. C., & Mayer, R. E. (2016). E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning (4th ed.). Wiley.
- [11.] Joint Memorandum No. 002, S. 2021
- [12.] Estaiteyeh, M., & DeCoito, I. (2024). Differentiated instruction in digital video games: STEM teacher candidates using technology to meet learners' needs. *Interactive Learning Environments*, 32(7), 3768-3782.
- [13.] Dimaro, S. R., Garzon, A. J., Matba, B. A., & Malayao, S. J. (2023). Development and Implementation of Vodcast in Teaching Light for Grade 8 Students. *Asia Research Network Journal of Education*, 3(3), 119-142.
- [14.] Attahakul, P. (2024). Revolutionizing Learning: The Transformative Role of Technology in Modern Education. *Journal of Asian Language Teaching and Learning (Online)*, 5(3), 15-26.
- [15.] Pangilinan, A. M. (2025). Challenges and Commitment to Teaching: A Quantitative Descriptive-Correlational Study of Filipino Teachers in Select Coastal Villages. *International Journal of Open-access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 4(2), 1684-1692.
- [16.] Mariscal, L. L., Albarracin, M. R., Mobo, F. D., & Cutillas, A. L. (2023). Pedagogical Competence towards Technology-Driven Instruction on Basic Education. *Online Submission*, 4(5), 1567-1580.
- [17.] Fardad, N., & Fardad, F. (2023). The Necessity and Application of Educational Technology in Teaching. *International Journal of New Findings in Health and Educational Sciences (IJHES)*, 1(3), 38-47.
- [18.] Mariscal, L. L., Albarracin, M. R., Mobo, F. D., & Cutillas, A. L. (2023). Pedagogical Competence towards Technology-Driven Instruction on Basic Education. *Online Submission*, 4(5), 1567-1580.
- [19.] Shen, J., Zhang, S., Sun, D., Ge, R., Chen, S., Fang, J., & An, Q. (2025). Comparison of face-to-face teaching and online teaching in neurosurgery education for medical students. *BMC Medical Education*, 25(1), 232.

- [20.] Atieku-Boateng, H., Addo-Tara, A., Osei, R. D., Atieku-Boateng, B., & Ameko, S. K. Evaluating ChatGPT's Effect on Students' Independent Learning Experiences: The Case of Pentecost University, a Ghanaian Higher Educational Institution.
- [21.] Zhu, X., & Wang, Z. (2025). Journalism and communication professional personnel training and precise teaching methods based on artificial intelligence. *International Journal of Continuing Engineering Education and Life Long Learning*.
- [22.] Yanuarto, W. N., Wahyuni, S., Suanto, E., & Hapsari, I. (2025). Education That Matters: Investigating the Quality of Secondary Schooling in Support of Sustainable Development Goal 4. *Educational Process: International Journal*, 18, e2025465.