

**Importance of Visual Learning Tools and Learning Development
of Hearing Impaired Learners**

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ABSTRACT

This survey-correlational research explored the level of importance of visual learning tools and the learning development of hearing-impaired learners during the 2025-2026 academic year. Thirty-six (36) learners with hearing impairments from Kalibo Integrated Special Education Center and Kalibo Pilot Elementary School participated in the study, which aimed to answer twenty-two specific questions regarding the importance of visual learning tools and twenty-six questions regarding the learning development of hearing-impaired learners. Data were collected using a researcher-made questionnaire, validated by two experts in inclusive education and an English critic. Following validation, the questionnaire was finally tested with the same thirty-six (36) learners from Kalibo Integrated Special Education Center and Kalibo Pilot Elementary School. Factor analysis, construct validation, and reliability testing were conducted using Statistical Package for the Social Sciences (SPSS) software. The independent variable was the level of importance of visual learning tools, while the dependent variable was the level of learning development of hearing-impaired learners. Descriptive statistics and Pearson correlation were employed for data analysis, with a significance level set at 0.05. The level of importance of visual learning tools and their impact on the learning development of hearing-impaired learners. Additionally, a significant relationship between visual learning tools and the learning development of hearing impaired learners was found.

Keywords: Visual learning tools, hearing-impaired learners, learning development, inclusive education, Pearson correlation.

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INTRODUCTION

Education plays a vital role in promoting equal opportunities for all learners, including those with disabilities, by providing meaningful and accessible learning experiences that support their academic, social, and emotional development. In contemporary educational settings, inclusive education has become an important principle that emphasizes the right of every learner to participate fully in quality education regardless of physical, sensory, intellectual, or developmental conditions. Among learners with special educational needs,

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hearing-impaired learners require particular attention because their condition significantly affects communication, comprehension, and classroom participation. Since hearing is closely connected to language acquisition and interaction, limitations in auditory perception often influence how hearing-impaired learners receive, process, and interpret information within instructional environments. As a result, educational institutions and teachers are challenged to adopt instructional approaches and strategies that address the unique learning needs of these learners while ensuring their active participation and meaningful engagement in the learning process.

Learning was generally considered a multisensory process that involved the interaction of several sensory channels such as hearing, sight, and touch. However, for learners with hearing impairment, the auditory channel was partially or completely inaccessible, which significantly affected how they received and processed information in educational settings. Hearing-impaired learners often relied heavily on visual input to access lesson content, interpret classroom instructions, and participate in academic activities. Because of this reliance on visual information, instructional practices for hearing-impaired learners had to be adapted to ensure that learning materials and teaching strategies were visually accessible and meaningful. Understanding the learning needs and communication characteristics of hearing-impaired learners was therefore essential in developing effective instructional approaches that supported their academic development.

Hearing impairment was a condition where a person had partial or complete difficulty in hearing sounds. It ranged from mild hearing loss, where sounds were hard to hear clearly, to profound hearing loss, where a person could not hear most sounds at all. Hearing impairment may have been present from birth or may have developed later due to illness, injury, aging, or exposure to loud noise. Learners with hearing impairment may have found it challenging to understand spoken instructions, participate in conversations, or follow discussions in the classroom. However, with the right support, they could learn effectively and achieve their full potential.

Teaching learners with hearing impairment required patience, care, and creativity. Teachers had to use more visual materials such as pictures, videos, charts, and written instructions to help learners understand the lesson better. It was also helpful to face the learner when speaking so they could see facial expressions and lip movements. Using simple and clear words, repeating important ideas, and allowing extra time for understanding made learning easier for them. Some learners may have used sign language, hearing aids, or other tools that supported communication. Most importantly, teachers had to create a friendly and inclusive classroom where learners felt accepted, confident, and encouraged to participate. With proper guidance and understanding, learners with hearing impairment could grow academically, socially, and emotionally.

Visual learning tools were very important in helping learners understand lessons more clearly and effectively. These tools included pictures, charts, diagrams, videos, flashcards, graphic organizers, and other materials that allowed learners to see information, not just hear it. Through visual learning tools, abstract ideas became easier to understand because learners could connect words with images. This approach was especially helpful for learners who needed additional support in processing information, as visuals could improve attention, memory, and comprehension. When teachers used visual materials, lessons became more engaging, meaningful, and easier to follow.

The use of visual learning tools was particularly important for learners with hearing impairment because they relied more on their sense of sight to understand information. Visual supports helped them follow instructions, grasp concepts, and actively participate in classroom activities. These tools also encouraged independence, confidence, and better academic performance because learners could review the material at their own pace. By integrating visual

learning tools in teaching, educators created a more inclusive learning environment where every learner had the opportunity to succeed and fully develop their skills.

In the Philippine context, visual learning approaches were recognized as important in teaching learners with hearing impairment. Francisco and Padilla (2023) found that Filipino hearing-impaired students learned better through visual gestural methods such as sign language and multimodal learning, which improved understanding, memory, and participation. However, Geneta (2020) reported that many Filipino parents lacked enough resources and strategies to support their children at home. This showed a gap between recommended teaching practices and their actual use, highlighting the need for stronger support systems that provided teachers and parents with effective visual learning materials and strategies both in school and at home.

Despite the growing recognition of visual learning strategies, research gaps still existed. Many studies focused on language and social studies, while subjects like science, mathematics, and higher education were less explored. Marc Marschark et al. (2016) noted that hearing-impaired learners differed in learning preferences and cognitive processing. In the Philippine context, limited resources and inconsistent teacher training also affected the effective use of visual strategies. These gaps highlighted the need for further research to develop effective and practical visual learning approaches for hearing-impaired learners. The promotion of inclusive education in the Philippines was supported by national laws that protected the rights of learners with disabilities. Republic Act No. 11650 ensured that learners with disabilities received proper educational services and support in inclusive classrooms. Likewise, Republic Act No. 7277 guaranteed their right to accessible and quality education. The Department of Education also promoted inclusive teaching practices and the use of assistive technologies and visual learning materials. These policies highlighted the responsibility of schools to provide equal learning opportunities and supported the need for research on effective visual learning strategies for hearing-impaired learners.

International studies showed that visual learning tools greatly benefited deaf and hard-of-hearing learners. The Accessible Educational Materials (AEM) Center found that captions and images improved reading, vocabulary, and engagement. Akay reported that audiovisual materials made social studies easier to understand, while Cheng et al. noted that well-organized visuals in videos reduced cognitive load and enhanced learning. These findings highlighted the key role of visual tools in supporting comprehension and participation for learners who relied on visual communication.

Learning development for hearing-impaired learners was all about helping them grow their knowledge, skills, and confidence, even when hearing was a challenge. These learners often depended on visual and tactile cues, such as gestures, sign language, written instructions, and visual aids, to understand lessons and express themselves. Their learning thrived when teachers used clear visual materials, repeated important ideas, and included hands-on activities. With patience, support, and the right tools, hearing-impaired learners developed critical thinking, problem-solving, and communication skills, showing that they could succeed just as well as their hearing peers.

The study was anchored on learning theories that explained how visual tools aided hearing-impaired learners. Dual Coding Theory by Allan Paivio suggested learning was more effective when information was presented through both words and visuals, activating two cognitive systems for better understanding and memory (Kanellopoulou et al., 2019). For hearing-impaired learners, visual materials like diagrams, charts, and images were essential for interpreting and organizing knowledge (Structural Learning, 2023).

Another theoretical foundation of this study was Multimedia Learning Theory developed by Richard E. Mayer and Roxana Moreno. This theory explained that learners understood lessons better when words and pictures were presented together in well-designed materials. Learning became meaningful when learners selected important information, organized ideas clearly, and connected them with what they already knew (Mayer, 2024). Multimedia materials such as captioned videos, animations, and interactive presentations could improve understanding when they were designed to avoid too much cognitive load (Canada, 2021). For hearing-impaired learners, combining visuals with written text or captions helped them better understand lessons and connect ideas more easily.

In light of these considerations, the present study aimed to examine the role of visual learning tools in supporting the learning development of hearing-impaired learners. Specifically, the study sought to determine the level of importance of visual learning tools and the level of learning development among hearing-impaired learners. It also investigated whether a significant relationship existed between the use of visual learning tools and learners' academic development. Understanding these relationships provided valuable insights for improving instructional practices, curriculum design, and educational policies that supported inclusive education for hearing-impaired learners.

Statement of the problem

This study aimed to determine the importance of visual learning tools in the learning development of hearing-impaired learners of Kalibo Integrated Special Education Center and Kalibo Pilot Elementary School for the school year 2025-2026.

Specifically, the study sought to answer the following questions:

1. What is the level of importance of visual learning tools?
2. What is the level of learning development of hearing-impaired learners?
3. Is there a significant relationship between the importance of visual learning tools and the learning development of hearing-impaired learners?
4. What output can be derived from the result of the study?

METHODOLOGY

This study employed a quantitative methodological approach grounded in descriptive-correlational research design to determine the importance of visual learning tools and the learning development of hearing-impaired learners in the Special Education centers within the District of Kalibo, Aklan during the school year 2025-2026. The methodology encompassed the discussion of the research design, participants, sampling technique, research instruments, validity and reliability procedures, data gathering process, ethical considerations, and statistical treatments utilized in the study. The procedures and analytical methods were carefully selected to ensure that the gathered data accurately reflected the relationship between the identified variables and provided a reliable basis for interpreting the findings in accordance with the objectives of the investigation.

The study aimed to recognize the importance of visual learning tools and the learning development of hearing-impaired learners in the SPED centers in the District of Kalibo, Aklan for the school year 2025-2026. A descriptive-correlational research design was employed in the investigation. According to Bhat (2020), descriptive-correlational research was used to describe and predict relationships among variables without any attempt by the researcher to manipulate or assign links between them, as they naturally existed within the real context. Canonizado (2020) further explained that the descriptive-correlational method aimed to determine and analyze the statistical relationship between two variables while ensuring that no

external or extraneous variables affected the outcome. This type of descriptive research assisted in determining how two variables fluctuated together and enabled researchers to examine the characteristics and relationships between variables without altering them. However, Yeshaswi (2024) emphasized that while correlation could reveal a relationship between variables, it did not establish causation or demonstrate that changes in one variable directly caused changes in another. Similarly, Bhandari (2021) stated that correlational research design examined the relationships between variables without any control or manipulation from the researcher, wherein the correlation indicated the strength and direction of the relationship, whether positive or negative, between two or more variables.

The study also utilized survey research as a technique for gathering data from a selected sample of individuals through systematic sampling and structured interviews. According to the International Encyclopedia of the Social & Behavioral Sciences (2015), survey research aimed to understand how social characteristics were distributed and to draw conclusions regarding broader populations or groups. This approach depended on well-designed sampling and measurement techniques while considering potential issues such as social desirability bias and non-response. McCombes (2019) likewise explained that survey research involved asking a group of individuals a series of questions in order to collect information and analyze their responses. The author identified six essential steps in conducting an effective survey, namely determining the target participants, selecting the mode of survey administration such as in-person surveys, creating the survey questions and general format, distributing the survey, evaluating the information gathered, and summarizing the findings.

In this study, the independent variable was the importance of visual learning tools, whereas the dependent variable was the learning development of hearing-impaired learners. For data analysis, descriptive statistical methods such as mean and standard deviation (SD) were employed, while inferential statistical methods included Pearson correlation (r). For all inferential tests, the significance level or alpha was fixed at .05.

The participants of the study consisted of thirty (30) learners with hearing impairments from Kalibo Integrated Special Education Center and six (6) learners from Kalibo Pilot Elementary School in the District of Kalibo, Aklan, with a total of 36 respondents. Specifically, Kalibo Integrated Special Education Center contributed 30 learners with hearing impairments, while Kalibo Pilot Elementary School contributed 6 learners. The respondents were selected through purposive sampling. Purposive sampling was considered appropriate under certain circumstances because it utilized expert judgment or selected respondents based on a specific objective. This type of sampling was commonly employed when measuring a difficult-to-reach population, such as learners with hearing impairments.

The data in the study were gathered using researcher-made questionnaires. The first instrument was the Importance of Visual Learning Tools to Hearing-Impaired Learners Questionnaire, which consisted of 22 items outlining the importance of visual learning tools among hearing-impaired learners. Each item in the questionnaire was answered using the following response options: 5 for Always, 4 for Often, 3 for Sometimes, 2 for Seldom, and 1 for Never. To describe the mean responses of the participants, the following arbitrary scale was utilized: 4.21-5.00 interpreted as Very high, 3.41-4.20 interpreted as High, 2.61-3.40 interpreted as Moderate, 1.81-2.60 interpreted as Low, and 1.00-1.80 interpreted as Very low.

The validity and reliability of the questionnaire were examined, and face validation was conducted to verify its content. Before the instrument was forwarded to the thesis committee for content assessment, it was first submitted to the researcher's supervisor for edits and suggestions. Following the validation of the content, the instrument was pilot-tested on thirty (30) non-respondents. The results of the pilot testing were subjected to computer-processed

reliability analysis using Cronbach's alpha through the Statistical Package for Social Sciences (SPSS) software. The reliability analysis generated a Cronbach's alpha coefficient of .865 for the Importance of Visual Learning Tools for Hearing-Impaired Learners, which was considered reliable and was therefore utilized in the study.

The second instrument was the Learning Development of Hearing-Impaired Learners Questionnaire, which consisted of 26 items outlining the learning development among hearing-impaired learners. Each item in the questionnaire was answered using the following response options: 5 for Always, 4 for Often, 3 for Sometimes, 2 for Seldom, and 1 for Never. The participants' mean responses were interpreted using the same arbitrary scale wherein 4.21-5.00 corresponded to Very high, 3.41-4.20 to High, 2.61-3.40 to Moderate, 1.81-2.60 to Low, and 1.00-1.80 to Very low.

The validity and reliability of the second questionnaire were likewise tested, and face validation was employed to confirm its content. Prior to its submission to the thesis committee for content validation, the instrument was forwarded to the researcher's adviser for revisions and recommendations. After the validation of the content, the instrument was pilot-tested on thirty (30) non-respondents. The results of the pilot testing were subjected to computer-processed reliability analysis utilizing Cronbach's alpha through the Statistical Package for Social Sciences (SPSS) software. The reliability analysis generated a Cronbach's alpha coefficient of .917 for the Learning Development of Hearing-Impaired Learners, which was considered reliable and therefore suitable for use in the study. Cronbach's alpha generated through the Statistical Package for Social Sciences (SPSS) software was used to tabulate the results of the final test in order to determine the reliability coefficient. Frost (2020) explained that a questionnaire was considered credible if the calculated Cronbach's alpha quantified the level of agreement on a standardized 0 to 1 scale.

To gather the necessary data, the researcher followed several procedures. Initially, the researcher sought permission from the Dean of the Graduate School at Filamer Christian University to conduct the study. Permission was likewise requested from the Schools Division Superintendent of Aklan. Subsequently, letters of permission were also submitted to the principals of Kalibo Pilot Elementary School and Kalibo Integrated Special Education Center. After one week and upon approval of the requests to conduct the study, the researcher personally distributed the printed survey questionnaires to the designated respondents because the participants were students with hearing impairments. Before the administration of the printed questionnaires, the respondents provided consent regarding the use of their personal data in accordance with the Data Privacy Act of 2012. The participants were formally briefed by the researcher regarding the proper manner of completing the questionnaires. Ethical considerations were strictly observed by informing the participants about the benefits of the study, the confidentiality of the collected data, and the purpose of their participation. After the retrieval of the accomplished questionnaires, the collected data were tabulated and processed using the Statistical Package for Social Sciences (SPSS) program.

The statistical techniques employed in the analysis of the data included mean, standard deviation (SD), and Pearson r. Mean was used to explain the level of importance of visual learning tools according to the respondents. Standard deviation (SD) was utilized to determine the homogeneity and heterogeneity of the scores obtained from the respondents. Pearson r was employed to determine the relationship between visual learning tools and learning development.

RESULTS AND DISCUSSION

The findings of the study were organized into descriptive and inferential data analyses to determine the level of importance of visual learning tools and the level of learning

development among hearing-impaired learners, as well as to examine the relationship between these variables using Pearson Product Moment Correlation. The discussion was grounded on the quantitative data gathered from the respondents and interpreted in direct relation to the objectives of the study. Descriptive statistical measures, particularly mean and standard deviation, were utilized to determine the respondents' perceptions regarding the importance of visual learning tools and the learning development of hearing-impaired learners, while inferential statistical analysis was employed to determine the significance of the relationship between the variables at a 5% alpha level. The interpretation of the findings was further supported by relevant scholarly literature to provide a comprehensive understanding of the role of visual learning tools in the academic development of hearing-impaired learners.

Level of importance of visual learning tools

The findings revealed that the level of importance of visual learning tools among hearing-impaired learners was rated as high, with a mean of 4.01 and a standard deviation of 0.29. Based on the established scale where 3.41–4.20 corresponded to a high level, the result indicated that respondents strongly recognized the significance of visual learning tools in supporting their educational experiences. The relatively low standard deviation of 0.29 further suggested consistency in the responses of the participants regarding the perceived importance of visual instructional materials.

The high level of importance attributed to visual learning tools indicated that visual instructional materials played a substantial role in facilitating the learning experiences of hearing-impaired learners. Because hearing-impaired learners have limited access to auditory information, visual representations such as diagrams, pictures, charts, captioned videos, and multimedia presentations became essential instructional supports that enhanced their understanding of lesson content. These materials enabled learners to follow classroom discussions more effectively, comprehend complex concepts with greater clarity, and retain information more efficiently. The findings implied that visual instructional supports served not merely as supplementary resources but as essential learning mechanisms that allowed hearing-impaired learners to access educational content in a more meaningful and comprehensible manner.

The findings further reflected the natural learning preferences of hearing-impaired learners, who primarily relied on visual channels for communication and information processing. When teachers incorporated visual elements into classroom instruction, learners were able to process information more systematically, organize ideas more effectively, and participate more actively during classroom activities. This suggested that visual learning tools enhanced both engagement and comprehension by aligning instructional delivery with the learners' dominant mode of learning. Consequently, the integration of visual instructional materials significantly strengthened learners' academic participation and understanding of classroom lessons.

Moreover, the consistent use of visual instructional materials appeared to facilitate the connection between newly introduced concepts and learners' prior knowledge. Visual supports allowed hearing-impaired learners to interpret abstract concepts through concrete and observable representations, making learning more accessible and meaningful. Through these visual representations, learners developed a deeper conceptual understanding of lesson content, which ultimately contributed to improved academic performance and strengthened learning outcomes.

The findings were supported by Rodrigues et al. (2022), who emphasized that visual learning materials assisted deaf and hard-of-hearing learners in understanding academic concepts by transforming abstract information into visual representations that were easier to interpret. According to the authors, visual instructional supports improved comprehension and enabled learners to process information more effectively within inclusive educational environments. Similarly, Marschark and Hauser (2019) highlighted that visual instructional supports such as images, diagrams, and multimedia presentations significantly enhanced comprehension and information retention among hearing-impaired learners. Their findings explained that visual learning resources helped learners organize information systematically and develop stronger conceptual understanding, particularly in lessons involving complex explanations.

The results were further reinforced by Almalhy (2022), who explained that digital visual learning tools such as captioned videos, animations, and interactive multimedia platforms allowed hearing-impaired learners to review lesson content repeatedly and understand instructional materials at their own pace. Through these technological supports, learners gained greater independence in accessing instructional information and strengthening comprehension of academic concepts. Likewise, Khasawneh (2023) noted that the integration of visual teaching strategies such as diagrams, visual demonstrations, and multimedia presentations significantly improved the accessibility of instructional content for hearing-impaired learners. The author emphasized that visually oriented instructional environments enabled learners to interpret complex information more clearly and engage more actively in classroom learning activities. In addition, Molapisi and Phasha (2024) emphasized that visually enriched learning environments played an important role in supporting the academic development of deaf and hard-of-hearing learners. Their findings revealed that visual instructional strategies improved learners' cognitive processing, classroom participation, and overall academic achievement.

Level of learning development of hearing-impaired learners

The findings showed that the level of learning development of hearing-impaired learners was rated as very high, with a mean of 4.54 and a standard deviation of 0.40. Based on the established scale where 4.21–5.00 corresponded to a very high level, the result indicated that hearing-impaired learners demonstrated strong learning development and positive academic progress. The standard deviation of 0.40 suggested that the respondents' perceptions regarding learning development were relatively consistent.

The findings revealed that while the importance of visual learning tools obtained a high rating with a mean of 4.01, the learning development of hearing-impaired learners was rated even higher at a very high level with a mean of 4.54. This suggested that although visual learning tools significantly contributed to learning development, they were not the sole determinants of learners' academic progress. The results implied that additional factors also played substantial roles in enhancing the learning development of hearing-impaired learners.

One possible explanation for the higher learning development score was the effectiveness of pedagogical strategies implemented by teachers within SPED classrooms. Teachers may have utilized structured instruction, differentiated teaching approaches, and reinforcement strategies that extended learning support beyond the use of visual instructional tools alone. Such instructional practices may have strengthened learners' comprehension and enabled them to achieve higher levels of academic performance. This finding highlighted the importance of combining instructional competence with accessible learning materials to maximize educational outcomes for hearing-impaired learners.

The findings also reflected the resilience, adaptability, and motivation of hearing-impaired learners. Despite communication barriers and challenges in accessing auditory information, hearing-impaired learners often developed strong visual-spatial abilities and persistence in learning tasks. When appropriate educational support systems were available, these learners were able to perform effectively in academic settings. The results therefore suggested that learner characteristics, including motivation and adaptability, contributed positively to their learning development.

Furthermore, the findings implied the presence of a synergistic relationship between visual learning tools and teacher competence. While visual instructional materials improved accessibility to educational content, effective teaching practices ensured that these materials were utilized meaningfully within the learning process. This combined influence may explain why learning development was rated higher than the perceived importance of visual learning tools alone. The findings therefore suggested that the academic development of hearing-impaired learners was influenced by multiple interconnected factors, including instructional strategies, teacher effectiveness, learner motivation, and the availability of accessible instructional materials.

The findings supported the work of Molapisi and Phasha (2024), who emphasized that appropriate instructional strategies and visual learning supports significantly enhanced the cognitive and academic development of hearing-impaired learners. According to the authors, visual communication systems and structured instructional materials enabled learners to better understand lesson content and improve overall academic performance. Similarly, Niksiar et al. (2025) found that visually supported learning environments allowed deaf learners to review lessons at their own pace and strengthen their understanding of academic concepts. Their study explained that digital learning platforms and visual simulations provided opportunities for learners to revisit lesson content repeatedly, thereby improving comprehension and promoting independent learning.

In addition, Anwar et al. (2024) reported that experiential and visually supported learning activities contributed positively to the academic competence and confidence of hearing-impaired learners. Through interactive learning activities and visual demonstrations, learners became more engaged in the learning process and developed stronger academic skills. These findings collectively reinforced the idea that learning development among hearing-impaired learners was enhanced through the combined effects of visual instructional support, effective teaching practices, and learner engagement.

Relationship between the importance of visual learning tools and learning development

The inferential analysis revealed that there was a significant relationship between the importance of visual learning tools and the learning development of hearing-impaired learners. Using Pearson Product Moment Correlation, the computed Pearson r value was 0.726 with a significance value of 0.000, which was lower than the 0.05 level of significance. Since $p = 0.000$ was less than 0.05, the null hypothesis was rejected. The result indicated a statistically significant positive relationship between the importance of visual learning tools and the learning development of hearing-impaired learners at the 5% alpha level.

The obtained correlation coefficient of $r = 0.726$ indicated a strong positive relationship between the variables. This suggested that as the perceived importance and utilization of visual learning tools increased, the learning development of hearing-impaired learners also improved. The strong relationship implied that visual instructional materials served as essential educational supports that directly contributed to learners' comprehension, participation, and

academic growth. For hearing-impaired learners who primarily depended on visual input for learning, instructional content delivered through diagrams, charts, images, and captioned videos became fundamental mechanisms for understanding lesson concepts and classroom discussions.

The findings further implied that improvements in the clarity, quality, and design of visual instructional materials directly influenced the effectiveness of learning experiences among hearing-impaired learners. Well-designed diagrams, multimedia presentations, and captioned videos enhanced learners' comprehension and conceptual understanding, while poorly developed visual materials may have limited their ability to process instructional content effectively. This highlighted the importance of ensuring that visual instructional materials were carefully designed, accessible, and aligned with the learning needs of hearing-impaired learners.

Moreover, the results emphasized that visual learning tools functioned as the primary language of instruction for hearing-impaired learners. Since these learners relied heavily on visual channels to access and interpret information, the effectiveness of visual instructional design became a critical determinant of academic success. The findings therefore suggested that enhancing the quality and consistency of visual instructional materials could produce direct and measurable improvements in learners' academic performance and overall learning development.

The findings were supported by Rodrigues et al. (2022), who emphasized that visual learning materials significantly improved the ability of deaf and hard-of-hearing learners to understand academic concepts. According to the authors, visual representations transformed abstract ideas into observable formats that learners could easily interpret, thereby improving conceptual understanding and information retention. Similarly, Marschark et al. (2014) highlighted that visual instructional strategies strengthened comprehension and memory retention among hearing-impaired learners. Their findings revealed that visual aids assisted learners in organizing information and establishing meaningful connections between concepts, resulting in deeper cognitive processing and improved academic performance.

Collectively, the findings reinforced the importance of visual learning tools in promoting the learning development of hearing-impaired learners. The integration of visual instructional materials enhanced learners' comprehension, strengthened engagement, and contributed positively to academic achievement. The significant relationship established through the Pearson Product Moment Correlation analysis confirmed that visual learning tools played a vital role in supporting the educational development of hearing-impaired learners. Consequently, the null hypothesis stating that there was no significant relationship between the importance of visual learning tools and the learning development of hearing-impaired learners was rejected.

Visual learning enhancement program for hearing-impaired learners

Based on the findings of the study, the researcher proposed the implementation of the "Visual Learning Enhancement Program for Hearing-Impaired Learners" in the SPED centers within the District of Kalibo, Aklan. The proposed program was designed to strengthen the integration of visual learning tools in classroom instruction to further support the learning development of hearing-impaired learners. The proposal was grounded on the findings that the importance of visual learning tools was rated high with a mean of 4.01 and a standard deviation of 0.29, the learning development of hearing-impaired learners was rated very high with a mean of 4.54 and a standard deviation of 0.40, and there was a statistically significant relationship between visual learning tools and learning development, as indicated by the Pearson r value of 0.726 and significance value of 0.000 at the 5% alpha level.

The proposed program aimed to enhance the use of visual learning tools in teaching hearing-impaired learners, develop visually supported instructional materials that improved learners' comprehension, strengthen teachers' competencies in implementing visual teaching strategies within SPED classrooms, promote collaboration among teachers, school administrators, and parents, and integrate captioned instructional materials in Filipino and Aklanon to improve accessibility for learners. These objectives reflected the study's recognition that hearing-impaired learners primarily relied on visual input to access and interpret instructional content, making visual instructional supports essential for comprehension, participation, and academic success.

The program components included a captioning initiative that involved training workshops on captioning tools and multilingual subtitles to ensure accessibility and comprehension among learners. The initiative targeted teachers, ICT coordinators, and language teachers and was scheduled once a year with a proposed budget allocation of PHP 15,000, producing captioned instructional videos as expected outputs. Workshops and training activities were also proposed to improve teachers' competencies in visual teaching strategies and multimedia tools. These activities involved teachers and administrators, were scheduled once a year, and had a proposed budget of PHP 5,000, with trained teachers identified as the expected outcome.

The proposed program further included instructional material development activities involving the creation of charts, diagrams, and captioned videos to provide accessible instructional resources for hearing-impaired learners. These activities were intended to be conducted quarterly by teachers with a proposed budget allocation of PHP 5,000, resulting in the development of visual instructional materials. Classroom implementation activities were likewise proposed to integrate visual learning tools consistently into lessons to enhance learner engagement and improve classroom instruction. These activities involved teachers and learners throughout the school year with a budget allocation of PHP 2,000.

In addition, learner engagement activities such as storytelling and multimedia sessions were proposed to promote active participation among hearing-impaired learners. These activities were intended to be conducted monthly with a proposed budget allocation of PHP 3,000 and were expected to increase learner engagement. Parent and teacher collaboration activities were also proposed through meetings and orientations conducted quarterly to strengthen home-school support systems. These activities involved parents and teachers with a budget allocation of PHP 2,000 and aimed to improve collaborative support for learners. Monitoring and evaluation activities were likewise included to assess the effectiveness of instructional materials and ensure continuous quality improvement. These activities involved teachers and administrators at the end of the school year with a proposed budget allocation of PHP 3,000, resulting in an evaluation report. The overall proposed budget for the implementation of the Visual Learning Enhancement Program for Hearing-Impaired Learners amounted to PHP 35,000.

CONCLUSION

This chapter synthesized the major findings of the study concerning the level of importance of visual learning tools and the learning development of hearing impaired learners in the SPED centers in the District of Kalibo, Aklan during the school year 2025–2026. Anchored on the objectives of determining the importance of visual learning tools, assessing the learning development of hearing impaired learners, and examining the relationship between these variables, the study utilized a descriptive-correlational research design involving

thirty-six (36) hearing impaired learners selected through purposive sampling. Data were gathered through validated researcher-made questionnaires and analyzed using mean, standard deviation, and Pearson product-moment correlation coefficient at an alpha level of .05. The findings served as the basis for the conclusions and recommendations presented in this chapter, emphasizing the role of visual instructional supports in enhancing the educational experiences and academic development of hearing impaired learners.

The study revealed that the level of importance of visual learning tools among hearing impaired learners was “high,” while the level of learning development of hearing impaired learners was “very high.” Furthermore, the findings confirmed the existence of a significant relationship between the importance of visual learning tools and the learning development of hearing impaired learners. These findings demonstrated that visual instructional materials play a vital role in supporting comprehension, participation, retention, and overall academic engagement among learners with hearing impairments. The availability of visual supports enables learners to follow classroom discussions, interpret complex concepts, and retain important instructional information more effectively. As teachers integrate visual instructional materials into classroom instruction, learners become more engaged in educational activities and are able to participate actively in classroom tasks. Consequently, visually enriched instructional environments strengthen learners’ comprehension skills and improve their capacity to process academic information, thereby promoting accessibility and inclusivity in learning experiences for hearing impaired learners.

The findings further indicated that inclusive teaching approaches and visual instructional supports contribute significantly to the learning development of hearing impaired learners. The incorporation of structured learning materials, visual explanations, and interactive teaching strategies enables learners to understand lessons more clearly and perform better in academic activities. These instructional approaches help learners organize information effectively and establish connections between newly acquired knowledge and prior learning experiences. As learners gain greater understanding of lesson content, they also develop increased confidence in participating in classroom discussions, completing academic tasks, and expressing their understanding of instructional concepts. Supportive learning environments additionally encourage learners to remain motivated and actively engaged in their educational experiences, which contributes to positive learning attitudes and improved academic performance.

The significant relationship between the importance of visual learning tools and the learning development of hearing impaired learners further emphasized the effectiveness of integrating visual instructional materials into classroom teaching practices. When visual instructional materials are effectively incorporated into instruction, learners are able to process information more efficiently and understand academic concepts more clearly. Visual supports provide alternative pathways for accessing instructional content, particularly for learners who are unable to rely on auditory explanations during lessons. As the use of visual learning tools increases, learners become more capable of interpreting lesson content, organizing ideas, and demonstrating understanding through classroom activities and academic tasks. This relationship highlighted the importance of designing instructional strategies that align with the visual learning needs of hearing impaired learners. Consequently, the integration of visual learning tools significantly enhances learners’ comprehension, engagement, and overall academic development.

Overall, the findings affirmed that visual literacy serves as a fundamental foundation for the academic success of hearing impaired learners. The statistically significant relationship ($p = .000$) between the importance of visual learning tools and learners’ learning development confirmed that instructional design functions as a critical bridge in addressing the limitations associated with the absence of auditory input. Within the context of the District of Kalibo SPED

Center, well-designed visual instructional materials do not merely supplement instruction but instead function as the primary medium through which learners access, interpret, and construct knowledge.

In view of these findings, the study emphasized the need for hearing impaired learners to continue maximizing the use of visual learning materials to strengthen comprehension and academic performance. Learners may actively engage with diagrams, charts, pictures, captioned videos, multimedia presentations, visual notes, educational videos, and digital learning resources to improve understanding and retention of lesson concepts. Through continuous engagement with visual learning tools, learners can strengthen academic confidence, improve comprehension, and become more active participants in classroom activities.

The study likewise highlighted the important role of special needs teachers in strengthening the integration of visual learning tools into instructional practices. Teachers may design lessons that incorporate diagrams, illustrations, graphic organizers, multimedia presentations, captioned videos, visual demonstrations, experiential learning activities, and collaborative problem-solving tasks to support learners' understanding of complex concepts. By implementing interactive and visually rich teaching strategies, teachers can help learners develop deeper conceptual understanding, improve information processing, and sustain active classroom participation. Teachers may also provide regular feedback regarding learners' academic progress to help learners identify strengths and areas requiring improvement. Continuous professional development related to visual teaching strategies may further strengthen teachers' instructional competence in handling learners who rely heavily on visual communication.

The findings also underscored the significance of parental involvement in supporting the effective use of visual learning tools and sustaining learners' academic progress. Parents may encourage learners to review lesson materials using educational videos, illustrated learning modules, and digital visual resources that complement classroom instruction. They may likewise establish supportive home learning environments by encouraging learners to complete assignments, review lessons, and practice concepts through visual learning activities. Maintaining communication with teachers enables parents to understand classroom instructional approaches and reinforce similar strategies at home. The use of visual calendars, labeled household objects, pictorial schedules, step-by-step visual guides, visual reminders, illustrated task lists, and simple infographics may further strengthen learners' retention, concept recognition, independence, and continuous learning outside the classroom.

Moreover, the study emphasized the critical role of school administrators in promoting inclusive educational practices and improving access to visual instructional resources. Administrators may organize workshops and seminars that introduce teachers to innovative visual teaching strategies and instructional technologies. Institutional support through the allocation of funds for assistive technologies, multimedia learning resources, and visual teaching materials may significantly improve classroom accessibility for hearing impaired learners. The recommendation to establish a "Digital Resource Bank" further highlighted the importance of creating a centralized cloud-based repository containing captioned videos, interactive slides, and other visual learning materials that teachers can easily access and utilize across different subjects and grade levels. Through collaborative resource sharing and continuous updating of instructional materials, schools can provide more consistent, engaging, and effective learning experiences for hearing impaired learners while reducing instructional preparation burdens among teachers.

The significant relationship identified between visual learning tools and learning development, particularly the strong positive correlation ($r = 0.726$), further reinforced the importance of systematically integrating graphic organizers, infographics, concept maps, sequencing diagrams, flowcharts, labeled illustrations, and step-by-step visual representations into classroom instruction, especially in abstract and concept-heavy subjects such as Science and Mathematics. The findings suggested that visual scaffolding strategies should be treated as a core instructional approach rather than merely optional support mechanisms. By embedding structured visual support consistently into daily lesson planning, educators can improve learners' comprehension, retention, participation, and overall academic development.

Finally, the study recommended that future researchers replicate and extend the investigation by examining additional variables that may influence the learning development of hearing impaired learners. Factors such as instructional strategies, assistive technologies, classroom environment, learner motivation, and teacher preparedness may be explored to generate deeper insights into effective educational practices for learners with hearing impairments. Conducting further studies in this area may assist educators, administrators, and policymakers in designing more responsive inclusive education programs and improving educational outcomes for hearing impaired learners.

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