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Visual Learning Performance of Learners with Special Needs in Cebu, Philippines

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Abstract

This study assessed the visual learning performance of Grade 1 and 2 learners in three SpEd Centers in Cebu during the school year 2018-2019 as a basis for classroom learning materials. A mixed method of research was used to gather quantitative data through a survey questionnaire and qualitative data through an interview. A total of 48 respondents were selected through purposive sampling technique. Gathered data were treated using frequency and percentage, weighted mean, chi-square test of independence, ANOVA and thematic analysis. Results showed that majority of the respondents were from 7-8 years old dominated by females, with parents who worked as vendors with the combined family monthly income from Php7,890-Php15,780. Moreover, the level of visual learning performance of the learners was satisfactory. Data further showed that visual memory had the significant relationship with the age, visual spatial relation had the significant relationship with the gender, and figure ground had the significant relationship with the gender and occupation. In contrary, visual memory and visual discrimination had no significant relationship to any of the profile variables. Only gender showed significant difference in the seven dimensions of visual learning performance of the learners when grouped by their profile. The problems encountered by the teachers include identifying figures, numbers, letters, and some colors in the wheel charts, counting numbers, sequencing patterns, pronunciation, reading and writing. It is recommended that the classroom learning materials be adopted to guide teachers and parents in supporting the learners in school and at home.

Keywords: Special Education, visual learning, quantitative-qualitative research, Cebu, Philippines

1. Introduction

The capacity to learn efficiently is a crucial component of academic achievement, but numerous learners encounter obstacles that impede their educational development. One of these obstacles, visual learning difficulties, greatly restricts learners' capability to understand, remember, and utilize information. Visual learning encompasses a range of perceptual skills, including visual memory, visual discrimination, visual sequential memory, visual-spatial relation, visual-spatial orientation, visual closure, and figure-ground perception (Groenewald, 2023; Khamenekhi, 2024).These cognitive processes are crucial for reading comprehension, copying from the board, recognizing patterns, and organizing ideas. Nonetheless, Yan et al. (2021) observed that students with insufficient visual learning abilities frequently find these tasks challenging, resulting in low academic achievement, increased frustration, and reduced motivation to learn. The lack of organized visual activities in early childhood education worsens these challenges, since children do not acquire the essential perceptual-motor skills needed for successful learning (Lo & Wang, 2024).

Theoretical perspectives suggest that early cognitive development, heavily influenced by environmental factors and parental engagement, is critical in shaping learners' learning capacities (Ma et al., 2016). A research study conducted by Battista et al. (2018) highlighted the significance of early experiences in reinforcing neural pathways, which supports cognitive abilities like problem-solving and pattern recognition. Socioeconomic factors, including the jobs of parents, income levels, and availability of educational resources, also play a critical role in shaping learners' capacity to enhance their visual learning skills (Blums et al., 2017). The Gestalt theory of perception, along with Gibson's ecological perspective, emphasizes the necessity of organized learning environments for promoting perceptual-motor development

(Martínez, 2022). These theoretical frameworks serve as a basis for understanding how specific visual exercises can enhance educational outcomes for students with special needs.

Furthermore, this study aims to assess the visual learning performance of Grade 1 and Grade 2 pupils in selected special education (SpEd) schools in Cebu, Philippines, to develop classroom learning materials tailored to their needs. Specifically, it seeks to determine the relationship between students' demographic profiles and their visual learning performance, identify challenges faced by teachers in addressing visual learning difficulties, and propose pedagogical interventions that enhance visual perception skills. The research contributes to the growing body of literature on visual learning by addressing these gaps. It offers practical solutions for educators to optimize learning experiences for learners with perceptual challenges.

2. Purpose of the Study

This study examines the visual learning performance of Grade 1 and Grade 2 learners in Naga Special Education (SpEd) Center, Lipata SpEd School, and Pardo SpEd School during the 2018–2019 academic year, serving as the foundation for developing classroom learning materials. Specifically, the study aims to analyze the learners' demographic profiles, including age, gender, parents' occupation, average monthly income, and working type of parents. Furthermore, it evaluates the learners' visual learning performance across seven key aspects: visual memory, visual discrimination, visual sequential memory, visual-spatial relation, visual-spatial orientation, visual closure, and figure-ground perception. This also evaluates if there is a notable connection between students' demographic characteristics and their performance in visual learning, as well as examines the differences in visual learning skills according to these profiles. Furthermore, it highlights the obstacles that educators encounter when dealing with visual learning challenges.

3. Methodology

This section presents the research design, environment, respondents, instrument, data gathering procedure, and treatment.

3.1 Research Design. The data on the learners' perceptual skills were gathered using a mixed-method approach combining quantitative and qualitative methodologies. This approach was chosen to provide a holistic understanding of the visual learning performance of learners with intellectual learning disabilities.

3.2 Research Environment. This study was conducted in the three SpEd Centers in Cebu namely: Naga SpEd Center, Lipata SpEd School, and Pardo SpEd School.

3.3 Research Respondents. This study's primary respondents were the Grade 1 and Grade 2 learners enrolled in Special Education centers in the identified province of Cebu, Philippines. In particular, only learners with intellectual learning disabilities were chosen. A total of 48 learners participated in this study.

3.4 Research Instrument. An adapted survey questionnaire on intellectual disability and development disorder was used to gather data on the learners' visual learning performance.

3.5 Data Collection. The researchers secured permission from respective offices to conduct the study. Informed consent was also secured, and respondents were assured that the data gathered were treated with the utmost confidentiality and for research purposes only. The data obtained were treated using appropriate statistical tools and thematic analysis for the quantitative data.

3.6 Treatment of Data. The gathered data were treated using frequency and percentage, weighted mean, chi-square test of independence, ANOVA and thematic analysis.

4. Results and Discussions

4.1 **Demographic Profile of the Respondents.** In Table 1, the data presents the demographic and socioeconomic characteristics of special education (SpEd) learners from three schools: Naga SpEd Center,

Lipata SpEd School, and Pardo SpEd School. The analysis covers four key aspects: age distribution, gender composition, parental occupation, and household income levels

Table 1: Profile of the Respondents

	Naga SpEd (n = 17)		Lipata SpEd (n = 19)		Pardo SpEd (n = 12)		Overall (n = 48)	
	f	%	f	%	f	%	F	%
A. Age (in years)								
7 - 8	8	47.06	6	31.58	6	50.00	20	41.67
9 - 10	6	35.29	7	36.84	3	25.00	16	33.33
11 and above	3	17.65	6	31.58	3	25.00	12	25.00
Mean :	8.88		9.58		9.25		9.25	
StDev :	1.76		1.81		1.96		1.82	
B. Gender								
Female	8	47.06	10	52.63	8	66.67	26	54.17
Male	9	52.94	9	47.37	4	33.33	22	45.83
C.Parent's Occupation								
Caretaker	1	5.88	1	5.26	-	---	2	4.17
Driver	4	23.53	6	31.58	3	25.00	13	27.08
Farmer	1	5.88	-	---	-	---	1	2.08
Guard	-	---	-	---	2	16.67	2	4.17
Janitor	-	---	2	10.53			2	4.17
Laborer	8	47.06	2	10.53	1	8.33	11	22.92
OFW	-	---	1	5.26	-	---	1	2.08
Staff					2	16.67	2	4.17
Vendor	3	17.65	7	36.84	4	33.33	14	29.17
D. Monthly Income (PhP)								
Less than 7,890	2	11.76	5	26.32	3	25.00	10	20.83
7,890 - 15,780	15	88.24	13	68.42	9	75.00	37	77.08
15,780 - 31,560	-	---	-	---	-	---	0	0.00
31,560 - 78,900	-	---	1	5.26			1	2.08
Mean :	8,824		10,632		9,750		9,771	
StDev :	1,468		8,467		2,379		5,490	

Age Distribution. The mean age of the students across the three schools is 9.25 years, with a standard deviation of 1.82, indicating some variability but a relatively consistent age range. The majority of students fall within the 7–8 years category (41.67%), followed by those aged 9–10 years (33.33%) and 11 years and above (25.00%). Notably, Lipata SpEd School has the highest mean age (9.58), slightly above the overall average, suggesting a potential difference in school entry age or retention patterns among SpEd learners.

Gender Composition. Overall, female students (54.17%) slightly outnumber male students (45.83%). However, there is variability across schools, with Pardo SpEd School having a notably higher percentage of female students (66.67%) compared to Naga SpEd Center (47.06%) and Lipata SpEd School (52.63%). The gender distribution suggests a near-equitable representation, although the reasons for the slight predominance of female students in Pardo SpEd School warrant further exploration.

Parental Occupation. The most common parental occupations across the three schools include vendors (29.17%), drivers (27.08%), and laborers (22.92%), indicating that most families belong to the working-class sector. Notably, Pardo SpEd School has a relatively high percentage of parents working as staff (16.67%) and guards (16.67%), while Naga SpEd Center has a significant proportion of laborers (47.06%). The occupational data suggests that most SpEd learners come from families engaged in blue-collar jobs, which may influence the financial capacity of households to support specialized educational needs.

Household Income. A majority of the families (77.08%) have a monthly income between **₱7,890 – ₱15,780**, which is within or slightly above the poverty threshold in the Philippines. Meanwhile, **20.83%** of families earn below **₱7,890**, indicating financial hardship. Only one family (2.08%) from Lipata SpEd School falls in the higher-income bracket (₱31,560 – ₱78,900). The mean income across schools is **₱9,771**, but there is a high standard deviation (₱5,490), suggesting income disparity among the families.

The findings indicate that most SpEd learners come from lower-income households, with parents primarily engaged in manual labor or small-scale entrepreneurial activities. The limited financial resources may pose challenges in providing necessary educational support, such as therapy, assistive learning tools, and specialized interventions. Additionally, the variation in age distribution suggests that some students may enter SpEd programs later than others, potentially due to delayed diagnosis or accessibility issues. The gender distribution, while nearly balanced, could indicate different parental or societal perceptions regarding the enrollment of boys and girls in SpEd programs.

According to Babayiğit and Shapiro (2020) late diagnosis and stigma often delay the enrollment of special needs children in SpEd programs, aligning with findings that older students (9–11 years) are still entering early SpEd education. Similarly, Greenburg and Winsler (2020) examined the age of entry for special education students and noted that children from low-income families tend to be diagnosed and enrolled later due to financial and healthcare barriers. Liukkonen (2017) observed that while boys are more frequently diagnosed with learning disabilities, girls tend to have higher enrollment rates in structured SpEd programs due to differences in behavioral responses to learning challenges.

In addition, Fulton et al. (2017) found that gender disparities in SpEd enrollment vary based on disability type, with more boys diagnosed with ADHD and autism, while more girls receive support for speech and developmental delays. Children from low-income households are more likely to require SpEd services due to limited access to early childhood interventions (Koseki, 2017). A study by Galasso et al. (2019)explored the correlation between parental occupation and educational opportunities, showing that children of laborers, drivers, and vendors often lack access to specialized learning resources. Similarly, Lin and Gold (2018) found that financial constraints limit access to high-quality SpEd programs, therapy, and assistive technology, which affects learning outcomes. UNESCO (2020) Global Education Report emphasized that financial instability among families leads to reduced educational participation for children with special needs (Mizunoya et al., 2018).

4.2 Level of Visual Learning Performance of the Learners

This section presents the level of degree of difficulties faced by the respondents in seven domains such as the visual memory, visual discrimination, visual sequential memory, visual spatial relationship, visual spatial orientation, visual closure, and figure ground. Table 2 presents the results.

Table 2: Level of Visual Learning Performance of the Learners

	Indicators	Naga SpEd (n = 17)		Lipata SpEd (n = 19)		Pardo SpEd (n = 12)		Overall (n = 48)	
		Mean	Int	Mean	Int	Mean	Int	Mean	Int
1.	Visual Memory	1.94	F	2.05	F	2.00	F	2.00	F
2.	Visual Discrimination	3.24	G	2.90	G	2.17	F	2.77	G
3.	Visual Sequential Memory	2.59	F	3.11	G	3.33	G	3.01	G
4.	Visual Spatial Relation	3.18	G	3.53	VG	3.58	VG	3.43	VG
5.	Visual Spatial Orientation	3.10	G	3.08	G	3.11	G	3.10	G
6.	Visual Closure	3.47	VG	3.74	VG	4.25	E	3.82	VG
7.	Figure Ground	2.94	G	2.84	G	3.17	G	2.98	G
	Aggregate Mean	**2.92**	**G**	**3.04**	**G**	**3.09**	**G**	3.02	**G**

Legend: 1.00 – 1.80 Poor; 1.81 – 2.60 Fair; 2.61 – 3.40 Satisfactory; 3.41 – 4.20 Very Satisfactory; 4.21 – 5.00 Outstanding

As presented in Table 2, the data in Naga SpEd Center showed that visual closure had the very satisfactory level of performance of the learners with the mean of 3.47, followed by five domains with satisfactory level namely, visual discrimination (mean=3.24), visual spatial relation (mean=3.18), visual spatial orientation (mean=3.10), figure ground (mean=2.94). The visual memory (mean=1.94) and visual spatial memory (mean=2.59) had the fair level. With the aggregate mean of 2.92, the level of visual learning performance of learners in Naga SpEd Center was at the satisfactory level.

Moreover, in Lipata SpEd School, the data showed that visual closure (mean=3.74) and visual spatial relation (mean=3.53) had the very satisfactory level followed by visual sequential memory (mean=3.11), visual spatial orientation (mean=3.08), visual discrimination (mean=2.90), and figure ground (mean=2.84) with the satisfactory level. Only the visual memory (mean=2.05) got the fair level. In general, with the aggregate mean of 3.04, the level of visual learning performance in Lipata SpEd Center was at the satisfactory level.

Additionally, in Pardo SpEd School, the data showed that only visual closure (mean=4.25) had the outstanding level followed by visual spatial relation (mean=3.58) with the very satisfactory level. Next was visual sequential memory (mean=3.33), figure ground (mean=3.17), visual spatial orientation (mean=3.11) with the satisfactory level. Last were the visual discrimination (mean=2.17) and visual memory (mean=2.00) with the fair level. With the aggregate mean of 3.09, the level of visual learning performance in Pardo SpEd School was at the satisfactory level.

In general, with the three results from the three SpEd schools combined, the data revealed that visual closure (mean=3.82) and visual spatial relation (mean=3.43) had the very satisfactory level, followed by visual spatial orientation (mean=3.10), visual sequential memory (mean=3.01), figure ground (mean=2.98), and visual discrimination (mean=2.77). Only visual memory (mean=2.00) had the fair level. With the aggregate mean of 3.02, the level of visual learning performance of the three SpEd schools were at the satisfactory level.

The results suggest that although students exhibited proficiency in certain visual processing abilities, there is a requirement for specific interventions to enhance visual memory and visual discrimination. This implies that customized visual learning techniques may be necessary to address the varied needs of learners with special needs.

Visual perception encompasses various constructs, including visual closure and visual spatial relations, which are integral to interpreting and understanding visual information (De Waal et al., 2018). Deficiencies in these areas can greatly hinder a child's capacity to process visual information properly, which in turn can influence their learning and everyday activities. Botha (2019) investigated how various visual-perceptual factors affect academic success and concluded that these abilities are vital for the advancement of cognitive skills and perceptual-motor coordination, directly linked to academic performance.

4.3 **Test of Significance of the Relationship**

This study hypothesized that there was no significant relationship between the learner's profile and their level of visual learning performance. Table 3 presents the results.

Table 3: Test Significant Relationship Between the Learners' Profile and their Level of Visual Learning Performance

Variables	Computed Chi-Square	df	Critical Value	Significance	Result
A. Visual Memory					
Age	9.594	6	12.592	Not Significant	Ho Accepted
Gender	5.106	3	7.815	Not Significant	Ho Accepted
Occupation	22.416	24	36.415	Not Significant	Ho Accepted
Monthly Income	10.708	6	12.592	Not Significant	Ho Accepted
B. Visual Discrimination					
Age	5.824	8	15.507	Not Significant	Ho Accepted
Gender	1.944	4	9.488	Not Significant	Ho Accepted
Occupation	33.449	32	46.194	Not Significant	Ho Accepted
Monthly Income	2.374	8	15.507	Not Significant	Ho Accepted
C. Visual Sequential Memory					
Age	15.836	8	15.507	Significant	Ho Rejected

Gender	4.552	4	9.488	Not Significant	Ho Accepted
Occupation	36.335	32	46.194	Not Significant	Ho Accepted
Monthly Income	8.848	8	15.507	Not Significant	Ho Accepted
D. Visual Spatial Relation					
Age	9.963	8	15.507	Not Significant	Ho Accepted
Gender	9.975	4	9.488	Significant	Ho Rejected
Occupation	43.502	32	46.194	Not Significant	Ho Accepted
Monthly Income	11.663	8	15.507	Not Significant	Ho Accepted
E. Visual Closure					
Age	3.362	6	12.592	Not Significant	Ho Accepted
Gender	9.189	3	7.815	Significant	Ho Rejected
Occupation	18.661	24	36.415	Not Significant	Ho Accepted
Monthly Income	10.931	6	12.592	Not Significant	Ho Accepted
E. Figure Ground					
Age	12.490	8	15.507	Not Significant	Ho Accepted
Gender	12.827	4	9.488	Significant	Ho Rejected
Occupation	51.984	32	46.194	Significant	Ho Rejected
Monthly Income	11.890	8	15.507	Not Significant	Ho Accepted

As reflected in Table 3, the data showed that no significant relationships were found between visual memory and any of the profile variables, all profile variables showed no significant relationship with visual discrimination, age showed a significant relationship with visual sequential memory with the χ^2= 15.836, leading to the rejection of the null hypothesis, gender had a significant relationship with visual spatial relation with the χ^2 = 9.975, resulting in the rejection of the null hypothesis, gender again had a significant relationship with visual closure with the χ^2 = 9.189, rejecting the null hypothesis, and lastly, gender (χ^2 = 12.827) and occupation (χ^2=51.984) both showed significant relationships.

The results indicate that learners' ability to recall visual information does not appear to be influenced by their age, gender, parents' occupation or monthly income, learners' capacity to identify differences and similarity in visual stimuli seems independent of their demographic background, old learners may have better sequential memory skills, suggesting that age plays a role in recalling a sequence of visual inputs, gender appears to influence how learners perceive spatial relationships between objects, possibly pointing to differences in how boys and girls process spatial information, there may be gender differences in the ability to identify a whole image when parts are missing, highlighting pattern in how visual closure skills develop differently among boys and girls, and lastly, gender and parents' occupation influence how learners focus on a visual stimulus while ignoring the background suggesting external factors may affect learners' ability to isolate important visual information.

The significant relationship between age and visual sequential memory reflects developmental theories like Piaget's cognitive development stages, where older children exhibit more advanced memory and sequencing abilities as their brains mature (Gathercole & Hitch, 2019). Moreover, the lack of significant relationships between monthly income and most visual learning dimensions supports research by (Judd et al., 2020), which emphasized that while socioeconomic status impacts broader academic achievement, its effect on specific cognitive abilities — like visual processing — may be less direct.

4.4 **Test of Significance of the Difference**

This study hypothesized that there was no significant deference on the seven dimensions of visual learning performance of learners when grouped by its profile. Table 4 presents the difference on the seven-dimensions of visual learning performance when grouped by its profile.

Table 4Test of the Significant Difference in the Seven Dimensions of Visual Learning Performance of Learners When Grouped by their Profile

Grouped By	F- value	P-Value	Significance	Results
Age	2.06	0.079	Not Significant	Ho Accepted
Gender	11.41	0.001	Significant	Ho Rejected
Occupation	0.88	0.542	Not Significant	Ho Accepted
Monthly Income	1.13	0.364	Not Significant	Ho Accepted

As presented in Table 4, with the computed p-value of 0.001, gender showed significant difference in the seven dimensions of visual learning performance when grouped by their profile. This led to the decision of rejecting the null hypothesis. On the other hand, age with the computed p-value of 0.079, occupation with the p-value of 0.542, and monthly income with the p-value of 0.364 revealed no significant difference in the seven dimensions of visual learning performance which led to the decision of accepting the null hypothesis.

Lemieux et al. (2019) pointed out variations between genders in cognitive tasks, especially regarding spatial skills. Boys generally show greater proficiency in visual spatial functions, while girls frequently excel in visual memory and sequential tasks, indicating differences in cognitive processing. Lundberg (2020) suggests that these gender distinctions may arise from a combination of biological influences and social factors, underscoring the importance of teaching methods that accommodate different cognitive strengths.

4.5 **Problems Encountered by Teachers' Relative to Visual Learning Performance**

Education is vital for everyone. Education is exceptionally indispensable, denied training no could have a decent existence. Teaching and learning are a significant component of training. The teacher utilizes various methodologies to make learning dynamic and enjoyable for the learners. With the progression of time, adjusted techniques, and systems are entered in the field of training, and teachers utilize a distinctive sort of help to make compelling learning.

Visual guides stimulate the enthusiasm of learners and help the educators to clarify the ideas effectively. Visual guides are those instructional guides that are utilized in the classroom to energize learners' learning process. Visual guides are those tangible items or pictures, which start or invigorate and bolster learning. Teachers may characterize these guides as pursues. Visual guides are which use the feeling of vision is called Visual guides. The difficulties of homeroom guidance increment when recommended a course to the class while course books (reading material) are established with such a large number of intuitive skill exercises. Most altogether, it has converted a typical wonder to incorporate reading material with various media helps as a new or valuable asset for study hall course learning exercises.

The researchers asked the teacher participants regarding the visual skills that were the most least learned by the learners. Most of them answered that *identifying figures*, *numbers*, *letters and some colors in the wheel charts*.

In the research conducted by Orihuela et al. (2019), multiple baseline designs were implemented to investigate the impact of an instructional package on the accuracy of mathematics fact-solving performance among three students with learning disabilities. The instructional package incorporated several components: (a) a revised teaching sequence that categorized multiplication facts into groups of zeros, ones, doubles, fives, nines, and the remaining facts; (b) the identification of the category for each multiplication fact; (c) mnemonic strategies related to solving the facts in each category; and (d) specific steps to follow when solving facts within each category. The results showed that the instructional package led to significant and immediate improvements. Following the instruction, one participant demonstrated an accuracy level that often reached 100 percent, which was sustained throughout the evaluation even when other strategies were introduced. Similar results were observed across all students, showing consistent replication of the instructional package
's effects.

Also, the researchers asked the participants which visual skills were difficult to teach. The participants' response that *counting numbers*, *sequencing patterns*, *pronunciation*, *reading and writing* are the topics those are difficult to teach. General case methods of choosing training exemplars and canvassing the skill performance of individuals without disabilities were the bases of a task-analytical flow chart of the behavioural skills.

Cortino (2019) explored how teachers make decisions about challenging students, their beliefs about the causes of these challenges, and their sense of efficacy. Educators were provided with a case study and asked to indicate (a) how they could address the needs of the student, (b) which approaches they viewed as

effective, and (c) what they thought were the reasons for the student's struggles. The findings revealed that teachers were more inclined to recommend non-teacher-centered strategies rather than those involving teachers, and they perceived that only a few of the proposed strategies were effective. Teachers who suggested a greater number of teacher-centered strategies reported higher levels of personal efficacy compared to those who pursued alternative solutions. Additionally, teachers commonly attributed the student's issues to factors related to the home environment, and their beliefs about the causes were linked to the types of strategies they proposed.

Bai et al. (2020) stated that high-quality early education is essential for securing long-term academic achievement. To be motivated to thrive in their own literacy development, young learners must comprehend the reasons behind reading and writing. By actively participating in the reading experience, children discover ways to utilize their expanding knowledge and skills in a flexible manner across all areas of development. When provided with opportunities to take part in purposeful and meaningful language and early print activities, all children can build a solid foundation for literacy and reading growth. Effective early literacy teaching is a key component in supporting the literacy progress of preschool-aged children. This method emphasizes developing settings that are appropriate for their developmental stage, taking into account the specific needs and abilities of young learners. The instructional spaces are crafted to be supportive, nurturing, and engaging, ensuring that children feel motivated to explore early reading and writing in a way that suits their individual pace.

Suitable environments and impactful early literacy teaching supply preschoolers with resources that ignite their curiosity and creativity. These resources are thoughtfully chosen to match the developmental phases of the children, providing chances for active exploration and engaging learning. By integrating a variety of experiences that address different learning preferences, teachers can establish a vibrant and engaging educational atmosphere that encourages active involvement and skill enhancement.

Social support plays a vital role in effective early literacy instruction. Educators, caregivers, and peers provide essential motivation, guidance, and positive reinforcement to young learners. Interactions among individuals in the educational environment cultivate a sense of community and collaboration, encouraging a love for literacy as children enjoy the joy of shared reading and writing experiences. This social support greatly improves the emotional and social aspects of literacy development, creating a solid foundation for children to flourish as they progress towards conventional literacy skills.

Effective instruction in early literacy extends beyond the conventional methods of reading and writing; it adopts a holistic perspective that takes into account the developmental needs, suitable resources, varied experiences, and vital social support for preschool children. This all-encompassing strategy seeks to create a positive and stimulating learning atmosphere, allowing early literacy forms to prosper and organically progress into conventional literacy skills.

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5. Findings

Based on the gathered data, the following are the findings.

The data on the respondents' profiles revealed that the majority were aged 7 to 8 years old, predominantly female. Most of their parents worked as vendors, with a combined family monthly income ranging from ₱7,890 to ₱15,780. Moreover, the level of visual learning performance of the learners revealed that only visual spatial relation was very satisfactory while visual discrimination, visual sequential memory, visual spatial orientation, and figure ground were satisfactory, and visual memory was only fair. Overall, the level of visual learning performance of the learners was satisfactory.

In addition, data showed that visual memory had the significant relationship with the age profile, visual spatial relation had the significant relationship with the gender profile, figure ground had the significant relationship with the gender and occupation. In contrary, visual memory and visual discrimination had no significant relationship to any of the profile variables. It was further found that only gender showed significant difference in the seven dimensions of visual learning performance of the learners when grouped by their profile.

The problems encountered by the teachers were grouped into two- least learned and most difficult to teach. The visual skills least learned by the learners include identifying figures, numbers, letters, and some

colors in the wheel charts. Furthermore, the visual skills that teachers found difficult to teach were the counting numbers, sequencing patterns, pronunciation, reading and writing.

6. Conclusion and Recommendation

In light of these findings, it is evident that while learners exhibit an overall satisfactory level of visual learning performance, targeted interventions focusing on visual memory and other identified weak areas are necessary. Furthermore, teachers may benefit from enhanced strategies and resources to better address the most challenging visual skills to teach.

On one hand, based on the findings and conclusion arrived in this study, teachers should undergo continuous professional development and training in innovative strategies and techniques for teaching visual learning skills, especially those identified as challenging. Furthermore, it is recommended that the classroom learning materials as output of this study be adopted to guide teachers and parents in supporting the learners in school and at home.

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8. References

1. Babayiğit, S., & Shapiro, L. (2020). Component skills that underpin listening comprehension and reading comprehension in learners with English as first and additional language. *Journal of Research in Reading*, *43*(1), 78–97. https://doi.org/10.1111/1467-9817.12291
2. Bai, Y., Ladd, H. F., Muschkin, C. G., & Dodge, K. A. (2020). Long-term effects of early childhood programs through eighth grade: Do the effects fade out or grow? *Children and Youth Services Review*, *112*, 104890.
3. Battista, C., Evans, T. M., Ngoon, T. J., Chen, T., Chen, L., Kochalka, J., & Menon, V. (2018). Mechanisms of interactive specialization and emergence of functional brain circuits supporting cognitive development in children. *Npj Science of Learning*, *3*(1), 1.
4. Blums, A., Belsky, J., Grimm, K., & Chen, Z. (2017). Building Links Between Early Socioeconomic Status, Cognitive Ability, and Math and Science Achievement. *Journal of Cognition and Development*, *18*(1), 16–40. https://doi.org/10.1080/15248372.2016.1228652
5. Botha, S. (2019). *The effect of a perceptual-motor intervention on the motor proficiency, letter recognition and-formation of selected Grade 1 children* [PhD Thesis, Stellenbosch: Stellenbosch University]. https://scholar.sun.ac.za/handle/10019.1/106954
6. Cortino, R. (2019). *General self-efficacy and teacher sense of efficacy of Generation Z teacher candidates: An explanatory sequential mixed methods inquiry* [PhD Thesis, Texas A&M University-Corpus Christi]. https://search.proquest.com/openview/6d16ea3292d9be159f279ccb09aa7318/1?pq-origsite=gscholar&cbl=18750&diss=y
7. De Waal, E., Pienaar, A. E., & Coetzee, D. (2018). Influence of Different Visual Perceptual Constructs on Academic Achievement Among Learners in the NW-CHILD Study. *Perceptual and Motor Skills*, *125*(5), 966–988. https://doi.org/10.1177/0031512518786806
8. Fulton, A. M., Paynter, J. M., & Trembath, D. (2017). Gender comparisons in children with ASD entering early intervention. *Research in Developmental Disabilities*, *68*, 27–34. https://doi.org/10.1016/j.ridd.2017.07.009
9. Galasso, E., Weber, A., & Fernald, L. C. (2019). Dynamics of child development: Analysis of a longitudinal cohort in a very low income country. *The World Bank Economic Review*, *33*(1), 140–159.
10. Gathercole, S. E., & Hitch, G. J. (2019). Developmental changes in short-term memory: A revised working memory perspective. In *Theories of memory* (pp. 189–209). Psychology Press. https://www.taylorfrancis.com/chapters/edit/10.4324/9781315782119-7/developmental-changes-short-term-memory-revised-working-memory-perspective-susan-gathercole-graham-hitch

11. Greenburg, J. E., & Winsler, A. (2020). Delayed kindergarten entry among low-income, ethnically diverse children: Prevalence, predictors, and selection patterns. *Early Childhood Research Quarterly*, *53*, 496–506. https://doi.org/10.1016/j.ecresq.2020.06.007
12. Groenewald, M. (2023). *Readiness to identify and support learners with visual perceptual difficulties: Perceptions of early childhood educators*. University of Johannesburg (South Africa). https://search.proquest.com/openview/9f3bdc0907919df7da941ea7983d85c3/1?pq-origsite=gscholar&cbl=2026366&diss=y
13. Judd, N., Sauce, B., Wiedenhoeft, J., Tromp, J., Chaarani, B., Schliep, A., Van Noort, B., Penttilä, J., Grimmer, Y., Insensee, C., Becker, A., Banaschewski, T., Bokde, A. L. W., Quinlan, E. B., Desrivières, S., Flor, H., Grigis, A., Gowland, P., Heinz, A., … Klingberg, T. (2020). Cognitive and brain development is independently influenced by socioeconomic status and polygenic scores for educational attainment. *Proceedings of the National Academy of Sciences*, *117*(22), 12411–12418. https://doi.org/10.1073/pnas.2001228117
14. Khamenekhi, N. (2024). *Study the differences in visual perception of children with ASD and Mental Retardation considering the features of sensory integration: Master's thesis* [Master's Thesis, б. и.]. https://elar.urfu.ru/handle/10995/138910
15. Koseki, M. H. (2017). Meeting the needs of all students: Amending the idea to support special education students from low-income households. *Fordham Urb. lJ*, *44*, 793.
16. Lemieux, C. L., Collin, C. A., & Watier, N. N. (2019). Gender differences in metacognitive judgments and performance on a goal-directed wayfinding task. *Journal of Cognitive Psychology*, *31*(4), 453–466. https://doi.org/10.1080/20445911.2019.1625905
17. Lin, S. C., & and Gold, R. S. (2018). Assistive technology needs, functional difficulties, and services utilization and coordination of children with developmental disabilities in the United States. *Assistive Technology*, *30*(2), 100–106. https://doi.org/10.1080/10400435.2016.1265023
18. Liukkonen, T. (2017). *The relationship between behavior problems, gender, special education status and school performance in the early grades of school*.
19. Lo, H.-C., & Wang, T.-H. (2024). A Study on the Design of Embedded Visual Image Teaching Aids to Assist Young Children's Cognitive and Fine Motor Development. *Journal of Intelligence*, *12*(10), 102.
20. Lundberg, S. (2020). Educational gender gaps. *Southern Economic Journal*, *87*(2), 416–439. https://doi.org/10.1002/soej.12460
21. Ma, X., Shen, J., Krenn, H. Y., Hu, S., & Yuan, J. (2016). A Meta-Analysis of the Relationship Between Learning Outcomes and Parental Involvement During Early Childhood Education and Early Elementary Education. *Educational Psychology Review*, *28*(4), 771–801. https://doi.org/10.1007/s10648-015-9351-1
22. Martínez, M. (2022). The Development of Multisensory Perception of Temporal Amodal Information. In S. Español, M. Martínez, & F. G. Rodríguez (Eds.), *Moving and Interacting in Infancy and Early Childhood* (pp. 161–206). Springer International Publishing. https://doi.org/10.1007/978-3-031-08923-7_6
23. Mizunoya, S., Mitra, S., & Yamasaki, I. (2018). Disability and school attendance in 15 low-and middle-income countries. *World Development*, *104*, 388–403.
24. Orihuela, S. M., Collins, B. C., Spriggs, A. D., & Kleinert, H. (2019). An Instructional Package for Teaching Geometric Shapes to Elementary Students with Moderate Intellectual Disability. *Journal of Behavioral Education*, *28*(2), 169–186. https://doi.org/10.1007/s10864-018-09314-5
25. Yan, L., Whitelock-Wainwright, A., Guan, Q., Wen, G., Gašević, D., & Chen, G. (2021). Students' experience of online learning during the COVID-19 pandemic: A province-wide survey study. *British Journal of Educational Technology*, *52*(5), 2038–2057. https://doi.org/10.1111/bjet.13102