Learning Difficulties of the Grade 1 Pupils Identified by Multi-Factored Assessment Tool (MFAT) and the Interventions Employed by the Teachers: Basis for ManagingIntervention Model

Glynis P. Aviles*
For affiliations and correspondence, see the last page.

Abstract

This study aimed to determine the learning difficulties of the Grade I pupils identified by the Multi-Factored Assessment Tool (MFAT) and the interventions employed by the teachers as basis for managing intervention model. The respondents of this study are the Grade I teachers in the Division of Quezon who were chosen through purposive sampling. A questionnaire was used to gather the data needed. A descriptive study design was employed. Specifically, this study attempted to answer the following questions: 1.) What are the learning difficulties of the Grade I pupils identified by the Multi-Factored Assessment Tool (MFAT) in Cognitive Domain (Literacy and Numeracy), Communication Domain, and Social Domain? 2.) What interventions did the Grade I teachers employ to address the learning difficulties of the Grade I pupils in Cognitive Domain (Literacy and Numeracy), Communication Domain, and Social Domain? 3.) What are the effective interventions employed in addressing the learner's difficulties in Cognitive Domain (Literacy and Numeracy), Communication Domain, and Social Domain? 4.) What intervention model could be proposed to address learner's difficulties in Cognitive Domain (Literacy and Numeracy), Communication Domain, and Social Domain? Based on the findings of the study, it has been found out that the learning difficulties of the Grade I pupils identified by the Multi-Factored Assessment Tool (MFAT) were: "difficulty in recognizing and reading pre-primer sight words, primer sight words, and basic Filipino words", "difficulty in identifying time by the hour", "difficulty in telling stories to peer/class and teacher coherently with uninterrupted flow of sounds, words, syllables, and phrases", and "difficulty in participating in group activities and role plays", and that the interventions employed by the teachers in addressing the learning difficulties of the Grade I pupils were "Marungko Reading Intervention Strategy", "It's Hour Time", "Who Am I?", and "It's Play Time Intervention Strategy" which were generally very effective. Furthermore, it has been found that all of the interventions employed by the Grade I teachers were very effective in addressing the learning difficulties of the Grade I pupils in cognitive domain (literacy and numeracy), communication domain, and social domain.

Keywords: Multi-Factored Assessment Tool, Interventions, Learning Difficulties

Introduction

DepEd employs Multi-Factored Assessment Tool (MFAT) in order to determine the difficulties of Grade I pupils in education.

In the past years, learners' difficulties are being assessed and addressed early because of the face-to-face/actual interaction among teachers and learners. During this pandemic where most schools use modular distance learning as teaching modality, more and more pupils exhibited learning difficulties. In connection with this, DepEd uses Multi-Factored Assessment Tool (MFAT) in identifying the learning difficulties of the Grade I pupils. MFAT is a classroom activity-based assessment covering the five domains of learning: (a) Cognitive, (b) Communication, (c) Socio-Emotional, (d) Psycho-Motor, and (e) Daily Living Skills. The MFAT was developed to assist teachers for instructional planning and educational placement of learners. This MFAT was mandated by Department of Education (DepEd) through the Bureau of Learning

Delivery – Student Inclusion Division (BLD-SID) by virtue of DepEd Order No. 29, s. 2018, which is all about the Policy on the Utilization of Multi-Factored Assessment Tool (MFAT) to assess Grade 1 learners enrolled in regular schools, who may exhibit developmental advancement or delays or have manifestations of learning disability. The policy aims to: a) identify Learners with Special Educational Needs (LSENs), who may need education services and/or medical/allied services; and b) assist teachers in planning and designing instructions appropriate for LSENs.

Thus, early and accurate identification of learning difficulties in schools can help struggling students achieve success. Learning and attention issues that remain unidentified and unaddressed can lead to lifelong difficulties in several areas of learning (Vitti, R., 2018). Other researcher recommended providing interventions based on students' cognitive placement identified by different kinds of assessment (Wanzek et al., 2013).

Glynis P. Aviles

Based from the research of Buenavista (2019), it was found out that MFAT greatly contributed to designing appropriate and relevant interventions for addressing learning difficulties of the pupils. Buenavista (2019) proposed instructional guide for the teachers based from the results of her study about the correlation between student's MFAT result and academic performance.

The MFAT assessment has been adapted in the Division of Quezon since 2019. In Pitogo District, the MFAT was administered last July, 2019. Results of the assessment revealed that most of the Grade I pupils of Pitogo District have difficulties in reading. Out of 446 total of Grade I enrollment, 141 (32%) non-readers were identified during the pre-test. For this reason, the Public Schools District Supervisor of Pitogo District has come up into a Reading Intervention Program called, "Sa Aklat Mumulat, Sa Aklat Sisikat (Marungko Approach)" (Olvida, 2019). During the post-test, only 7 Grade pupils were identified with learning difficulties. Results revealed that the Reading Intervention Program helped the Grade I pupils in learning to read, including those pupils with reading difficulties. Sa Aklat Mumulat, Sa Aklat Sisikat (Marungko Approach) is now being used by the other congressional districts of the Division of Quezon because of its effectiveness in addressing the reading difficulties of the Grade I pupils.

Since the research of Olvida (2019) only focused on Literacy while the MFAT has other components, namely: Numeracy, Communication Domain, and Social Domain, the researcher became interested and decided to study the learning difficulties of the Grade I pupils identified by the Multi-Factored Assessment Tool (MFAT) cognitive domain (literacy and numeracy), communication domain, and social domain. The researcher further decided to study the interventions employed by the teachers as basis for managing intervention model based from the result of the study.

Research Objective

This study aimed to determine the learning difficulties of the Grade I pupils identified by the Multi-Factored Assessment Tool (MFAT) in the different domains and the interventions employed by the teachers as a basis for managing the intervention model.

Literature Review

Cognitive Domain (Literacy and Numeracy)

According to Peng et al., (2018) in their study on the relation between reading and working memory, children use cognitive abilities to learn academic skills, and to perform most academic tasks involving the use of their cognitive abilities. Thus, academic tasks and activities involving cognitive skills that are practiced during schooling may offer long-term improvement and development for cognitive abilities, too. Meanwhile, Charitaki et al., (2021) emphasized that numeracy in early grade is related to KS1 learners' acquisition of skills such as understanding and operating with numbers. Consequently, numeracy in early grade has valuable impact on first Graders' attainments in mathematics.

Several authors (Aunio and Räsänen, 2015; Merkley and Ansari, 2016) agreed that numeracy in early grades includes several skills which are vital for later mathematics learning. More specifically, understanding and visualizing mentally the number line and differences in magnitudes (Merkley and Ansari, 2016), recognition, identification and naming of number symbols (Pinto et al., 2016), counting skills and numerical relations (Purpura and Reid, 2016), cardinal knowledge (Chu, VanMarle, and Geary, 2015), basic skills of addition and subtraction, and early word problem solving skills have all been found to be the basis of later mathematics performance. According to Merkley and Ansari (2016), low performance in early numeracy is also a potential indicator for later development of mathematical learning difficulties.

This low performance in early numeracy can, for instance, be observed during learner's regular classroom activities as weak counting skills (Purpura and Reid, 2016), poor numerical relational skills (e.g. compare, seriate) (Purpura and Reid, 2016), and poor skills in basic arithmetic (Chu et al., 2015). According to Widlund et al., (2020), mathematical skills are vital, not only for the performance of school, but also for learner's future attainment in education. Poor early numeracy skills are also an indicator of later learning difficulties in mathematics. Authors such as Dennis et al. (2016) and Mononen, et. al (2014), revealed that early interventions based on evidence-based research can steady the challenges of students at risk for developing learning difficulties in mathematics. Moreover, important points related to the development of early numeracy, such as skills in language, executive functions, and prior knowledge, may exhibit confounding effects on the implemented intervention (Morgan et al., 2019).

Meanwhile, according to Boyer (2011), it is very

Glynis P. Aviles

helpful and vital that the child has readiness to learn. For Boyer (2011), readiness to learn depends on the learner's ability at the moment that he is being asked to perform certain task. Thus, it is also depending on the learner's ability to respond to a specific teaching strategy. Expressive and receptive language domain involves verbal language (listening, speaking and vocabulary) and emerging literacy (story sense, assigning of sounds to letter combinations), enthusiasm, curiosity and persistence on tasks. Cognitive domain refers to the learners' ability to grasp, process and connect information delivered received by the brain. Numeracy involves not just the learner's basic number skills, but also his ability to use and apply these basic numeracy skills in context. It includes (but not limited to) identifying and conceptualizing which number is more or less, counting numbers, sequencing numbers, identifying what is missing number, and adding or subtracting numbers. Construction and visual motor integration refer to the learner's ability to coordinate his motor movement with visual objects. The child with motor difficulty has problems coordinating the visual stimulus with an appropriate motor response that is required in fine motor skills. Reading readiness is described as the detachable moment for reading. This refers to the point when the learners are ready to learn reading. The skills in reading readiness help the learners prepare for their reading tasks in particular skills. The learners' need to learn reading will depend on their previous experiences with reading exposure (Boyer, 2011).

According to Hernandez (2014), some primary grade learners whose level of intelligence is normal, still experience difficulty in reading. Moreover, difficulties of primary-grade learners in learning to read predict continuing difficulties in reading throughout schooling (Hernandez, 2014).

Meanwhile, according to Mather & Wendling (2013), schools and teachers play vital role in identifying and assessing learners with difficulties in reading. They are also responsible for teaching them to read. High-quality instruction and effective interventions can prevent and remediate reading problems and reading difficulties. It can also reduce the possibility of having more-severe reading difficulties. The challenge here is to ensure and secure that teachers understand and know how to identify, assess, and remedy reading difficulties at an early stage. Reading is a key skill. This is the foundation of every learner and is fundamental to learning in all academic areas. When the learner's reading skill lags behind that of their peers and classmates, they are at a high disadvantage

not only in reading and comprehending but also in other skills such as writing, learning mathematics, and other academic areas.

Furthermore, Brown, C., Feger, B., & Mowry, B. (2015) found out that many Kindergarten and grade 1 learners lack the awareness that words are streams of sounds that can be disentangled and that sound can be assembled to produced words. Learners lack phonemic awareness, a metalinguistic insight that seems to be essential in learning to read, at least in an alphabet language such as English. Fortunately, phonemic awareness can be developed through instruction, with clear benefits to subsequent acquisition of reading skills. This is an active area of research, with recent analysis of how teaching students to attend to their articulations of sounds. There is also recent assessment of how finger-point reading in kindergarten (i.e., pointing to words as the teacher and group reads them) impacts phonetic awareness and other reading processes.

In connection with this, there are researchers who have demonstrated that patterns of brain activation of learners can change as a result of effective and sustained reading intervention. An increasing number of studies show that other researchers have put students with difficulty reading in interventions that are designed to develop and improve their word-reading skills – namely, reading interventions that focus on building their decoding skills. These interventions result to students reading words more accurately, correctly and fluently (Barquero, Davis, & Cutting, 2014).

Meanwhile, Vitti, R. (2018) emphasized that when the learners with reading difficulties receive the proper interventions and informal supports, many of these laerners can succeed in general education.

Social Domain/ Development differentiated from Emotional Domain/ Development

Emotional development is closely related to social development. Emotional development refers to the child's ability to express his feelings about himself, others, and his reactions to the situations he will face in the environment around her and the world as a whole as well as showing control of his bodily reactions and functions, his ability to focus, and pay attention (Mackrain, Golani & Kairone, 2012). Witherington et. al. as cited by Mackrain, et. al. (2012), defined emotions as "the processes by which an individual attempts to establish, change, or maintain his or her regulation to the environment on matters of

Glynis P. Aviles

significance to the person".

As defined by Aiger, Alexis (2017), development of social skills refers to the child's ability to create and maintain relationships. Children cooperate and socialize with others during childhood and they begin to develop conflict resolution and problem-solving skills. He enjoys attention of the crowd and may show off, while still exhibiting empathy for others. At early childhood age, children enjoy group games and they begin to understand the concept of fair play. He can tell the difference between reality and fantasy, but will enjoy imaginative play with friends. On the other hand, the ability of the child to control his emotions, socialize with others and help himself is an indicator of his emotional and social development.

Meanwhile, according to Anfara, C. M. (2014), development of social skills is often referred to as the process of creating a sense of individuality and establishing individual role and life's purpose. Emotional development and social development are closely inter-related as children search for a sense of personal identity. On the other hand, the way a child thinks and feels about himself and others, his internal thoughts, is a key to the development of his emotional skills. Schools are important venues for the development of children's social and emotional skills.

Cognitive Domain

In their paper "Early Childhood Development and Cognitive Development in Developing Countries: A Rigorous Literature Review", Rao, N., et. al (2014) defined cognitive development as advances in mental processes which are associated with perception, memory, reasoning, problem-solving, language-learning and other aspects of brain development that occur as we age. Historically, the development of children's cognitive skills was usually assessed through intelligence quotient (IQ) tests. It should be noted that there is a scarcity/ insufficiency of appropriate assessment tools with which to assess cognitive development in very young children and there are currently no globally accepted tests of early cognitive development. While there are few globally accepted reliable and valid tests of early cognitive development which have been institutionalized in developed countries, there is concern about their validity in other countries due to differences in cultures and contexts, not only in assessment procedures, but also in the areas to be measured. For present purposes, development of cognitive skills has been operationalized to encompass performance in tests of developmental functioning, intelligence,

language, literacy, numerical ability, memory, problem-solving, learning ability, academic attainment and cognitive control. Typical cognitive development can be defined as expected gains in language, thinking and understanding. Atypical development can be characterized as a delay in expected gains.

In addition, Rao, N., et. al (2014) concluded that brain development is rapid in the first years of life, and factors in the environment can alter brain architecture and biological function. As early as gestation and through the first years of life, the environment (including nutrition, drug ingestion, infection, pollutants and levels of stress) influences how genes are expressed, and how the brain's architecture and function are set. The brain is relatively plastic in the early years and this means that young children are more open to learning and enriching experiences that shape typical cognitive development. However, developing brains are also more vulnerable to impoverished and sub-optimal learning environments. Critical periods for cognitive development are associated with the process of brain maturity. Brain development depends on sensory inputs (such as vision, hearing, touch and smell) and adult-child interactions. The brain's basic circuits are wired first, followed by increasingly more complex circuits. For example, sensing pathways for hearing and vision develop before language, and those for language develop before cognition. The potential for typical cognitive development in language, thinking and vision can be lost when critical periods in brain development are neglected. These facts highlight the importance of early relationships and stimulation and the types of ECD intervention likely to be effective. Further, scientific studies confirm that prolonged adversity in early childhood can result in toxic stress and lifelong impairments in learning, health and behavior. The findings from these studies suggest that there should be a stronger emphasis on addressing the roots of disparities in early childhood than on trying to change adolescent and adult behaviors associated with poor learning and health outcomes. While the aim of intervention is to reduce risk factors, protective and supportive factors are equally necessary for healthy brain development.

Communication Domain

According to Thompson, J. (2020), in her article entitled, "Instructing and Assessing 21st Century Skills: A Focus on Complex Communication", communication has been regarded as a perilous success skill in the 21st Century. In a survey conducted by Pew Research Center in 2014, 90% of

Glynis P. Aviles

adult participants of this study stated that skills in communication are the greatest skill and most extremely needed for getting ahead in life.

Additionally in an article written by Mountains, T. (2021) entitled "Being a 21st Century Educator", she emphasized that the Partnership for 21st Century Learning states that learners must acquire mastery in key subject areas including English, reading, and language arts, as well as skills in innovation and learning— which include "communication"—and information, media, and skills in technology, such as literacy in "information, communications, and technology".

Moreover, according to Thompson, J. (2020), there are several and different definitions of communication. However, defining communication as a success skill needs synthesizing the different definitions, taking into consideration the intertwined characteristics of the subdomains of reading, writing, speaking, and listening, the technology impact, and the nonverbal and verbal proficiencies in different contexts and cultures.

Furthermore, according to Wood, et. al. (2017), development of communication skills is multifaceted. In other words, it starts with the development of oral language; then learning to read texts, comprehending texts, and producing written language; and lastly, reading to learn. During early adolescence, development of communication skills is interrelated with cognitive experiences, physical and behavioral opportunities, emotional/ social experiences, development physical skills, and culture. Included into this is phase is the development of language and speech and the complex phases of reading development.

Development of communication skills continues as the child goes through adolescence and into adulthood. During secondary school years, it is expected that the students use a range of skills in language, such as making queries, giving reflection on their work and that of their peers, and using complex grammar and having wide-vocabulary. (Wood & Hartshorne, 2017).

Local Literature

In the Philippines, there are various assessment tools being used to identify children with learning difficulties and learning needs. Through DepEd Order No. 5, s. 2013, the Policy Guidelines on the Implementation of the School Readiness Year-End Assessment (SREYA) for Kindergarten was issued by the DepEd. This is pursuant to Republic Act (RA) No.

10157 also known as the "Kindergarten Education Act". SREYA is an assessment tool intended to assess the level of performance of all kindergarten pupils in the elementary school system across different domains.

At the start of School Year (SY) 2011-2012, the School Readiness Year-End Assessment (SReYA), an assessment designed for assessing Kindergarten Learners across different domains, was restructured and contextualized into 12 most frequently used languages in the Philippines (Mother Tongue).

The following are the aims of SReYA: a.) assess learners' readiness across the following different domains: Physical Health and Well-being, Motor Development, Mathematics, Language and Literacy, Sensory Perceptual, Physical and Social Environment, Character and Values Development, and Socio-emotional Development; b.) provide appropriate interventions based from the results of the assessment; and c.) communicate and discuss with parents the results of their child's assessment and discuss to them the alternative strategies and home-based activities to supplement their learning.

SREYA result will be very helpful to Grade I teachers because they can use it in learner profiling which play a vital role in designing and crafting learning materials, intervention materials, and supplemental materials. On the other hand, Kindergarten teachers will have basis for improvement of instruction. SREYA result can also serve as a guide for trainings and seminars to be provided for the teachers. Through SREYA, parents will be able to make proper follow-up activities at home. On the other hand, SREYA does not reflect the performance of teachers. It is intended for assessing learner's difficulties, strengths and weaknesses, and in providing proper intervention, teaching strategies, and learning materials.

Meanwhile, in 2018, Department of Education (DepEd) through the Bureau of Learning Delivery – Student Inclusion Division ((BLD-SID) aimed to make every school inclusive to all, where every learner is valued, cared, and respected and all of them are accepted. They envisioned schools to be safe, inclusive, and healthy even for Learners with Special Educational Needs (LSENs), where they will feel sense of belongingness and full of opportunities to reach their full potential. In connection with this, DepEd issued the Policy on the Utilization of Multi-Factored Assessment Tool (MFAT) through DepEd Order No. 29, s. 2018. MFAT aims to assess Grade 1 learners enrolled in regular schools, who may exhibit

Glynis P. Aviles

developmental advancement or delays or have manifestations of learning disability. Specifically, MFAT aims to: a) identify Learners with Special Educational Needs (LSENs), who may need education services and/or medical/allied services; and b) assist teachers in planning and designing instructions appropriate for LSENs. MFAT is a standard assessment which covers the five domains of learning: (a) Cognitive, (b) Communication, (c) Socio-Emotional, (d) Psycho-Motor, and (e) Daily Living Skills.

To orient and train the participants on how to identify the developmentally- delayed Grade 1 learners, a Regional Mass Training of Teachers on Multi-Factored Assessment Tools (MFAT) was held on April 9-13, 2018 at the Balanghai Hotel and Convention Center in the city of Butuan (Caraga, 2018).

Methodology

Research Design

A descriptive study design was used to determine the learning difficulties of the Grade I pupils identified by the Multi-Factored Assessment Tool (MFAT) and the interventions employed by the teachers: basis for managing curriculum model. Descriptive research deals with what is designed for the investigator to gather information about the present conditions, status, or trend, and is dealing with what are prevailing Calderon and Gonzales (2011:48).

This research is a quantitative research. Quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. Quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon.

Population and Sample

Table 1. *Frequency and Percentage Distribution of the No. of School Districts and Number of Public Elementary Schools per Congressional District in the Division of Quezon, as of SY 2019-2020*

Congressional District	Number of Schools Frequency (f)	Number of Teachers Frequency (f)	Number of Teachers Percentage (p)	Sample Size Frequency (f)
First	15	195	8%	15
Second	8	116	7%	8
Third	17	213	8%	17
Fourth	16	247	6%	16
TOTAL	56	771		56

Source: Planning and Research Section-SGOD- DepEd Division of Quezon

Table 1 shows that the DepEd Division of Quezon has a total number of 56 school Districts, 15 (27%) are in the First Congressional District; 8 (14%) are in the Second Congressional District; 17 (30%) are in the Third Congressional District; and 16 (29%) are in the Fourth Congressional District.

Table 1 also shows that there are 771 public elementary schools in the Division of Quezon, 195 (25%) are in the First Congressional District; 116 (15%) are in the Second Congressional District; 213 (28%) are in the Third Congressional District; and 247 (32%) are in the Fourth Congressional District.

The researcher used purposive sampling in this study. Purposive sampling is also referred to as "non-probability" sampling. It is called this due to the researcher applying their own criteria when defining their sample, so in layman terms the researcher selects their own individuals as part of their study.

The researcher chose one school respondent per school district which will be used as respondents in this study. The school which has the greatest number of Grade 1 teachers were chosen and only those Grade I teachers who administered MFAT were chosen as respondents of this study. 15 (8%) of the school respondents was generated from the First Congressional District; 8 (7%) of the school respondents was generated from the Second Congressional District; 17 (8%) of the school respondents was generated from the Third Congressional District; and 16 (6%) of the school respondents was generated from the Fourth Congressional District with a total of 56 school respondents.

This is the locale of this study because the data gathered from these respondents is already enough to support the validity of the result of this study. In addition, there should be enough respondents from each congressional district to make the result more

valid and reliable.

Glynis P. Aviles

Research Instrumentation

To determine the learning difficulties of the Grade I pupils identified by the Multi-Factored Assessment Tool (MFAT) and the interventions employed by the teachers as basis for managing intervention model, a questionnaire was prepared by the researcher which was used for data gathering. The questionnaire is divided into three parts. The first part refers to the questions about the learning difficulties of the Grade I pupils identified by the Multi-Factored Assessment Tool (MFAT) in the following domains: 1) Cognitive Domain (Literacy and Numeracy), 2) Communication Domain, and 3) Social Domain. The second part refers to the questions pertaining to the different intervention programs employed by the Grade I teachers to address the learning difficulties of the Grade I pupils in the following domains: 1) Cognitive Domain (Literacy and Numeracy), 2) Communication Domain, and 3) Social Domain. The third part refers to the questions pertaining to the effectiveness of the intervention programs employed in addressing the learner's difficulties in the following domains: 1) Cognitive Domain (Literacy and Numeracy), 2) Communication Domain, and 3) Social Domain.

For the validation of the questionnaire, the researcher asked the help of three research advisers. The researcher asked the help of the first research adviser regarding the content of her questionnaire. The next research adviser was asked by the researcher to help her validate the grammar of her questionnaire. The researcher asked the help of the third research adviser in terms of the validation of her questionnaire with regards to statistics. When the questionnaires were already validated, the consent of the Schools Division Superintendent of Quezon regarding the distribution of questionnaire in the Division of Quezon was sought.

Data Gathering Procedure

Before the administration of the instruments, the researcher sought the approval of her research adviser. The following steps were followed by the researcher in the administration of the research tool. First, the researcher sought the approval of her adviser. Next, she sought permission of the Division of Quezon to allow her to administer the survey questionnaires in the different schools in the Division of Quezon. After that, the researcher finally distributed the set of questionnaires to the Grade I teachers of the Division of Quezon. Proper instructions were given to the respondents in order to accomplish the questionnaires

easily and effectively. The researcher undertook an informal interview in order to help the respondents in answering the questions. The researcher then tabulated and interpreted the results of the questionnaire accurately and properly.

Results and Discussion

This section includes the presentation, analysis, and interpretation of data.

Learning Difficulties of the Grade I Pupils

Table 1.1.1. *Frequency Distribution of the Respondents on the Learning Difficulties of the Grade I Pupils in terms of Cognitive Domain along with Literacy Development*

Learning Difficulties on the Literacy Development	Frequency	Percentage	Rank
Difficulty in recognizing and reading pre-primer sight words, primer sight words, and basic Filipino words	283	43.01	1
Difficulty in recognizing and identifying letter sounds	156	23.71	2
Difficulty in recognizing and naming the letters of the alphabet	115	17.48	3
Difficulty in matching big letters to small letters of the alphabet	54	8.21	4
Difficulty in identifying body parts and senses	50	7.60	5
Total	658	100.00	

Table 1.1.1 presents the frequency distribution of the respondents on the learning difficulties of the Grade I pupils in terms of cognitive domain along with literacy development where "difficulty in recognizing and reading pre-primer sight words, primer sight words, and basic Filipino words" was marked by 283 (43.01 %) of the respondents and ranked no. 1 while "difficulty in identifying body parts and senses" was marked by 50 (7.60 %) of the respondents and ranked no. 5.

With this findings, it is revealed that majority of the Grade I learners experience difficulty in recognizing and reading pre-primer sight words, primer sight words, and basic Filipino words while a lesser number of learners experience difficulty in identifying body parts and senses in terms of cognitive domain along with literacy development.

According to Scanlon, et.al, (2013), children in the early primary grades who are identified as being at risk

of experiencing literacy learning difficulties, and especially those who do not recognize basic words easily, are particularly likely to demonstrate difficulties with word learning. Many children experience difficulty due to limitations in their ability to make effective use of the alphabetic code.

Meanwhile, early childhood science education is important for all children regardless of gender, ethnicity, ability/disability, or socioeconomic background. Furthermore, the study of Aydeniz, Cijak, Graham, and Retinger (2012) responded to a need to provide educational opportunities for all young children. They stated that if learning needs are not met in younger years, then it is likely children will have less success later.

Table 1.1.2. *Frequency Distribution of the Respondents on the Learning Difficulties of the Grade I Pupils in terms of Cognitive Domain along with Numeracy Development*

Learning Difficulties on the Numeracy Development	Frequency	Percentage	Rank
Difficulty in identifying time by the hour	245	38.34	1
Difficulty in identifying Philippine Peso Bills and Coins	133	20.81	2
Difficulty in subtracting objects to get a difference of 10	116	18.15	3
Difficulty in identifying and counting numbers from 1-20 and associating them with objects	77	12.05	4
Difficulty in adding objects to get a sum of 10	68	10.64	5
Total	639	100.00	

Table 1.1.2 shows the frequency distribution of the respondents on the learning difficulties of the Grade I pupils in terms of cognitive domain along with numeracy development where "difficulty in identifying time by the hour" was marked by 245 (38.34 %) of the respondents and ranked no. 1 while "difficulty in adding objects to get a sum of 10" was marked by 68 (10.64 %) of the respondents and ranked no. 5.

From the results given, it could be gleamed that most Grade I learners have difficulty in identifying time by the hour while some Grade I learners have difficulty in adding objects to get a sum of 10 in terms of cognitive domain along with numeracy development.

According to Frye et al., (2013), the recent Institute of Educational Studies early numeracy practice guide recommends early childhood teachers dedicate time that targets mathematics each day and look for opportunities to integrate mathematics throughout the school day and across the curriculum. Research of Clements & Sarama (2014) has revealed many developmentally appropriate mathematics goals that

can and should be targeted for instruction in preschool.

Furthermore, a counting-on strategy for determining sums (e.g., for 5 + 3, counting "5; 6, 7, *8*") is a key primary-grade goal. Although some research seems to indicate that children with *only* a basic informal understanding of addition can understand such a strategy and readily benefit from seeing it modeled (Tzur & Lambert, 2013), a careful analysis and other research indicates that the success of such instruction depends on a child's developmental level on a learning trajectory (see Baroody & Purpura, 2017).

Table 1.2. *Frequency Distribution of the Respondents on the Learning Difficulties of the Grade I Pupils in terms of Communication Domain*

Learning Difficulties in terms of Communication Domain	Frequency	Percentage	Rank
Difficulty in telling stories to peer/class and teacher coherently with uninterrupted flow of sounds, words, syllables, and phrases	197	30.35	1
Difficulty in identifying oneself and responding to questions (wh – questions) when being asked	147	22.65	2
Difficulty in reciting nursery rhymes and imitating words/phrases and/or local TV/radio commercial	128	19.72	3
Difficulty in recognizing two-three word instructions and responding to two-word combinations (e.g. sit down)	112	17.26	4
Difficulty in identifying and describing simple and familiar objects when presented	65	10.02	5
Total	649	100.00	

Table 1.2 shows the frequency distribution of the respondents on the learning difficulties of the Grade I pupils in terms of communication domain where "difficulty in telling stories to peer/class and teacher coherently with uninterrupted flow of sounds, words, syllables, and phrases" was marked by 197 (38.34 %) of the respondents and ranked no. 1 while "difficulty in identifying and describing simple and familiar objects when presented" was marked by 65 (10.02 %) of the respondents and ranked no. 5.

As manifested from the result, it could be interpreted that most of the Grade I learners have difficulty in telling stories to peer/class and teacher coherently with uninterrupted flow of sounds, words, syllables, and phrases while some Grade I learners have difficulty in identifying and describing simple and familiar objects when presented in terms of communication domain.

Adults can support children's use of language to guide thinking by using complex, authentic, and engaging language, themselves, in their interactions or inviting children to describe, aloud, their problem-solving processes. The results of this study corroborates with

Glynis P. Aviles

the research conducted by Trawick-Smith, Swaminathan, & Liu (2016), has confirmed that verbal interchanges between adults and children help children to clarify or test their own thinking and to elevate their problem-solving strategies to a more conscious, intentional. The implication of their study is that early care and education providers should engage in highly verbal interactions with children—asking questions, commenting their activities, and encouraging peers to communicate with one another. Such language-rich approaches have been recommended to professionals and parents for decades.

Table 1.3. *Frequency Distribution of the Respondents on the Learning Difficulties of the Grade I Pupils in terms of Social Domain*

Learning Difficulties in terms of Social Domain	Frequency	Percentage	Rank
Difficulty in participating in group activities and role plays	195	36.65	1
Difficulty in articulating in expressing his/her thoughts	182	34.21	2
Difficulty in displaying interest in activities related with people, friends, and play	82	15.41	3
Difficulty in participating in a conversation with friends	58	10.90	4
Difficulty in making friends easily	15	2.82	5
Total	532	100.00	

Table 1.3 shows the frequency distribution of the respondents on the learning difficulties of the Grade I pupils in terms of social domain where "difficulty in participating in group activities and role plays" was marked by 195 (36. 65 %) of the respondents and ranked no. 1 while "difficulty in making friends easily" was marked by 15 (2.82 %) of the respondents and ranked no. 5.

From the results given, it can be interpreted that majority of the Grade I pupils experience difficulty in participating in group activities and role plays while some Grade I pupils experience difficulty in making friends easily in terms of social domain.

This result follows the findings of the study of Begen (2015). According to him, two interrelated concepts in child development have guided the care and education of preschool aged children for decades. The first is that being accepted by peers in a classroom or family child care home is fundamental to later social development. Being liked by other children has long been believed to be a predictor of overall happiness and mental health in later life. Children who are actively rejected or ignored by peers are more likely to become psychologically troubled. A second concept that has been highly influential in professional practice is that specific social behaviors—particularly a highly social style and an ability to engage in certain types of play—particularly make believe—will lead to peer acceptance.

Interventions Employed by the Teachers in Addressing the Learning Difficulties of the Grade I Pupils

Table 2.1.1. *Frequency Distribution of the Respondents on the Interventions Employed by the Teachers in Addressing the Learning Difficulties of the Grade I Pupils in terms of Cognitive Domain along with Literacy Development*

Indicators	Yes		No		Total	
	F	%	F	%	F	%
Marungko Reading Intervention Program	306	97.14	9	2.86	315	100.00
Alphabet Letter and Sound Recognition	304	96.51	11	3.49	315	100.00
Reading is Easier with Pre-Primer and Primer Sight Words	265	84.13	50	15.87	315	100.00
Body Parts and Senses	255	80.95	60	19.05	315	100.00
Busy Bee with ABC	234	74.29	81	25.71	315	100.00
Can You Sense It?	222	70.48	93	29.52	315	100.00

Table 2.1.1 reveals the frequency distribution of the respondents on the interventions employed by the teachers in addressing the learning difficulties of the Grade I pupils in terms of cognitive domain along with literacy development where 306 (97.14 %) of the respondents employed "Marungko Reading Intervention Program" in addressing the learning difficulties of the Grade I pupils in terms of cognitive domain along with literacy development. Meanwhile, 222 (70.48 %) of the respondents employed "Can You Sense It?" in addressing the learning difficulties of the Grade I pupils in terms of cognitive domain along with literacy development.

From the above results, it could be gleamed that majority of the Grade I teachers employed Marungko Reading Intervention Program in addressing the learning difficulties of the Grade I pupils in terms of cognitive domain along with literacy development while only some of the Grade I teachers employed Can You Sense It? Intervention Program.

This result found support from the research evidence on reading difficulties that reveals that the most common area of difficulty among children who are identified as struggling readers at the early stages of learning to read is phonological processing. There is also evidence that classroom instruction can influence vocabulary knowledge. Scanlon, D.M., Anderson K.L, Sweeney, J.M. (2013) reported that, at least in preschool settings, the amount and quality of the language used by the children's teachers, the kinds of

Glynis P. Aviles

verbal interactions that occur in the classroom, and, more specifically, the types of interchanges that occur during read-alouds influence the development of oral language and vocabulary. In other words, early childhood teachers, in their instructional interactions with children, have the potential to positively impact language skills that are *critical* to future success in the comprehension of text.

Table 2.1.2. *Frequency Distribution of the Respondents on the Interventions Employed by the Teachers in Addressing the Learning Difficulties of the Grade I Pupils in terms of Cognitive Domain along with Numeracy Development*

Indicators	Yes		No		Total	
	F	%	F	%	F	%
It is Hour Time	278	95.87	37	11.75	315	100.00
Math is Made Easy with 1-20	302	92.06	13	4.13	315	100.00
Count Me In	283	89.84	32	10.16	315	100.00
Adding and Subtracting to Get a Sum and Difference of 10	290	88.25	25	7.94	315	100.00
Let Us Keep Counting to Get a Sum and Difference of 10	277	87.94	38	12.06	315	100.00
Money for You, Money for Me	273	86.67	42	13.33	315	100.00
It is all About the Money	255	80.95	60	19.05	315	100.00
Time is Ticking, Keep Working	219	69.52	96	30.48	315	100.00

Table 2.1.2 presents the frequency distribution of the respondents on the interventions employed by the teachers in addressing the learning difficulties of the Grade I pupils in terms of cognitive domain along with numeracy development where 302 (95.87 %) of the respondents employed "It's Hour Time" in addressing the learning difficulties of the Grade I pupils in terms of cognitive domain along with numeracy development. Meanwhile, 219 (69.52%) of the respondents employed "Time is Ticking, Keep Working" in addressing the learning difficulties of the Grade I pupils in terms of cognitive domain along with numeracy development.

With this findings, it is revealed that majority of the Grade I Teachers employ It's Hour Time Intervention Strategy, while some Grade I Teachers employ Time is Ticking, Keep Working in addressing the learning difficulties of the Grade I pupils in terms of cognitive domain along with numeracy development.

This result supports implementing early childhood mathematics instruction in an effective manner— as Bassok et al. (2016) thoughtfully noted:

"need not be at odds with "play" and other types of pedagogical approaches considered developmentally appropriate in early childhood (Bassok, Claessens, & Engel, 2014; Clements & Sarama, 2014; Pondiscio, 2015)… Increasingly, developmental scientists agree that there are ways to meaningfully engage young

children in … math learning and that the effectiveness of such efforts depends on the pedagogical approach, the quality of teaching, and the connection of the instruction to young children's curiosity (Katz, 2015; Snow & Pizzolongo, 2014, p. 15)."

Table 2.2. *Frequency Distribution of the Respondents on the Interventions Employed by the Teachers in Addressing the Learning Difficulties of the Grade I Pupils in terms of Communication Domain*

Indicators	Yes		No		Total	
	F	%	F	%	F	%
Who Am I?	275	87.30	40	12.70	315	100.00
It is Fun Time with Nursery Rhyme	256	81.27	59	18.73	315	100.00
My Treasure Box	246	78.10	69	21.90	315	100.00
Getting to Know You	236	74.92	79	25.08	315	100.00
Follow the Leader	236	74.92	79	25.08	315	100.00
What is Inside My Bag?	227	72.06	88	27.94	315	100.00

Table 2.2 displays the frequency distribution of the respondents on the interventions employed by the teachers in addressing the learning difficulties of the Grade I pupils in terms of communication domain where 275 (87.30 %) of the respondents employed "Who Am I?" in addressing the learning difficulties of the Grade I pupils in terms of communication domain. Meanwhile, 227 (72.06%) of the respondents employed "What is Inside My Bag?" in addressing the learning difficulties of the Grade I pupils in terms of communication domain.

As manifested from the result, it is revealed that most of the Grade I Teachers employ Who Am I? Intervention Strategy in addressing the learning difficulties of the Grade I pupils in terms of communication domain while some of the Grade I Teachers employ What is Inside My Bag? Intervention Program.

Central to the discussion of this result is that young children's oral language does not develop automatically or evenly. To begin, home experiences appear key. This supports Scheele, Leseman, Mayo, and Elbers' (2012) study of 3-year-olds, for example, finds, "Home-language and literacy environment predicted children's ability to use academic language in impersonal and personal narratives" in school (p. 419). Moreover, according to some researches (Christakis, 2016; Krogh & Morehouse, 2014), opportunities for individual children to articulate their thoughts have long been encouraged through informal conversations with teachers and peers, in play, and in other self-chosen activities.

Glynis P. Aviles

Table 2.3. *Frequency Distribution of the Respondents on the Interventions Employed by the Teachers in Addressing the Learning Difficulties of the Grade I Pupils in terms of Social Domain*

Indicators	Yes		No		Total	
	F	%	F	%	F	%
It is Play Time	257	81.59	58	18.41	315	100.00
You Learn, I Learn, We Learn	256	81.27	59	18.73	315	100.00
My Hobbies and My Favorites	234	74.29	81	25.71	315	100.00
My Day	201	63.81	114	36.19	315	100.00
Every Day is Friendship Day	154	48.89	161	51.11	315	100.00
My Friends Bank	146	46.35	169	53.65	315	100.00

Table 2.3 shows the frequency distribution of the respondents on the interventions employed by the teachers in addressing the learning difficulties of the Grade I pupils in terms of social domain where 257(81.59 %) of the respondents employed "It is Play Time" in addressing the learning difficulties of the Grade I pupils in terms of social domain. Meanwhile, 146 (46.35%) of the respondents employed "My Friends Bank" in addressing the learning difficulties of the Grade I pupils in terms of social domain.

This findings revealed that most of the Grade I Teachers employed It is Play Time Interventions in addressing the learning difficulties of the Grade I pupils in terms of social domain while only some Grade I Teachers employed My Friends Bank Intervention Program.

This findings corroborate with the result of the study of Sim (2015, p. 228) who asserts that purposeful play in the local context requires the need for active involvement on the part of the teachers in an activity that all children like to do best, to play, in order to deliver the objective of education: to learn'.

Further, Theobald et al. (2015) investigated children's perspective of play and learning in everyday life and found out that children believed them to be intertwined and not separate activities.

Conclusion

Based on the results of the study, it is therefore concluded that the learning difficulties of the Grade I pupils identified by the Multi-Factored Assessment Tool (MFAT) were: "difficulty in recognizing and reading pre-primer sight words, primer sight words, and basic Filipino words", "difficulty in identifying time by the hour", "difficulty in telling stories to peer/class and teacher coherently with the

uninterrupted flow of sounds, words, syllables, and phrases", and "difficulty in participating in group activities and role plays", and that the interventions employed by the teachers in addressing the learning difficulties of the Grade I pupils were "Marungko Reading Intervention Strategy", "It's Hour Time", "Who Am I?", and "It's Play Time Intervention Strategy" which were generally very effective.

Furthermore, it has been found that all of the interventions employed by the Grade I teachers were very effective in addressing the learning difficulties of the Grade I pupils in cognitive domain (literacy and numeracy), communication domain, and social domain. Finally, the researcher proposed intervention models to address learner's difficulties in specific domain.

In light of the conclusions above, the researcher made the following recommendations: (1) Since the results of this study found out that early identification of learner's difficulties using standardized test greatly help in deciding and designing appropriate and relevant interventions that would address the learning difficulties of the Grade 1 pupils, then the Officials of DepEd Division of Quezon may consider measuring learning difficulties in other perspective. (2) Since the results of this study revealed the interventions employed by the teachers in addressing the learning difficulties of the pupils, the Grade I teachers may consider using these interventions. (3) Since the results of this study found out that all of the interventions employed by the Grade 1 teachers were very effective in addressing the learning difficulties of the Grade 1 pupils, then the Grade I Teachers may enhance these strategies to make the interventions most effective.
(4) Since the interventions presented in this study were only those interventions employed by the teachers, the future researchers may study set of strategies in order address the learning difficulties of the Grade I pupils identified by the Multi-Factored Assessment Tool (MFAT).

References

Aunio, P., & Räsänen, P. (2016). Core numerical skills for learning mathematics in children aged five to eight years–a working model for educators. *European Early Childhood Education Research Journal,* 24(5), 684-704.

Aydeniz, M., Cijak, D. F., Graham, S. C., & Retinger, L. (2012). Using Inquiry-Based Instruction for Teaching Science to Students with Learning Disabilities. *International Journal of Special Education,* 27, 189–206.

Baroody, A. J., & Purpura, D. J. (2017). Early number and operations: Whole numbers. In J. Cai (Ed.), *Compendium for*

research in mathematics education (pp. 308–354). Reston, VA: National Council of Teachers of Mathematics.

Barquero, L. A., Davis, N., & Cutting, L. E. (2014). Neuroimaging of Reading Intervention: A Systematic Review and Activation Likelihood Estimate Meta-Analysis. *PLoS ONE,* 9, e83668-16.

Baroody, A. J., Purpura, D. J., Eiland, M. D., & Reid, E. E. (2014). Fostering first graders' fluency with basic subtraction and larger addition combinations via computer-assisted instruction. *Cognition and Instruction*, 32, 159–197.

Baroody, A. J., Purpura, D. J., Eiland, M. D., & Reid, E. E. (2015). The impact of highly and minimally guided discovery instruction on promoting the learning of reasoning strategies for basic add-1 and doubles combinations. *Early Childhood Research Quarterly,* 30, 93–105.

Baroody, A. J., Purpura, D. J., Eiland, M. D., Reid, E. E., & Paliwal, V. (2016). Does fostering reasoning strategies for relatively difficult basic combinations promote transfer? *Journal of Educational Psychology,* 108, 576–591.

Baroody, A. J., & Purpura, D. J. (2017). Early number and operations: Whole numbers. In J. Cai (Ed.), *Compendium for research in mathematics education* (pp. 308–354). Reston, VA: National Council of Teachers of Mathematics.

Bergen, D. (2015). Reconciling play and assessment standards. Play from birth to twelve: Contexts, perspectives, and meanings. In D. Fromberg, & D. Bergen (Eds.), *Play from birth to 12: Contexts, perspectives, and meaning* (233–240). New York, NY: Routledge.

Boyer (2011). Meta-Analysis of Academic Interventions Derived from NeuropsychologicalData. *School Psychology Quarterly,* 31, 28-42.

Brizuela, G.P., (2022). Accreditation and Equivalency Test Performances: A Comparative Study. *Psychology and Education: A Multidisciplinary Journal, 1*(3), 199-207

Bryant, D. P., Pfannenstiel, K. H., Bryant, B. R., Roberts, G., Fall, A. M., Nozari, M., & Lee, J. (2021). Improving the Mathematics Performance of Second-Grade Students with Mathematics Difficulties through an Early Numeracy Intervention. *Behavior modification, 45*(1), 99-121.

Buenavista, M. Y. (2019). Correlation of Multi-Factored Assessment Tool (MFAT) Results to Academic Performance of Learners with Special Educational Needs (LSEN): Basis for a Proposed Instructional Guide for Teachers Handling LSEN. *Thesis (MaEd) -- Philippine Christian University, 2019.*

Cacao, M. M. and Tan, C. S. (2020). Extent of Implementation of Kindergarten Program and Its Impact on School Readiness Year-End Assessment (SREYA) in the Elementary Schools in One Division in the Philippines. *International Journal of Advanced Research (IJAR).*

Calvin, C. M., Batty, G. D., Der, G., Brett, C. E., Taylor, A., Pattie, A., & Deary, I. J. (2017). Childhood intelligence in relation to major causes of death in 68 year follow-up: Prospective population study. *BMJ*, 357, j2708.

Capuyan, D., Etcuban, J. O., Manguilimotan, R., Padillo, G., Raynera, W., & Onrejas, E. (2019). Mathematics remedial program for elementary learners in Cebu City, Philippines. *American Research Journal of Humanities Social Sciences*, 2(5), 16-23.

Castro Huertas, I. A., & Navarro Parra, L. J. (2014). The role of songs in first-graders' oral communication development in English. *PROFILE Issues in Teachers' Professional Development,* 16(1), 11-28.

Charitaki, G., Tzivinikou, S., & Stefanou, G. (2021). A meta-analytic synthesis of early numeracy interventions for low-performing young children. *SN Soc Sci 1 (105).*

Christakis, E. (2016). The importance of being little: What young children really need from grownups. *New York, NY: Random House.*

Chu, F. W., & Geary, D. C. (2015). Early numerical foundations of young children's mathematical development. *Journal of Experimental Child Psychology,* 132, 205-212.

Clements, D. H., & Sarama, J. (2014). Learning and teaching early math: The learning trajectories approach (2nd ed.). *New York, NY: Routledge.*

Clements, D. H., Sarama, J., Baroody, A. J., & Joswick, C. (2020). Efficacy of a learning trajectory approach compared to a teach-to-target approach for addition and subtraction. *ZDM.*

Cubillas, T. E., & Ventura, R. P. (2019). Effectiveness of Small Group Instruction in Improving the Reading Skills of Grade Six Pupils: Basis for a Reading Intervention Program. *Caraga State University, Ampayon Campus, Butuan City, Philippines*

De Dios, C.B.O., (2022). Children's Home Learning during COVID-19 Pandemic: The Lived Experiences of Selected Filipino Parents on Remote Learning. *Psychology and Education: A Multidisciplinary Journal, 1*(2), 147-158

Degotardi, S., & Pearson, E. (2014). The relationship world of infants and toddlers: Multiple perspectives from early years theory and practice. *Milton Keynes, UK: Open University Press*

Dennis, M. S., Sharp, E., Chovanes, J., Thomas, A., Burns, R. M., Custer, B., & Park, J. (2016). A meta-analysis of empirical research on teaching students with mathematics learning difficulties. *Learning Disabilities Research & Practice,* 31(3), 156-168.

Derramas, C., (2022). Preschoolers' Use of Computer Games: Basis for Parental and Educational Direction. *Psychology and Education: A Multidisciplinary Journal, 2*(1), 214-215

DiPerna, J. C., Lei, P., Cheng, W., Hart, S. C., & Bellinger, J. (2018). A cluster randomized trial of the Social Skills Improvement System-Classwide Intervention Program (SSIS-CIP) in first grade. *Journal of Educational Psychology, 110*(1), 1–16.

Figuracion, V. C., & Ormilla, R. C. G. (2021). The word reading performance of grade V pupils through a library hour program in Philippines. *EDUCATUM Journal of Social Sciences,* 7(1), 95-103.

Frye, D., Baroody, A. J., Burchinal, M. R., Carver, S., Jordan, N. C., & McDowell, J. (2013). Teaching math to young children: A practice guide. *Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education.*

Goouch, K., & Powell, S. (2013). The baby room: Principles, policy, and practice. *Milton Keynes, UK: Open University Press.*

Graham, J. & Kelly, S. (2018). How effective are early grade

reading interventions? A review of the evidence. *Educational Research Review,* 27 (155-175).

Harris, M. (2015). Young children's curiosity about physical differences associated with race: Shared reading to encourage conversation. *Early Childhood Education Journal*, 44, 97–105.

Jiménez, J., De León, S., & Gutiérrez, N. (2021). Piloting the Response to Intervention Model in the Canary Islands: Prevention of Reading and Math Learning Disabilities. *The Spanish Journal of Psychology,* 24, E30. doi:10.1017/SJP.2021.25

Johnson, J. (2014). Play provisions and pedagogy in curricular approaches. In L. Brooker, M. Blaise, & S. Edwards (Eds.), *The SAGE handbook of play and learning in early childhood* (pp. 180–191). Los Angeles, CA: Sage.

Journal of Abnormal Child Psychology (2019) . *An Official Publication of the International Society for Research in Child and Adolescent Psychopathology,* 47(6).

Klopfer, K. M., Scott, K., & Ducharme, J. (2019). Effect of Preservice Classroom Management Training on Attitudes and Skills for Teaching Children With Emotional and Behavioral Problems: A Randomized Control Trial. *The Journal of the Teacher Education Division of the Council for Exceptional Children*, 42(1): 49-50.

Krogh, S., & Morehouse, P. (2014). The early childhood curriculum: Inquiry learning through integration. *New York, NY: Routledge*

Lemana, J.D., (2022). The Physical and Mental Health of Learners Doing Online Learning During the Pandemic. *Psychology and Education: A Multidisciplinary Journal, 1*(3), 214-223

Li, L., Zhou, X., Gao, X., & Tu, D. (2020). The development and influencing factors of Kindergarteners' mathematics problem solving based on cognitive diagnosis assessment. *ZDM*.

Malmberg, L., Mwaura, P., & Sylva, K. (2021). Effects of a preschool intervention on cognitive development among East-African preschool children: A flexibly time-coded growth model. *Early Childhood Research Quarterly,* 26 (1),

Merkley, R., & Ansari, D. (2016). Why numerical symbols count in the development of mathematical skills: Evidence from brain and behavior. *Current Opinion in Behavioral Sciences,* 10,14-20.

Mountains, T. (2020). Being a 21st Century Educator. National Educational Association

Morgan, P. L., Farkas, G., Wang, Y., Hillemeier, M. M., Oh, Y., & Maczuga, S. (2019). Executive function deficits in kindergarten predict repeated academic difficulties across elementary school. *Early Childhood Research Quarterly, 46, 20-32.*

Mulligan, J., Oslington, G., & English, L. (2020). Supporting early mathematical development through a 'pattern and structure' intervention program. ZDM.

Nilvius, C. & Svensson, I. (2021). Efficacy evaluation of a full-scale response to intervention program for enhancing student reading abilities in a Swedish school context. *Reading and Writing*, 81.

Oclarit, R. P., & Casinillo, L. F. (2021). Strengthening the Reading

Comprehension of Students using a Context Clue. *Journal of Education Research and Evaluation,* 5(3).

Paley, V. (2014). A Child's work: The importance of fantasy play. *Chicago, IL: University of Chicago Press.*

Pelegro, R.T., (2022). The Impact of Electronic-Simplified Modules for the Academic Performance in Aralin Panlipunan Among Online Grade 6 SSES of Butuan Central Elementary School. *Psychology and Education: A Multidisciplinary Journal, 1*(1), 63-71

Peng, P., Barnes, M., Wang, C., Wang, W., Li, S., Swanson, H. L., & Tao, S. (2018). A meta-analysis on the relation between reading and working memory. *Psychological Bulletin,* 144, 48– 76.

Peng, P., Wang, T., Wang, C., & Lin, X. (2019). A meta-analysis on the relation between fluid intelligence and reading/mathematics: Effects of tasks, age, and social economics status. *Psychological Bulletin,* 145, 189– 236. https://doi.org/10.1037/bul0000182

Peng, P. and Kievit, R. A. (2020). The Development of Academic Achievement and Cognitive Abilities: Bidirectional Perspective.

Pinto, G., Bigozzi, L., Tarchi, C., Vezzani, C., & Accorti Gamannossi, B. (2016). Predicting reading, spelling, and mathematical skills: A longitudinal study from kindergarten through first grade. *Psychological reports,* 118(2), 413-440.

Ramirez-Esparza, N., & Garcia-Sierra, A. (2014). The bilingual brain: Language, culture and identity. In: V. Benet-Martínez & Y. Hong (Eds.), *The Oxford handbook of multicultural identity: Basic and applied perspectives* (pp. 35–56). Oxford, UK: Oxford University Press.

Recchia, S.L. & Fincham, E.N. (2019). The Significance of Infant/Toddler Care and Education A Call to Unite Research, Policy, and Practice. In The Wiley handbook of early childhood care and education. Eds. Brown, File, C.P., McMullen, N., & Benson, M. *Rita Gold Early Childhood Center, Teachers College, Columbia University* (200).

Roberts, G.J., Hall, C., Cho, E. et al. (2021). The State of Current Reading Intervention Research for English Learners in Grades K–2: a Best-Evidence Synthesis. *Educ Psychol.*

Scheele, A. F., Leseman, P. M., Mayo, A. Y., & Elbers, E. (2012). The relation of home language and literacy to three-year-old children's emergent academic language in narrative and instruction genres. *Elementary School Journal*, 112, 419–444.

Sim, S. L. (2015). The playful curriculum: Making sense of purposeful play in the twenty-First-century preschool classroom. In C. Koh (Ed.), *Motivation, leadership and curriculum design* (225–241). The Hague: Springer.

Skwarchuk, S.-L., Sowinski, C., & LeFevre, J.-A. (2014). Formal and informal home learning activities in relation to children's early numeracy and literacy skills: The development of a home numeracy model. *Journal of Experimental Child Psychology*,121, 63–84.

Stockard, J., Wood, T. W., Coughlin, C., & Khoury, C. R. (2018). The effectiveness of direct instruction curricula: A meta-analysis of a half century of research. *Review of Educational Research,* 88, 479– 507. h

Sparapani, N., Connor, C. M., McLean, L., Wood, T., Toste, J., & Day, S. (2018). Direct and reciprocal effects among social skills,

Glynis P. Aviles

vocabulary, and reading comprehension in first grade. *Contemporary Educational Psychology,* 53, 159-167.

Teacher Education and Special Education (TESE) (2019). *The Journal of the Teacher Education Division of the Council for Exceptional Children*, 42(1).

Teaching Exceptional Children – Dyslexia (2019). *Council for Exceptional Children,* 51(3).

The Journal of Special Education (2019). *Hammill Institute on Disabilities and SAGE Publishing,* 52(4).

Theobald, M., Danby, S., Einarsdottir, J., Bourne, J., Jones, D., Ross, S., et al. (2015). Children's perspective of play and learning for educational practice. *Education Sciences, 5*(4),345–360.

Thompson, J. (2020). Instructing and Assessing 21st Century Skills: A Focus on Complex Communication. *The Third in a 7-Part Series on Research and Best Practices Related to Instruction and Assessment of 21st Century Skills*

Thompson, R. A. (2013). Attachment theory and research: Precis and prospect. In P. Zelazo (Ed.), *Oxford handbook of developmental psychology* (pp. 181–216). New York, NY: Oxford University Press.

Toll, S. W. M., & Luit, J. E. H. (2013). Early Numeracy Intervention for Low-Performing Kindergartners.

Toll, S. W., & Van Luit, J. E. (2014). Effects of remedial numeracy instruction throughout kindergarten starting at different ages: Evidence from a large-scale longitudinal study. *Learning and instruction,* 33, 39-49.

Trawick-Smith, J., Swaminathan, S., & Liu, X. (2016). The relationship of teacher-child play interactions to mathematics learning in preschool. *Early Child Development and Care*, 186, 716–733.

Tzur, R., & Lambert, M. A. (2011). Intermediate participatory stages as zone of proximal development correlate in constructing counting-on: A plausible conceptual source for children's transitory "regress" to counting-all. *Journal for Research in Mathematics Education*, 42, 418–450.

Tzur, R., & Lambert, M. A. (2013). Intermediate participatory stages as zone of proximal development correlate in constructing counting-on: A plausible conceptual source for children's transitory "regress" to counting-all. *Journal for Research in Mathematics Education*, 42, 418–450.

Vidergor, H. E., (2018). Multidimensional curriculum enhancing future thinking literacy: teaching learners to take control of their future. *Koninklijke Brill, NV, Leiden, The Netherlands,* 179-199.

Widlund, A., Tuominen, H., Tapola, A., & Korhonen, J. (2020). Gendered pathways from academic performance, motivational beliefs, and school burnout to adolescents' educational and occupational aspirations. *Learning and Instruction,* 66, 101299.

Wood, L. and Hartshorne, M. (2017). Literacy: The Role of Communication Skills. The Voice for Secondary Education

Affiliations and Corresponding Information

Glynis P. Aviles
Pacatin Elementary School
Schools Division of Quezon, Philippines