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Developing four reading comprehension skills through multiple intelligences: Anunciata Approach (AAp)

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Abstract. The current study aims to determine the effectiveness of the Anunciata Approach (AAp) in developing four reading comprehension skills: identifying details, noting emotions, sequencing events, and making predictions. The AAp is a multiple intelligence (MI) based activity that aims to improve not only the reading comprehension skills of the students but also their familiarity with Biblical stories and the moral values they contain. To determine the effectiveness of the AAp, the kindergarten pupils at Colegio Anunciata received the AAp reading class for 30 minutes for 45 days. The data were then properly documented, methodically analysed and subjected to rigorous interpretation processes. The results revealed that the general effectiveness of the AAp is significant, with a large effect size of 0.68 in developing the four reading comprehension skills. Hence, the AAp can be highlighted as a medium for developing the four reading comprehension skills utilising the Biblical stories as a springboard and facilitated by MI-based activities. This study suggests that MI-based activities can effectively improve reading comprehension skills in young learners. Given the limited number of participants, it is recommended that this study be conducted with a larger sample size to enhance the reliability of the findings.

Keywords: identifying details, noting emotions, sequencing events, making predictions, reading comprehension, multiple intelligences

1. Introduction

The World Declaration on Education for All [56] promotes that "*Learning begins at birth*" and this affirms early childhood education (ECE) as an integral part of basic education and an educational level in its own right. Children, as early as 3 to 5 or the preschoolers, learn basic skills even before they enter formal school [15]. Significantly, investing in the child's early years is one of the best ways to lay a good and strong foundation in learning the basic knowledge, values and skills in life.

In this light, understanding the holistic nature of the children, especially the preschoolers, is necessary. To touch the holistic growth of a child, education shall encompass the children's cognitive, physical, emotional and social dimensions. In the theory of Piaget as regards *cognition development*, preschoolers start to use mental symbols to comprehend and interact with the world [55]. They construct their own knowledge as they interact within society. In the early years of development, they learn best through hands-on experiences that cater to their diverse learning styles. These will help them develop key cognitive, socio-emotional skills, including reading comprehension. The learners can solidify their understanding and enhance their academic abilities by engaging with the materials and activities.

Regarding *physical development*, children can now run, jump, and begin to climb a ladder [38]. They are so active that they want to try everything they see. In *emotional aspect*, children begin to be sensitive to their feelings and emotions. They are so

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anxious to please adults, and children of this age depend on the approval, love, and praise [38]. In *social skills*, they become socially aware of their peers' presence and appreciation. They can make connections between new and previous experiences. They are quite competent and reliable [15]. Further, children of this age are filled with excitement to do and create things by themselves.

Since there are numerous ways to help children learn and grow, the researcher decided to limit the study to *reading comprehension skills* as the instrument for the children to help themselves grow holistically. It is then imperative that preschool teachers be aware of how to guide the children's behaviours toward reading [45].

Reading is an integral part of human communication. It is essential in life because it is a primary tool for communication. Reading is the mental activity based on detecting words through sense organs, meaning-making, comprehension, and interpretation [35, 47]. Upon seeing the words through vision, the mind processes them to understand their implications and meaning. It requires effort and concentration to arrive at the real purpose of reading, which is comprehension [39]. As a child learns to listen and speak, they learn to read and write simultaneously. Hence, it is embedded in a larger developing skill of communication.

Reading is a right of every child. According to Roldan [43], reading is an educational accountability that no one shall leave the school without learning the basic skills for reading. The best time for children to learn to read is in their early childhood, when they are in preschool. Investing at an early age can yield a very positive outcome in the future. For children, reading is important because it provides a crucial piece of the foundation for their educational success [12]. It is vital to lay a good foundation for children to acquire the basic literacy skills that prepare them for school and life success. Thus, comprehension is necessary for learning and useful in daily life.

Comprehension is the ultimate end of reading [32]. It is the process that involves memory, thinking abstractly, visualisation and understanding vocabulary as well as how to decode the words properly [27]. A profound study of good readers reveals that they read with purpose and think actively as they read. Villamin [53] described that the reader uses text features and background knowledge to understand the printed words. In other words, it requires the readers to recognise and fathom the meaning of the words.

Developing this reading skill is essential if comprehension is the centre of reading. It is the ability to deeply and actively glean meaning from written text [40]. The definition requires an individual to decode words and understand their gist and implications. Thus, the reader must develop these skills to help them comprehend what they read. Following Block and Pressley [6], there are many reading comprehension skills; however, this paper focuses only on the four reading comprehension skills. These four are identifying details, noting emotions, sequencing events and making predictions.

The first comprehension skill is *identifying details*. This refers to the basic details contained in the story. It involves recognition and recalling what has been read [51]. It tells about the most important part of the story in brief and concise words. Children begin comprehending the story and recognising basic facts and details in their early childhood.

The second comprehension skill is *noting emotions*. This skill focuses on how a person or characters feel by what they do and say. Recognising the emotions begins in early childhood when young learners tell their own stories. They begin to feel the emotions in the story and thus become familiar with it. They can also identify and manage their behaviour, which helps them comprehend the text when they read or express emotions.

The third comprehension skill is *sequencing events*. It is the process of putting events, ideas, and objects in a logical order [49]. It is the ability to know in what order

certain events happen. The reader pays attention to what happens first, then next and later [57]. It can also tell the steps in doing something. This skill helps the young learner make confident decisions about the connection of the text, which comes first and last. It is an important skill in reading comprehension, and the children need to acquire the skills to read and think sequentially at an early age.

The fourth comprehension skill is called *making predictions*. According to Grellet [24] (as cited in [25]), prediction refers to the "faculty of predicting or guessing what comes next, making use of grammatical, logical and cultural clues". Information is not noticeably specified but is implied in the context. This implies that readers analyse the text to comprehend and draw a conclusion from the story. It also involves thinking about what will happen next. The reader creates an upcoming event based on the title or picture of the story. However, some pupils may not derive the meaning of what they read [1]. Some are fluent in reading but do not comprehend at all. Currently, this is what the researcher experiences in the school where she is affiliated. The researcher proposed that using multiple intelligences can help teachers develop reading comprehension skills of the kindergarten pupils at Colegio Anunciata.

Multiple intelligences (MI) was proposed by Gardner [21], which refers to a group of intelligences in diverse ways in which people acquire and utilise knowledge. His theory suggests that everyone possesses several intelligences, such as verbal-linguistic, logical-mathematical, musical-rhythmic, bodily-kinesthetic, visual-spatial, natural, existential, interpersonal, and intrapersonal.

Verbal-linguistic intelligence is demonstrated using words and expressed through reading, writing, listening, and speaking [17]. It allows an individual to use language to gain knowledge and information. Young children use their voices to communicate their learning [31]. They use everything they have learned to demonstrate their knowledge verbally or in writing. The kinds of activities that can be used in the reading class in this area are storytelling, group discussion, word games and word spells.

Logical-mathematical intelligence is the ability to think abstractly in concepts and to discern numerical concepts [29]. Most often, this intelligence deals with mathematical thinking and solving problems. They can use numbers effectively.

Recently, Sauerland, Sugawara and Yatsushiro [46] demonstrated that preschool children are capable of higher-order logical reasoning. In 2023, Warmansyah et al. [54] examined the effectiveness of number dice games in developing logical-mathematical skills in children aged 5-6. Activities that can be used are pattern games, number activities, sequencing information and word order activities.

Musical-rhythmic intelligence refers to the ability to produce rhythm, pitch, melodies and tone in quality [17]. It is an effective tool in teaching reading. As Harp [26] (as cited in [13]) states, "*Music and reading go together because singing is a celebration of language*". Since children are naturally lovers of music, they can produce words with sound and compose simple songs with their original music piece. Singing songs, playing musical instruments, and other movements such as hand beating, finger tapping, or even humming can be done in class [2].

Visual-spatial intelligence is the ability to perceive the visual-spatial world accurately [50]. It is also defined by Goodnough [23] as the intelligence that gives one the ability to manipulate and create mental images to solve problems. They can visualise characters and settings of a poem or story in order to process the meaning. It also involves being good at directions and the locations of certain places. The arts such as drawing, painting and collage are powerful motivators for children [31]. It allows the children to express their comprehension of the world and explore their intelligence.

Bodily-kinesthetic intelligence involves the movement of the body. It requires mental ability to move our body [20]. This implies that an individual uses his fingers, hands, mouth, facial expression, and whole body to communicate and express ideas to others.

The children can use role playing, dancing, manipulative toys or alphabet.

Interpersonal intelligence refers to relating well to others by being sensitive to their needs. They can empathise and sympathise with others [23]. It entails the ability to understand the feelings and emotions of others. Sukeemok [50] indicated in his study that interpersonal includes the sensitivity of facial expression, gestures, voice and the capacity for discriminating other kinds of interpersonal cues. Cooperative games and paired activities are great activities to improve this intelligence.

Intrapersonal intelligence means being conscious and aware of one's emotions and feelings [20]. Hence, a healthy mastery of oneself reveals that one demonstrates clear awareness of oneself [17]. They can behave well in certain situations, such as when angry, happy, sad or worried [20, 25]. This implies that a person who possesses this intelligence has deep self-knowledge and is conscious of their inner self. Children can improve their intrapersonal intelligence by relating certain events to their experiences. They can also share feelings with the characters [25].

Naturalist intelligence designates the human ability to distinguish among living things and sensitivity to other features of the natural world [33]. It is manifested in love and care for the plants, animals and other living things. They play by collecting and sorting rocks, flowers, leaves and other natural materials. Activities that can be used in the class are writing on soil, rock, water or even leaves.

Existential intelligence is defined as the tendency to be concerned with the ultimate issues of life, to engage in transcendental concerns and the capacity to locate oneself with respect to the furthest reaches of the cosmos [20]. In other words, this is a person's quest, and some answers are challenging to explain and fathom, such as "Why is there death?" or "Who is God?" The activities that can be done in class are imagination, reflection, group sharing, and asking profound questions.

Hence, the multiple intelligences theory and its related activities are adopted to develop the four reading comprehension skills. However, unique to this research's concern is that the MI undergo further modifications as the MI touches the real situations and missions of the Colegio Anunciata, San Carlos City, Pangasinan, where the researcher belongs. As a Catholic educational institution and surely upholding the ideals of the Congregation of the Dominican Sisters of the Annunciata, the Colegio Anunciata believes in the revealed truths of the Christian faith and at the same time, has the responsibility to share these truths with the learners. However, it must not be understood as an encroaching and rigid educational system; it is part of the Christian faith to respect human beings' natural growth and development. Therefore, the research comes up with an approach based on the Catholic truths and the Congregation's ideals, as well as adopting the MI concepts and practical implementations to improve the four reading comprehension skills of the kindergarten pupils. The researcher coined this term as *Anunciata Approach* or simply **AAp**.

Anunciata Approach is an initiative and innovative strategy for teaching reading comprehension to kindergarten pupils at Colegio Anunciata, San Carlos City, Pangasinan. Regarding the teaching methods, AAp focuses on the child's natural growth. Hence, this approach adopted the theory of MI in developing the children's reading comprehension skills. Specifically, the AAp is a multiple intelligence-based activity that aims to improve the students' reading comprehension skills, whereby faith integration is infused, particularly the familiarity with Biblical stories and the moral values they contain. This approach allows kindergarten pupils to be children as they are and empowers them in all aspects. In this regard, Colegio Anunciata believes that when a child's full potential has been cultivated, one's technical capacity is developed, and one's value and moral worth are further strengthened, there must be a sense of harmony between teaching and learning with the children. From these viewpoints, young learners are guided and oriented towards the fullness of their being. Moreover,

the AAp respects the children's multiple ways of teaching and learning.

Armstrong [2] said that reading involves activating many areas of the brain; therefore, it is significant to activate and enhance as many as possible Gardner's intelligences in order to achieve effective and skilful learning. However, at the same time, it also aims to share Christian values and to invite the learners to become familiar with the Scripture. Specifically, the AAp consists of the following:

1. *Using Biblical stories*

The ultimate aim of reading is to comprehend what is read. Anunciata Approach begins in selecting Biblical stories that can tickle the young reader's mind, and simultaneously, the selected readings are imbued with rich values and insight. Thus, it allows the children to widen their horizons, not only with the common stories in the ordinary reading setting class. It is also imperative for teachers to simplify complex and profound scriptural passages into a language that preschoolers can easily understand.

2. *Application of multiple intelligences in reading activities*

After carefully selecting and simplifying the Biblical stories, the next step is to allow the learners to read the scriptural texts. However, again, the aim is not simply fun reading, but to develop the reading comprehension skills of the kindergarten students. Here comes the MI-based activities. The following are examples of teaching reading using multiple intelligences to develop comprehension skills. Thus, it provides the young learners with a variety, dynamic and engaging way of learning how to read. All the possibilities of using such materials are used, and the researcher coins the following words.

Verbal-linguistic reading: Aside from reading the books, having a simple dialogue with the children greatly helps their reading growth. One's language has to be developed by enhancing communication skills, where ideas and perceptions are clearly conveyed and properly articulated. Speaking or expressing words can develop their oral skills and structure thoughts without writing on paper. In addition, retelling a story, having a short play, reciting poems, and answering word puzzles can greatly improve their reading comprehension skills.

Musical-rhythmic reading: Anunciata Approach allows the children to sing songs related to the day's theme that springs from the Biblical stories. It also involves movements and the use of musical instruments.

Naturalist reading: Children are naturally scientists and love exploring the world with natural objects. Words and pictures are important when reading, but real objects are essential for children to read. Writing action words or short sentences in the soil using a stick can help develop natural reading or finger writing on the sand or water. In addition, children may also write new concepts and new vocabulary on banana leaves, rocks or other interesting natural objects. Dried leaves or fallen leaves under a tree can be used to create words or phrases wherein children may decode the sounds while they enjoy collecting natural objects.

Visual-spatial reading: According to Armstrong [3], we need to see the word to read using spatial reading. When children see a letter, it can be seen and taught with other symbols or pictures, such as "v" with the picture of a volcano, "s" with a snake, "o" with an orange, etc. Words and vocabulary are easily remembered when a picture accompanies them. Any illustration with words and vocabulary may be done through drawing, painting, sketching, and even moulding clay,

which can help develop reading skills. Letting the children do collages and artworks using short phrases such as Jonah and the big fish, Noah and the big boat, or the Good Samaritan.

Logical-mathematical reading: More than reading logical or mathematical books, preschoolers who learn to read and comprehend begin to analyse and answer properly the words. Questions and answers in the story like "*How many pairs of animals does Noah have? Noah has twenty-four pairs of animals*" are encouraged with the preschoolers to attain the real purpose of reading, which is to comprehend the lessons and values they contain. The following are some activities to enhance the children's reading comprehension skills, such as playing word puzzles, counting, Scrabble games, and bingo words/letters.

Intrapersonal and interpersonal reading: Preschoolers love storybooks; reading can easily be nurtured when the children naturally feel new words and concepts. Providing preschoolers with books to picture themselves with the characters helps them cope with their emotional and social problems. Puppet shows and short plays of the Biblical texts can be a supplement for this domain. When children experience and comprehend the new emotions they read and can add them to his/her new vocabulary, this can be a precursor for reading. In this way, reading comprehension skills are enhanced.

Bodily-kinesthetic reading: Aside from the visual presentation of the words, using spatial cues, reading new vocabulary or a sentence may be introduced with a real motion of the words. Let the children move creatively as they read the words written on the board. She is dancing. She is drinking. He is eating. He is sleeping. Paper games and other kinds of activities using bodily movements contribute a lot to facilitating the reading skills of the preschoolers. It has been stated that bodily-kinesthetic is actually involved in reading [3].

Existential reading: The profound scriptural readings can provoke the young and creative mind with existential questions. As children throw questions with many whys and hows, let the children explore and discover the answers through such an experimental activity. A scientific explanation of the universe's origin, how a baby grows, or plants or why there is rain and a big flood, may be available through pictures or animated videos. Providing simple books that answer their unending quest may help build the children's new vocabulary and comprehension skills.

3. *Application in real life situation*

The children are given time to ponder and execute in a real-life situation. Let the children experience for themselves the Biblical passages they have read. Ample time for reading through the execution of words is necessary to develop comprehension skills of the learners [16]. If helping is the story's theme, let the children help others in their own way. Young children comprehend more of what they read when they do it by themselves.

4. Celebration for a job well done

Reading will be more fun when it is celebrated as a good job for kids. A celebration could be a simple and joyful cheering of the group or a teacher's affirmation of a job well done. As children are affirmed, they will be encouraged to do and cooperate at their best.

MI theory can help the learners develop their special abilities when encouraged by MI-reading activities [28]. Understanding these intelligences is crucial in developing teaching strategies to help educate children. Using MI in teaching reading provides various activities to promote and develop children's comprehension skills. Several studies showed the effective results of using MI-based activities in teaching various settings [36]. Therefore, teachers must integrate MI-based activities in developing reading comprehension skills. According to Uhlir [52], using MI in the classroom positively affects the learners' reading efficiency. Another study conducted by Burman and Evans [8] described that using MI can improve reading skills of the young learners, wherein the data of the post-test intervention showed that reading comprehension skills of the pupils were increased.

In the study of Gaines and Lehmann [19], the students' performance was improved using Gardner's MI theory, which was conducted at the fourth-grade classes in the USA. Cluck and Hess [10] explained in their study how students demonstrated growth in their reading test results after incorporating the MI-based lesson in the class. At the end, they highly recommended the use of MI in all learning aspects. Armstrong [3] also emphasised that MI theory can help educators to generate reading strategies modified to students who learn in multiple ways. This implies that reading can be best taught in a broader range using different talents and skills.

In an eight-week study of Abdulhamid Abdulkader, Gundogdu and Ali Eissa [1], they concluded that MI-based activities helped improve the students' reading comprehension skills. Recently, a 25-day study conducted by Hasanah [28] expressed that MI-based strategies helped improve reading comprehension of the Grade VIII students at Kebumen. An added study of Armstrong [2] in the multiple intelligences of reading and writing: Making the Words come alive, shows how MI helped the fourth-grade students to improve reading comprehension. It was found out from the test results that using the MI strategy improves reading comprehension skills. Furthermore, using MI as a strategy in the third and fifth grades in Illinois, United States, showed that phonics, comprehension, vocabulary and portfolio had significant improvement in reading comprehension [41]. Sukeemok [50] also proved in his findings that after eight weeks of study, MI-based activities help develop English reading comprehension at Taweethapisek School. All the results of the previous studies showed that integrating MI-based activities in reading classes helps learners develop reading comprehension skills. Therefore, Gardner [20] suggested that educators should use various and multiple ways of teaching in order to modify goals and values appropriate to their teaching and children.

The researcher considers and believes that every child is unique, with a reservoir of great potential and the capacity for greater learning. Thus, they are bound to be taught according to their unique intelligences and learning styles. Since the school prefers to adopt the MI theory in teaching reading, in which the researcher is affiliated, it is in the researcher's utmost interest to determine the effectiveness of the approach in developing reading comprehension skills of the kindergarten pupils. However, recognising the school's Catholic identity and the Congregation's missions and ideals, the researcher also emphasises the Christian values revealed through the Scripture and how these virtues are incarnated in the lives of the learners. Thus, the AAp was born to address this goal.

1.1. Significance

This research may help the kindergarten teachers find effective and enjoyable ways to develop the learners' reading comprehension skills and their love for learning and reading. The study results are also expected to improve the teaching approaches in kindergarten at the Colegio Anunciata. Though the AAp is still in the very prelimi-

nary stage, the researcher believes it holds tremendous potential for advancing the curriculum in the Colegio Anunciata and other Catholic schools.

2. Method

This study utilised an experimental method in which quantitative and qualitative approaches were employed. Using a single-group pre-test and post-test design in experimental research, an intensive study of the single group was subjected to a test and an observation. The single group design refers to a single or a small number of subjects [18]. The reading test results provided the quantitative data. The analysis of the test results allowed the researcher to determine and describe the comprehension skills of subjects. The results from the observation and interview with teachers provided the qualitative data that sufficed and strengthened the quantitative results.

2.1. Participants and setting

The participants were ten kindergarten pupils and two kindergarten teachers at the Colegio Anunciata in San Carlos City, Pangasinan. Based on the daily classroom encounters and observations of the teacher-researcher and teacher, these kindergarten pupils were independent readers in basic reading skills but frustrated in comprehension.

The experimental group consisted of ten kindergarten pupils aged 5 to 6, with a balanced gender representation of 5 boys and 5 girls. This demographic detail is crucial for understanding the study's context and the findings' applicability to similar age groups.

Due to the limited availability of participants, this study used a small sample size of 10. They were selected through convenience sampling, and the criteria for selection included being 5 years old and currently studying in kindergarten.

2.2. Materials and procedures

The teacher-made reading test was employed to identify the reading comprehension skills of the kindergarten pupils. A videotape recording documented the classroom proceedings and activities during observation. Interview guides with guide questions were also suitably prepared. The panel members amended and approved the teacher-made reading tests and MI-based activities, thus considering them suitable for this research.

The entire experimental procedure involved at least three phases. During the first phase, letters of permission to conduct the study were properly addressed to the school head of the Colegio Anunciata and to the parents or guardians of the kindergarten pupils. Once the permission was granted, class observations were conducted, and a pre-test was administered to identify the initial reading comprehension level of the kindergarten students. The evaluation and analysis of the results were duly recorded. The kindergarten pupils were subjected to a single-group study in the second phase. The teacher-made MI-based activities were implemented in the reading class for 30 minutes daily for 45 days through AAp. As part of the AAp, the participants took a short quiz after each story was read, but it was not used to evaluate the results. The reading teacher served as the observer for the whole duration of the implementation of the different activities. For the third phase, the post-test was administered to identify the final reading comprehension level of the kindergarten. A request for an interview with teachers was sought to validate the pre- and post-test results.

2.3. Data gathering tools

The researcher applied several tools to gather the data: class observation, teacher-made test and semi-structured interview. A teacher-made test was administered to

identify the kindergarten pupils' reading comprehension level. The class observation was also used to qualify the data gathered. Since the tests were the products of the researcher's ingenuity, the panel members validated them, and a reliability test was performed to strengthen their reliability and validity. The reliability test employed was the Pearson product-moment correlation coefficient. The value obtained is 0.89, which means that it is highly reliable. The same test was also utilised for the post-test. The teacher-made test was divided into four categories of reading comprehension skills: *identifying details, noting emotions, sequencing events and making predictions*.

The teacher-made activities based on MI were implemented for 45 days through AAp. After 45 days of reading class, the post-test results were administered and interpreted. Followed by the interview with the kindergarten teachers that sufficed the quantity results of the data, and to determine whether the approach helped develop the pupils' reading comprehension level. Further, the semi-structured interview was also quoted.

2.4. Data analysis

The data analysis included the computation of the reading comprehension level by applying the correct answer percentage versus the total number of items. To identify the level of reading comprehension of the kindergarten pupils after the pre- and post-tests, the standard set by the Philippine Informal Reading Inventory [42] was employed. The researcher considered the mean ($\bar{x}$) in order to give a summary of the level of reading comprehension of the participants.

$$\text{Reading comprehension (RC)} = \frac{\text{Total number of correct answers}}{\text{Total number of questions}} \times 100\%$$

Table 1
The criteria for the level of reading comprehension (adapted from [42]).

Reading levels	Percentage of comprehension	Meaning
Frustration	58 below	• Lowest reading level • Shows withdrawal from reading by refusing to read • Commit errors in reading
Instruction	59-79%	• The level at which a pupil can profit from instruction • With correct interpretation
Independent	80-100%	• Highest level • Free from tension • Pupil reads with conversational tone

Specifically, the t-test was utilised to determine the level of effectiveness of the AAp along with the following four reading comprehension skills: identifying details, noting emotions, sequencing events, and making predictions. Further, MS Excel was utilised to calculate the data. This tool facilitated the computation of t-values and effect sizes, which are important for evaluating the significance of the improvements observed in the participants' reading comprehension. Hence, the t-test results were interpreted at a significance level of α = 0.05, with 18 degrees of freedom.

For the interpretation of the test results according to the level of the effectiveness of the AAp, the Cohen's [11] measure of effect size (r^2) of the treatment as percentage was made use: 0.01 – small effect, 0.09 – medium effect, and 0.25 – large effect.

3. Results and discussion

This section presents, analyses, and interprets the results pertinent to the problem. This study aims to determine the level of effectiveness of the AAp for kindergarten pupils, particularly those of Colegio Anunciata. Consequently, the researcher commenced this study by identifying the increase in the kindergarten's reading comprehension level before and after the implementation of AAp.

Table 2
Level of kindergarten students' reading comprehension (after pre-test and post-test).

Reading comprehension skills	Pre-test			Post-test		
	Mean (n = 10)	%	Reading comprehension level	Mean (n = 10)	%	Reading comprehension level
Identifying details	1.5	50	Frustration	2.5	83	Independent
Noting emotions	1.8	60	Instruction	2.5	83	Independent
Sequencing events	1.2	40	Frustration	2.4	80	Independent
Making predictions	2.1	70	Instruction	2.5	83	Independent
Overall	6.6	55	Frustration	9.9	82.5	Independent

In the analysis of the reading comprehension level after pre-test, the participants were considered in the frustration level since the computed overall mean is 6.6, which implies that the participants acquired a 55% reading comprehension level. According to the Republic of the Philippines Department of Education [42], frustration is the lowest level of reading comprehension at which an obvious tension happens during the reading and a low comprehension of ideas or concepts results. Furthermore, based on the researcher's experience and the findings of the class observation, the participants were independent readers in basic reading skills but frustrated in comprehension skills. When the pupils were asked what they read, they said they did not comprehend the words. During the class, the kindergarten would often ask the meaning of the word read in the story. Then, it is very relevant to develop comprehension skills because, as noted above, reading without comprehension is not reading at all. Candidly, reading with comprehension is a basic tool for learning [53]. In 2000, the National Reading Panel also stated that developing reading comprehension skills is essential to all other academic skills. In addition, it is an important element to consider in preparation for the reading curriculum.

After the implementation, the overall mean obtained for the post-test is 9.9, which implies that the participants acquired an 82.5% level of reading comprehension. The Republic of the Philippines Department of Education [42] described "independent" as a high level of reading comprehension at which a pupil can easily read without the adult's assistance. In this study, the general weighted mean obtained for the pre-test is 6.6, and the post-test has a mean of 9.9. This means that the post-test result is higher than the pre-test result. Therefore, it suggests that the AAp has helped enhance the reading comprehension skills of kindergarteners.

Since the kindergarten pupils were learning reading in multiple ways, such as verbal-linguistic, logical-mathematical, visual-spatial, musical, interpersonal, intrapersonal, naturalist and existential, they can comprehend better the text in the story. Using MI-based reading activities can help improve comprehension [30]. Through AAp, the kindergarten pupils actively participated in various fun-filled reading activities. Thus, they experience directly what they have read in the story. They were given time to explore certain texts in the story they had read. Furthermore, their reading comprehension skills were developed by speaking, analysing, drawing, singing, feeling,

moving, creating, and celebrating with nature. This is what the MI-based activities provide the learners. Learners can use all their senses, imaginations, emotions and experience in life to comprehend and interact with the text [31].

Furthermore, the principles of MI are indeed in line with Colegio Anunciata's main goal, which is to cultivate every child's totality in all aspects: physical, social, emotional, academic, cultural, moral, and spiritual, so that they may cope with life's challenges and realities and confront the demands of school.

Armstrong [3] expressed that using MI is a new possibility in reading instruction wherein the learners experience the full majesty of learning to read. From the observation findings, when the kindergarten pupils were asked questions, they could easily articulate what happened in the story. This indicates that kindergarteners develop reading comprehension skills by identifying details, noting emotions, sequencing events and making predictions. Nevertheless, the results and the findings of this study were in accordance with all the previous studies mentioned, such as Abdulhamid Abdulkader, Gundogdu and Ali Eissa [1], Botelho [7], Haboush [25], Hasanah [28] and Sukeemok [50], which showed that using MI can help improve the reading comprehension skills of the learners.

To further investigate these results, a t-test was used to determine the level of effectiveness of the AAp. Table 3 presents the summary of the mean of the test results in order to measure its effect size.

Table 3
Results of pre-test and post-test.

Reading comprehension skills	**Pre-test mean (*n* = 10)**	**Post-test mean (*n* = 10)**	**T-value (at 0.05, df=18)**	**Interpretation**	**Effect size (r^2)**	**Interpretation**
Identifying details	1.5	2.5	4.24	Significant	0.50	Large effect
Noting emotions	1.8	2.5	1.91	Not significant	–	No effect
Sequencing events	1.2	2.4	3.60	Significant	0.42	Large effect
Making predictions	2.1	2.5	1.12	Not significant	–	No effect
Overall	6.6	9.9	6.22	Significant	0.68	Large effect

In this analysis, the reading comprehension level in terms of *identifying details* for the pre-test has a mean of 1.5. The post-test result obtained 2.5 in this skill. With a single group of n=10 participants, the researcher used an alpha level of α = .05 and the degree of freedom df = 18. However, this study uses a dependent (paired) sample of 10 participants; the degrees of freedom should be df = n – 1, where n is the number of participants. Therefore, the correct degrees of freedom for this paired sample t-test should be df = 9.

The computed t-value of the pre- and post-tests has acquired 4.24 with an effect size of 0.50, which confirms that the AAp is significant and has a large effect in developing the *identifying details*.

As presented in table 3, the pre-test mean of 2.1 and the post-test mean of 2.5 have an effect size of exactly 0, which is inaccurate. The effect size could be small or close to zero, but not zero. Hence, recalculating the effect size is recommended for accurate results.

Furthermore, the large effect could be attributed to the MI-based activities in developing comprehension skills. Since MI-based activities provide varied and fun-filled activities, the participants could display and match their interests in multiple ways that are utilised to develop reading comprehension skills. Likewise, the result may also pertain to the number of question items in the reading test. Since identifying

main ideas comprises only three items, it can be another aspect of why the AAp significantly affects developing comprehension skills. Henceforth, the kindergarten teacher during the interview expressed that the pupils became more familiar with the names, places, and other details included in the story. The result above indicates that developing this basic comprehension skill is essential. More importantly, designing and crafting MI-based activities must be developmentally appropriate for kindergarten pupils. In the context of learning reading, the International Reading Association and National Association for the Education of Young Children [34] posited that learning activities must be developmentally appropriate regarding children's ages, interests and abilities. In this light, it is vital to revisit this advocacy to maintain the development of children's language and literacy skills.

The reading comprehension level in terms of *noting emotions* for pre-test has a mean of 1.8. The post-test result obtained 2.5 in this skill. The computed t-value of the pre- and post-tests has acquired 1.91 with zero effect size, meaning that the AAp is insignificant and has no effect in developing reading comprehension, particularly for *noting emotions*. This result can be attributed to the characteristics of the participants since the young learners progress in different stages of reading [9]. Although it was found that there was no effect, the kindergarten teacher quoted "*Each day the pupils became more conscious in identifying and recognising their emotions. They can easily relate to certain events according to the story*". Indeed, it is still apparent in the interview that the effort of the AAp has helped develop reading comprehension, particularly in noting emotions. We should always connect the text to the learners' emotions and relations with others [2].

Another factor that may be attributed to the ineffectiveness of the AAp in improving noting emotion skill is that the selected Biblical stories might not be suited to improve this particular skill. The stories and activities might be interesting and emotion-arousing, but they were not designed to make the students aware of their emotions while the reading process was undertaken. This study reveals that the selection of stories for kindergarten is significant in developing and helping recognise one's emotions. In this connection, before reading a storybook, the teacher should consider the learners' interests that can enhance language and literacy skills [4, 37]. Selecting storybooks promoting social-emotional skills and values is also considered [14].

In addition, the result may also be attributed to the researcher's qualifications in implementing the MI-based activities. Although the researcher only received a class on multiple intelligences for one semester and a three-day seminar on developing the learners' multiple intelligences, it can be a factor why the AAp has no effect in noting emotions. Hence, it is not enough to undergo a seminar or class for a short time; instead, there must be adequate and appropriate training in order to equip the kindergarten teacher who will handle the reading class based on MI activities. This study indicates that the qualification of the reading teacher in kindergarten is very crucial in developing the comprehension skills of the young learners.

In *sequencing events*, the pre-test result obtained a mean of 1.2, and the post-test had a mean of 2.5. The computed t-value of the pre- and post-tests has acquired 3.60 with an effect size of 0.42, implying that the AAp is significant and has a large effect in developing the *sequencing of events*. This study indicates that reading comprehension exists after the group's treatment. As noted in the literature, sequencing events is an important skill in reading comprehension, and children at an early age need to acquire the skills to read and think sequentially. From the interview findings, "*MI-based activities help the kindergarten pupils engage more in reading activities using their skills and talents. They are more knowledgeable in sequencing events and can easily connect the previous events to their present*". This finding is related to Geary [22], who confirmed that children bring their previous knowledge to new text read or learned.

One probable reason why storytelling is effective in developing *sequencing events* is that good stories presuppose logical yet, at the same time, engaging plots. As the learners immersed themselves in the flow of the stories, they unconsciously learn to think sequentially and logically. The choice of stories used in the test surely had a good impact. Some stories could mislead the students to think in a non-logical and consequential way, but the researcher had ensured that the selected Biblical stories possessed a non-problematic and logically flowing plot. This was evident in the interview conducted in the study. Interestingly, the kindergarten teacher revealed that kindergarten pupils are more knowledgeable in sequencing events and can easily connect the previous events to their present. They can connect the plot within their inner story as they think and analyse the events in the story. One of the pupils said "*tulad ni Samaritan, tinutulungan ko din si mama na maglinis ng bahay namin*" (Like the Samaritan, I also help my mother in cleaning our house). This implies that sequencing events is crucial in developing learners' comprehension skills. As studied by Spivey [49], sequencing events is an important skill in reading, and children at an early age need to acquire this skill to read and think sequentially.

In *making predictions*, the pre-test has a mean of 2.1 and the post-test has a mean of 2.5. The computed t-value is 1.12 with zero effect size. This means that AAp is not significant and has no effect on developing reading comprehension, particularly for making predictions. The result could be the same reason for noting emotions. Another reason could be that making predictions requires a high level of cognition. This notion affirmed that making inferences or predictions is a complex skill [19]. As a result, more time is necessary to develop this complex skill. Similar to the study conducted by Blachowicz and Ogle [5] articulated that engaging the learners in a series of predictions can help them develop their reading knowledge, text, and comprehension. Making predictions is an essential strategy in the reading process [48]. Thus, predicting the stories read ensures that children build coherence and deepen reading comprehension. The teachers stated that the kindergarten pupils directly demonstrated an ability to make predictions. It suggests that children comprehend what they read because they imagine what lies beyond the story. They comprehend the reading because they have a positive attitude [44]. The study's result displays that sufficient reading time is essential to develop comprehension skills, particularly in making predictions.

Generally, AAp has a large effect size of 0.68. This figure implies that the AAp is significant and has a large effect on developing the four reading comprehension skills of the kindergarten pupils. The researcher believed that this large effect could be ascribed to all the MI-based activities, teaching materials, and aids utilised in developing comprehension skills during the implementation of the study. This corroborates the study of Abdulhamid Abdulkader, Gundogdu and Ali Eissa [1] that MI-based activities are productive tools in developing reading comprehension skills. As affirmed in the interview, the kindergarten teachers said that the AAp is highly effective in developing reading comprehension skills for the young learners. The participants showed great enthusiasm in learning to read and participated well in the class. Hence, the result of the study indicates that application of the AAp must be well prepared and organised in terms of the selection of the stories, teaching materials and tools for the kindergarten pupils.

The researcher cannot claim that the AAp can fully develop the four reading comprehension skills. However, the results clearly show that kindergarten pupils have improved their reading comprehension after implementing the AAp and adopting MI-based activities. As noted in the above literature, activating as many MI as possible is significant to develop reading comprehension skills [2]. This enormous view of MI theory is prominently associated with the philosophy and goals of the Colegio Anunciata, where the researcher is affiliated. Convinced and determined, the Colegio

Anunciata carries out its mission by providing quality learning school that will empower the learners to think and to articulate (verbal-linguistic), to analyse and to critic (logical-mathematical), to value and to appreciate (interpersonal-intrapersonal), to participate and to learn (bodily-kinesthetic), to sing and to chant (musical), to create and to enjoy (visual-spatial), to celebrate with nature (naturalist), to reflect and ponder (existentialist) simple situations in life. This signifies developing their intellectual, moral and spiritual capabilities. For this purpose, learning will be more appealing, attractive and important to all.

4. Conclusion

The study has shown that MI-based activities may improve the four comprehension skills of kindergarten pupils. With consistent and creative application of MI-based reading activities, the learners could display and grow with all their intelligence, leading them towards the fullness of life and social progress. The study of AAp has presented a preliminary possibility of harmonious composition of both MI theory and the education of Christian values. Not only do the pupils cultivate different elements of their intelligence, but they may also grow as Catholics who are aware and practice their faith. If developed further, the AAp may significantly impact Colegio Anunciata, where the researcher belongs, and positively contribute to Catholic education.

Although this study provided valuable insights into the effectiveness of reading comprehension, the data collected are insufficiently robust to draw definitive conclusions. The small sample size and limited research scope limit the strength of the findings. Therefore, more students will yield more reliable results. Although the t-test was employed to assess the pre-test and post-test, the researcher acknowledged that the normality assumption was only partially met. The pre-test data showed no significant deviation, while the post-test data showed light deviations. Thus, the T-test remains a valid method given the small sizes and the robustness to test the minor violations of normality. Hence, future studies may consider using non-parametric tests such as the Wilcoxon Signed Rank Test if normality is absent. Despite these deviations, the effect size of 0.68 supports the t-test in this analysis. In order to ensure the robustness of the findings, a mix of parametric and non-parametric tests may be used for future research. The following are several limitations that must be acknowledged.

- *Small sample size*: the research was conducted with only 10 kindergarten pupils, which is a limited sample size – this small number may restrict the applicability of the results to a broader population.
- *Duration*: this research was conducted in a short period of 45 days, which might not be sufficient to develop reading comprehension skills fully.
- *Limited context*: this research was conducted at Colegio Anunciata, which has a specific educational context and may not apply to other educational settings.

Therefore, it is recommended that AAp be applied and evaluated with a larger number of participants and over a longer period of testing. Other researchers may also provide activities that will prepare children physically and emotionally prior to the development of the cognitive aspect, like reading comprehension. A further recommendation is to consider the other local and contextual anecdotes when selecting stories.

As a final remark, the researcher believes AAp can be highlighted as a medium for developing the four reading comprehension skills utilising Biblical stories as a springboard and facilitated by MI-based activities.

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