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Research Article

Braindance and Children with ADHD: Improving Motor Coordination and Balance

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Abstract

This study showed the effectiveness of a 6-week adapted dance program to improve the motor coordination and balance of Filipino children with ADHD. This mixed-method study measured 30 children (ages 6 to 17 years old) who were purposively distributed into control and experimental groups to determine the significant differences in the motor coordination and balance scores during the pre- and post-tests using Henderson and Barnett's (2007) Movement Assessment Battery for Children-2. The MABC-2 contains eight tasks that challenge static and dynamic balance, manual dexterity, and ball skills. Each task is assessed primarily through task completion times (using a stopwatch) and success. Modified dance lessons based on Anne Green Gilbert's "Braindance" from her book, Brain-Compatible Dance Education, were used as an intervention to the experimental group throughout the study. Data were analysed using descriptive statistics and the independent T-test. Post-test results showed improvements in the motor coordination and balance skills of the experimental group. The participants exhibited a significant increase in the levels of their motor coordination and balance during the 6-week Braindance sessions as they performed better on the assigned tasks during each session. The results suggest that using a structured dance program that integrates different movement concepts and the Braindance can improve the motor coordination, balance, and focus abilities of children with ADHD.

Keywords

Braindance, Dance Intervention, Attention Deficit Hyperactivity Disorder, Adapted Dance

1. Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is the most prevalent neurobehavioral disorder in children and frequently lasts into adulthood [1]. It is characterized by developmentally inappropriate exhibitions of impulsivity, hyperactivity, and inattention and about 5.9–7.1% of children and adolescents have ADHD [1, 12]. The connection between ADHD and difficulties in motor performance has been the subject of extensive research for the past few years. ADHD frequently transpires with developmental coordination disorder (DCD) and their overlapping conditions are referred to as Deficits in Attention, Motor Control, and Perception (DAMP) [5-7, 9]. DCD is used for people with motor coordination problems that significantly impact their everyday lives by interfering with their ability to speak, be physically fit, and succeed academically [5, 11]. About 30-50% of children with ADHD also fit the criteria for DCD and compared to children with ADHD or DCD alone, they show a higher chance of motor and perception dysfunctions and negative

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psychosocial conditions [7, 14].

Regardless of a child's difficulties in motor performance, ADHD itself has a substantial impact on their quality of life [7, 9]. There is strong evidence that people with ADHD and DCD—which might include emotional and psychosocial challenges—perform poorly in school and other social situations [7, 9, 11, 14]. Since motor development is a complex process, it requires monitoring of many different areas, including fine and gross motor abilities, balance, body schema, and spatial organization [7, 9]. Studies also suggest that enhanced motor performance may develop a child with ADHD's self-concept and self-esteem, which affects his or her confidence when engaging in physical activities.

Children with ADHD benefit from physical activities that involve careful attention to body movements by limiting the occurrence of the symptoms of DCD [3, 13]. For example, a 20-minute aerobic exercise has shown progress in the gross motor skills development in children with ADHD ages 8-10 years old [11, 16]. Other researchers suggest that a 6-week aerobic activity can improve the attention, cognition, and social skills of children with ADHD [2, 14, 16]. Physical activities done for 45 minutes, three times a week for ten consecutives weeks has also shown significant improvements in the muscular capacity, motor skills, and attention of these children [8, 14, 16].

1.1. Dance and ADHD

Dance is an example of an aerobic activity that pays careful attention to body movements [17]. It does not only promote physical wellness but also enhances brain development and the rewiring of the brain neurons responsible for muscular control and movement [5, 7, 17]. Dance also improves the control of impulses and hyperactivity, which can result in developing his/her fine motor skills and balance [3, 11]. This study analyzed the effectiveness of an adapted dance program as an effective intervention to improve motor coordination and balance of Filipino children with ADHD. Since there are limited opportunities for these children to participate in dance classes in the Philippines to address their motor coordination and balance difficulties, modifying current dance programs to create lessons catered to address the abilities and needs of children with ADHD may lead to significant improvements in the motor performance, based on the theoretical premise that movement patterns enhance neural integration and development [4].

Braindance is a dance program that integrates brain and body functions, promoting physical and cognitive development [5, 12]. It encompasses several key principles and components: (1) Developmental Movement Patterns, (2) Neuroplasticity, (3) Holistic Approach), (4) Therapeutic Objectives, (5) Sequential and Repetitive Practice, (6) Adaptability and Inclusivity, and (7) Research and Evidence-Based Practice [5, 18].

1.2. Objectives of the Study

The study analyzed the effectiveness of Braindance as an effective intervention to improve motor coordination and balance of Filipino children with ADHD. More specifically, the results of the study examined if there were significant differences in the pre- and posttests of motor coordination and balance between the control group and experimental group. This study is grounded in the developmental theory and neuroplasticity with broad applicability and adaptability for diverse populations [15, 17]. Based on the understanding that developmental movement patterns are critical for brain and body integration, the study aims to provide opportunities to improve motor performance of Filipino children with ADHD through an inclusive and integrative approach [2, 5, 12, 16, 18]. This will help the parents gain understanding and enhancing physical and cognitive development of their children through dance.

2. Materials and Methods

This study utilizes a mixed methods approach, employing a two-group control design to ensure high internal validity. The control and experimental groups underwent pre-test assessments, including the Movement Assessment Battery for Children-2 (MABC-2) and the NICHQ Vanderbilt Assessment (NICHQ VAS) [5, 8]. The experimental group participated in a 6-week Braindance program as part of the intervention. After the intervention, both groups were administered the same assessments to determine post-test results. Given that the study involved young children diagnosed with ADHD, parents were required to complete a consent form before the pre-test. The form included details about the research, assurances regarding the confidentiality of personal information and observations made during the intervention, potential risks, and the process for communicating results.

2.1. Participants

A total of 30 Filipino children (male and female), aged 6 to 18 years and diagnosed with ADHD, were selected through purposive sampling. These participants were recruited from the Pediatrics Department of a private hospital, a therapy center in Quezon City, and a private school in Metro Manila, Philippines. The children were randomly assigned to either the control or experimental group.

Among the 30 participants, 13 were diagnosed with the predominantly inattentive subtype (PIS) of ADHD, 12 with the predominantly hyperactive subtype (PHS), and 5 with the combined inattentive and hyperactive subtype (CIHS). Table 1 details the distribution of participants across the control and experimental groups, categorized by age and ADHD subtypes.

Table 1. Composition of the control group and experimental group by age and ADHD subtype.

Subtype	GROUP ASSIGNMENT						TOTAL	
	Control Group			Experimental Group			Control Group	Experimental Group
	6-9 y/o	10-13 y/o	14-17 y/o	6-9 y/o	10-13 y/o	14-17 y/o		
PIS	5	1	0	2	1	2	6	5
PHS	6	1	0	2	4	0	7	6
CIHS	2	0	0	4	0	0	2	4
TOTAL	13	2	0	8	5	2	15	15

This showed that most of the children who participated in the study have the predominantly inattentive subtype (PIS).

2.2. Research Instruments

The following were the research instruments used to gather data in the study:

(1) The NICHQ Vanderbilt Assessment Scales (VAS) are pre-validated questionnaires suggested by the Head Developmental Pediatrician of one of the private hospitals in Quezon City. These served as demographic profiles and baseline data for the ADHD subtypes of all the participants [9]. The VAS has two kinds of forms: Parent Informant and Teacher Informant. The forms were completed twice by the parent and the teacher as follow-up assessments to monitor any changes in the variables after the intervention period. Printed forms were given to the parents/guardians and teachers of the participants to determine the levels of inattention, impulsivity, and hyperactivity of the child both at home and in school. Both forms required the informants (parent and teacher) to rate the variables that show symptoms of inattentiveness, impulsivity, hyperactivity, and depression/anxiety levels from 0 (Never) to 3 (Very Often) of the children. School performances were also rated on a scale from 1 (Excellent) to 5 (Problematic). As for the reliability and validity of the VAS, the Teacher Rating Scale has a specificity of 84% and sensitivity of 69%, compared to the Parent Rating Scale, which only has a 63% specificity and 83% sensitivity.

(2) The Movement Assessment Battery for Children-2 was administered as pre and post-tests in this study. This assessment measured the participants' levels of motor coordination and balance. It is a two-component motor-ability assessment consisting of an individually administered standardized performance test and an everyday functioning parent/teacher report checklist [8]. Eight movement tasks are divided into three motor subtests: (1) manual dexterity, (2) aiming and catching, and (3) balance [8]. These tasks yield ten raw scores, which translate into standard scores. The standard scores are then rounded down when they are below average and up when above average. Higher standard scores are obtained when a child performs best during each subtest. The total score of MABC-2 is the summary of the standard scores of all eight items. The MABC-2 uses a "traffic light system – red, amber, green" to serve as a guide to determine the movement difficulties of the participants. Each color represents a percentile range corresponding to the participants' motor level [8].

(3) The validity and reliability of the MABC-2 imply that this could be a useful instrument to assess a child's motor coordination level [8]. The MABC-2 Test's internal consistency was $\alpha = 0.90$ [8]. The intraclass correlation coefficient for the overall score was 0.97, indicating high test-retest reliability [8]. The MABC-2 Test detected a treatment effect of small to medium significance. The minimal important difference (MID) values ranged from 2.36 to 2.50, while the minimal detectable change (MDC) was 0.28 points [8]. Apart from balance, every subscale showed sufficient validity to distinguish between groups of kids whose physical performance had either stabilized or improved.

2.3. Procedure and Data Collection

The researcher conducted a parent orientation and pretest a week before the intervention period. During this time, the researcher informed the parents/guardians the details and what to expect before, during, and after the study. They were also asked to accomplish the NICHQ Vanderbilt Assessment Scales to determine the participants' subtype or level of ADHD. The same form was given to the participants' teachers to know his/her behavior and performance in school. These variables are significant in determining the level of inattention, impulsiveness, and hyperactivity, as well as their anxiety/depression and school performance, of the participants both at home and in school. A record of their observations and prescribed medications for the

past six months was also obtained from their developmental pediatricians to determine the socio-behavioral background of each participant. Consent Forms were also collected by the researcher who started making the demographic data.

During the pretest, the MABC-2 assessment was conducted. A total of eight tasks recommended by Henderson, Sugden & Barnett were given to the participants: placing pegs, threading lace, and tracing patterns (manual dexterity); one/two-hand catch and throwing bean bags into a target (ball skills); and one-leg balance, hopping on spots & heel-to-toe walking (static and dynamic balance) [5]. These tasks are based on MABC-2's Age Bands 1 & 2 for ages 3-6 and 7-12 years old, respectively. However, there was one (1) participant who was 17 years old and was not included in the age bands. The researcher modified the tasks from Age Band 2 (7-12 years old) to fit his motor skills. All tasks were demonstrated first by the interns/teachers, and 3 practice trials were given to each child before performing the actual task. The pretest lasted 20-45 minutes, depending on the ages of the participants. Scoring was done by the interns and SPED teacher, following the scoring system of each assessment tool.

A week after the pre-test, the Braindance sessions were administered to the experimental group. They were held twice a week, with one hour duration per session for six weeks. This was patterned in the research conducted by Redman on the effectiveness of dance as a treatment for students in an inclusive public school diagnosed with ADHD [7]. In this research, however, the duration of the intervention was reduced from eight weeks to six weeks, mainly due to the participants' limited availability. After the 6th week, the same parent/guardian and teachers who previously answered the initial parent and teacher questionnaires completed the Vanderbilt Assessment Follow-Up – Parent and Teacher forms. Responses and ratings were then compared in the experimental group to assess their motor coordination and balance improvements. The post-test was conducted a day after the last day of the dance sessions using the same MABC-2 protocols. This ensured that the data measured during the post-test the day after the intervention were as accurate to their current skills developed.

3. Results

The table below presents the total scores and corresponding traffic light system colors of the participants in the control and experimental groups during the pretest and post-test.

The analysis of the data for the results of the pre- and post-test scores were done using the Statistical Package for the Social Sciences (SPSS) tool. The test scores were analysed using the independent T-test with a significant level of $p = <0.05$ to determine whether there was a statistically significant difference between the means of the MABC-2 total post-test scores of the control group and the experimental group.

Table 2 shows that most of the participants in the control group have the amber traffic light color as their motor coordination and balance profile during the pre and post-tests. Since most of them have Predominantly Inattentive and Predominantly Hyperactive Subtypes, they displayed difficulties executing the motor coordination and balance tests [1]. The researcher observed that they were not able to perform well during the one or two hand catch and throwing as well as have difficulties in balancing or hopping on one leg. It was noted that the participants displayed lack of motivation to continue or finish the activities due to not being able to perform the tasks properly. Because they did not undergo the Braindance sessions, the total scores of the post-test were just the same. It was also observed that since they were already familiar with the tasks during the pretest, the participants in the control group did not perform well again the activities during the post-test. Even if they were given 3 practice trials, most of them were just playing with the materials used in the tests thus they did not able to execute the tasks properly. So when it was time to do the actual activity, most of them did not score higher than their pretest scores.

Table 2. *Motor coordination and balance cores and corresponding MABC-2 traffic light color.*

CONTROL GROUP				**EXPERIMENTAL GROUP**			
PRETEST		**POST-TEST**		**PRETEST**		**POST-TEST**	
Score	**Color**	**Score**	**Color**	**Score**	**Color**	**Score**	**Color**
65	Amber	65	Amber	65	Amber	70	Green
61	Amber	61	Amber	65	Amber	70	Green
61	Amber	61	Amber	65	Amber	69	Green
60	Amber	60	Amber	65	Amber	65	Amber
60	Amber	60	Amber	62	Amber	68	Green

CONTROL GROUP				EXPERIMENTAL GROUP			
PRETEST		POST-TEST		PRETEST		POST-TEST	
Score	Color	Score	Color	Score	Color	Score	Color
59	Amber	59	Amber	61	Amber	65	Amber
59	Amber	59	Amber	60	Amber	69	Green
58	Amber	58	Amber	59	Amber	68	Green
58	Amber	58	Amber	59	Amber	63	Amber
58	Amber	58	Amber	59	Amber	59	Amber
58	Amber	58	Amber	58	Amber	68	Green
58	Amber	58	Amber	58	Amber	58	Amber
53	Red	53	Red	55	Red	63	Amber
51	Red	51	Red	54	Red	64	Amber
51	Red	51	Red	54	Red	64	Amber

*Traffic Light System: Red – <5th percentile = significant motor difficulty, Amber – 6-15th percentile = Careful monitoring suggested (minor motor difficulties), Green - >15th percentile = No motor difficulty

On the other hand, the experimental group displayed a variety of traffic light colors from pretest to post-test. Most of the motor coordination and balance profiles of the participants during the pretest is amber. Even if most of the participants have Predominantly Hyperactive and Combined Inattentive/Hyperactive Subtypes, the participants showed improvements with their total test scores due to the Braindance intervention given. They consistently attended the dance sessions and engaged themselves well during the dance activities. These resulted to significant improvements in their performance during the MABC-2 post-test. The researcher noted improvements in their execution of the ball skills and static/dynamic balance activities. The participants also displayed better impulse control and focus which contributed to their performance of the tasks. The participants who were in the red traffic light color during the pretest reached their "milestone" since their total test scores from the pretest to the post-test displayed a significant increase. They were monitored well by the researcher during the intervention to help them improvement their total test scores and move on to the next traffic light color.

Based on the test scores and the researchers' observations, the Independent *T*-test for two independent groups showed a difference between the motor coordination and balance of the control group and experimental group after the Braindance sessions. The 15 participants who took the Braindance sessions (M= 65.53, SD= 3.78) compared to the 15 participants in the Control Group (M=58.00, SD= 3.78) showed a significant difference in their motor coordination and balance scores at t (30) = -5.46024, p= < 0.0001.

4. Discussion

This six-week study suggests that incorporating a structured dance program, such as Braindance, as an adjunct intervention can enhance motor coordination and balance in Filipino children with ADHD. The pre-and post-test results indicated significant improvements in the test scores of the experimental group throughout the study. The scores increased, and the traffic light color schemes on the MABC-2 checklist changed, highlighting positive changes in performance:

The data of the results show that most of the participants in the control group had the amber traffic light color as their motor coordination and balance profile during the pre- and post-tests. Since most of them have Predominantly Inattentive and Predominantly Hyperactive Subtypes, they displayed difficulties executing the motor coordination and balance tests. The researcher observed that they could not perform well during the one/two hand catch and throwing and had difficulties balancing or hopping on one leg. Participants were not motivated to continue or finish the activities due to their inability to perform the tasks properly. Because they did not undergo the Braindance sessions, the post-test scores were the same. It was also observed that since they were already familiar with the tasks during the pretest, the participants in the control group did not perform well against the activities during the post-test. Even if they were given three practice trials, most of them were just playing with the materials used in the tests thus they were not able to execute the tasks properly. So,

when it was time to do the activity, most did not score higher than their pretest scores.

The experimental group, on the other hand, displayed various traffic light colors from the pretest to the post-test. Most of the motor coordination and balance profiles of the participants during the pretest are amber. Even if most participants have Predominantly Hyperactive and Combined Inattentive/Hyperactive Subtypes, the participants showed improvements in their total test scores due to the Braindance intervention given. They consistently attended the dance sessions and engaged themselves well during the dance activities. These resulted in significant improvements in their performance during the MABC-2 post-test. The researcher noted improvements in executing the ball skills and static/dynamic balance activities. The participants also displayed better impulse control and focus, contributing to their task performance. The participants in the red traffic light color during the pretest reached their "milestone" since their total test scores from the pretest to the post-test showed a significant increase. The researcher monitored them well during the intervention to help them improve their total test scores and move on to the next traffic light color.

4.1. Motor Coordination: Actual Motor Performance vs Perceived Motor Competence

There is no significant relationship between actual motor performance and perceived motor competence between the controlled and experimental groups. Children with ADHD performed poorly on the Movement Assessment Battery for Children but overestimated their motor competence [4, 6]. In this study, the participants in this experimental group were given Creative Dance sessions for six weeks, two times a week as part of their Braindance intervention. Besides conducting the lessons, the researcher also observed each participant and focused on their specific motor skills and focus abilities as part of the adaptation process of each dance activity. As the sessions progressed, the actual performances of the participants gradually changed. They were now able to execute simple to intricate movements with minimal impulsive behavior. Also, they were able to exhibit motor control, especially with their gross motor movements. At the end of the intervention period, the researcher asked them again about how they perceived their motor skills after the dance sessions; they now have positive perceptions of dancing.

4.2. Balance, Focus and Spatial Awareness

Distraction and inattentiveness might have internal or external causes for children with ADHD [12]. The most frequent problem with attention is filtering out irrelevant stimuli, which leads to sensory overload [10-12]. Most ADHD children tend to get distracted by external factors thus becoming intrusive into his or her peers' space [6]. By undergoing Braindance exercises during the intervention period, the participants in the experimental group focused on improving their spatial awareness by having them stay inside a circular or square area on the dance floor while executing the dance moves shown by the instructor. These exercises not only helped them focus more on the instructions given by the instructor but practice their balance skills since they danced only on their small round spots. This developed their control over their impulses.

The inability to control one's urges is the researcher's primary concern with the experimental group participants. Since most of them exhibited these behaviors during the pretest, the researcher needed to develop different strategies to sustain their attentiveness and motor control. She introduced the concept of "*Flow and Effort"* to make the participants mindful of their movement and focus on the tasks given to them. The goal of this Braindance exercise was to promote constraint and physical control that will help them balance while dancing [5]. Breathing exercises coupled with Gilbert's *"tense and release"* movement activities were given to the participants to accomplish the said goal. Because it required a lot of work to control their impulsivity, most participants found it challenging to complete the Flow tasks. During the 6-week intervention period, most of them gradually show control, especially during the Exploring the Concept part of the session. Since the researcher was keen on details, she ensured each participant understood how to execute each concept. This practiced the participants' control of excessive movements, which decreased their impulses to overuse the dance steps which caused instability while dancing. By the end of Week 6, almost 90% of them can already restrain their bodies from doing excessive movements and perform a continuous set of steps to make a dance. When asked how they felt after each session, the participants responded positively. They said it felt particularly good to finally control their bodies since they could see themselves performing a "real" dance.

These findings suggest that Braindance is an effective adjunct intervention for improving motor coordination and balance of children with ADHD. The test results demonstrated behavioral changes in these domains, directly influencing participants' performance during each session. The observed improvements underscore the potential of dance as a beneficial therapeutic approach alongside conventional ADHD treatments [2, 12, 17, 18].

5. Conclusions

Braindance has been demonstrated to be an effective adjunct intervention for children with ADHD, whether used independently or in conjunction with other current interventions [7]. This effectiveness was clearly reflected in the results, which showed significant improvements in the mean motor coordination and balance scores of the experimental group, as measured by the MABC-2 post-test. The MABC-2 traffic light system revealed that 20% of participants who initially fell in the red zone (indicating a high level of motor difficul-

ties) shifted to the amber zone (indicating minimal motor difficulties) after the intervention. Similarly, 46.66% of those originally in the amber zone moved into the green zone, representing minimal to no motor difficulties.

These findings confirm improvements in the motor coordination and balance of the experimental group following the Braindance intervention. The positive outcomes were noted by both the participants' doctors and parents, who provided favorable feedback and recommendations regarding the study. The success of the intervention also impressed the clinicians present, who became more open to the idea of Braindance as a viable physical activity option for children with ADHD. They recognized that Braindance is not only cost-effective but also highly accessible.

However, due to the limitations encountered in this study, the researcher suggests that future studies focus on the alternative outcome areas previously discussed.

It is recommended that future researchers recruit participants from special education (SpEd) schools, as these institutions have sufficient students who can be included in such studies. The availability of participants from SpEd schools is more convenient, as the students attend the facility year-round for school activities and adjunct therapies. Additionally, it would be easier to recruit participants with formal diagnoses, given these schools' direct connections with hospitals or clinicians.

Given that the intervention period in this study was limited to six weeks, extending the duration would likely yield more beneficial results. The researcher observed that the participants' motor skills and focus abilities showed noticeable improvement only towards the end of the intervention. A longer intervention, potentially extending to 12 weeks, could produce more pronounced and significant outcomes.

Finally, the cost and accessibility of the MABC-2 should be carefully considered in future research. Although the MABC-2 can be purchased in the U.S. (either online or in physical stores), it is relatively expensive. In this study, the researcher had to modify some equipment for the tests due to the unavailability of certain materials in the Philippines. Future researchers may consider sourcing more affordable kits online or modifying the test according to the study's objectives. However, any modifications to the test should be validated before implementation to ensure reliability and accuracy.

Abbreviations

ADHD	Attention Deficit and Hyperactivity Disorder
CIHS	Combined Inattentive and Hyperactive Subtype
DCD	Developmental Coordination Disorder
MABC-2	Movement Assessment Battery for Children-2
NICHQ-VAS	NICHQ Vanderbilt Assessment
PHS	Predominantly Hyperactive Subtype
PIS	Predominantly Inattentive Subtype

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Author Contributions

Camille Castro is the sole author. The author read and approved the final manuscript.

Data Availability Statement

The data that supports the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy of ethical reasons.

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Conflicts of Interest

The author declares no conflicts of interest.

Appendix

Braindance is a series of body-brain exercises that are based on the normal developmental movement patterns that healthy adults experience in their first year of life. Developed by Anne Green Gilbert in 2000, it is based on early movement patterns and involuntary reflexes that build our brain and body. Eight basic movement patterns of early human development make up Braindance, which "rewires" the central nervous system for proper behavior and attention, sensory-motor development, and other purposes (Gilbert, 2006). The basic movements are as follows:

(1) Breath – Movements that focus on breathing deeply
(2) Tactile – Movements that allow the body to “wake up the skin” for sensory development
(3) Core-Distal – Movements that strengthen the core and extremities of the body, develop spatial awareness on self-spaces
(4) Head-Tail – Movements that focus on developing the neurological system (brain and spinal cord), enhance the connections between neurons for better synapses

(5) Upper-Lower – Movements that focus on the upper and lower bodies for coordination
(6) Body-Side – Movements done on the right and left side of the body. Includes horizontal eye tracking
(7) Cross-Lateral – Movements are done across the midline, which connects the upper and lower body quadrants. Includes vertical eye tracking
(8) Vestibular – Movements that develop balance, which incorporates swings, tips, spins, and rolls in all directions.

By moving through these fundamental patterns, children reorganize their brains. This helps prepare them for learning and doing proper behavior and social skills.

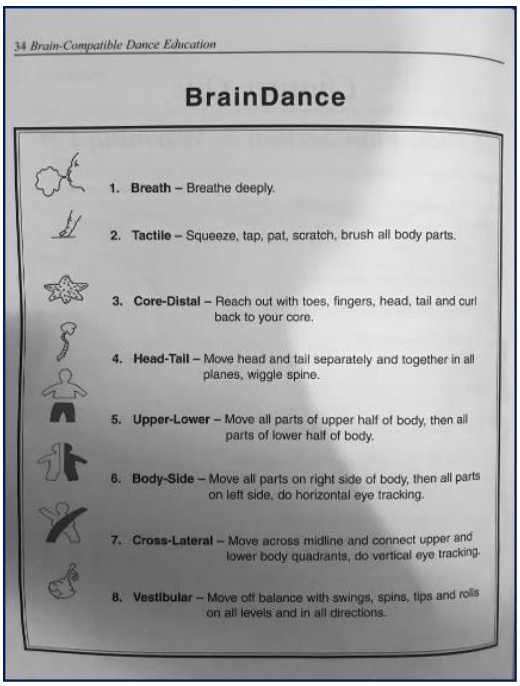

Figure 1. *Braindance movement patterns (Source: Gilbert, 2006, p. 34).*

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Biography

Camille Castro is a professor at the University of the Philippines, Diliman, Department of Physical Education, College of Human Kinetics. She completed her Master of Science in Human Movement Science (Exercise Science) and Bachelors in Sports Science from the same institution in 2017 and 2010 respectively. Ms. Camille specializes in Adapted Physical Activities and Dance Education. Through her extensive dance background, she was able to receive her certification in teaching Braindance and started her own dance school for children with special needs. She also worked as an early educator during her first few years of teaching which was the impetus of her teaching career.

Research Field

Camille Castro: Dance movement therapy, research field – dance education, research field – adapted physical education, research field - physical activities