

Playing Percussion to Develop Physical-Motor and Emotional Skills of a Cerebral Palsy Child

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Abstract

Cerebral palsy is derived from a word “cerebral”, meaning a brain, and “palsy”, meaning disability. Cerebral palsy is a disability condition influencing movements and body positions of an individual. This research aims to analyze the influence of physical-motor and emotional skills of a child with cerebral palsy at before, during, and after being intervened to play percussion. This research is a single-subject experimental research. The finding showed that playing percussion was proven able to improve the physical-motor and emotional skills of a cerebral palsy child. The average result on baseline 1 period, done within 5 sessions, was 38%. It improved during the intervention period that was done during 5 sessions. It was 61%. The improvement could be seen on the baseline 2, done within 6 sessions. It was 77.5%. Therefore, there was significant improvement between before and after intervention with 39.5%. This research is expected to be the basic research in developing instruments to develop learning or skills for a cerebral palsy child.

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INTRODUCTION

Children with special needs are children with their specific-different characteristics compared to common children without always showing their mental, emotional, or physical incapability. One of the characteristics of children with special needs, especially children with neurological disabilities, could be seen on a child with cerebral palsy.

Ikkal (2018) states that education for children with special needs can be done by preparing them with certain competent skills. Children with special needs do not only must have knowledge but also skills that could be used in their further lives.

Ismunandar (2018), Pratiwi (2017), and Azizah (2005) explained that cerebral palsy is a stiff condition occurred in the brain and influences human body movements. According to Illavarson (2018) and Prapdita (2017), the term cerebral palsy is a description of a movement set disorder, human posture, and tonus that are non-progressive. It has different chronic and is caused by injury in the central nervous system during the early growth period. Tjasmini (2016) argued that cerebral palsy is a hindered condition of a child's motor functions due to brain disorders.

Physical-motor growth is coordination among eyes, hands, feet, and balances (Rahayu, 2015); a development of human movement control through a coordinated action arranged by nerves, muscles, and brain (Hakim, 2013); and a body movement control to move from a place to another place (Riyadi, 2018). Sausan (2016) explained that the referred motor is all matters concerning to human body movements. The purpose of improving physical-motor for a child with cerebral palsy as stated by Utomo (2013) is to assist children in improving their motor functions, preventing deformity, and adjusting emotion and education so they will need lesser assistance from other people. Then, they are expected to be independent in carrying out their daily activity lives.

Emotion is defined as a strong feeling, covering hatred, fear, anger, compassion, joy, and sadness. Nugraheni (2017) and Riana (2009) defined emotion as physical activity, consisting of pleasant and unpleasant reactions toward an event or a certain mental condition. Deliana (2017) stated that the emotional development of children is started egocentrically from themselves. They see anything from their perspectives to their individual concepts, self-monitors, and gradually heading to interactions with other people. Emotion is an important matter for early childhood children because it helps them focusing their attention and developing their socialization (Martani, 2012). It is strengthened by Musi's (2017) opinion that emotion has important roles in children's lives because they could obtain useful experiences to keep their social lives with their surroundings.

Playing is a spontaneous activity done by using or not using any tools to provide joys for children. Mulyani (2018) argues that playing is a joyful activity to relieve stress suffered by individuals in daily lives. Pratiwi (2017) explains that playing is an activity done to get any incurred enjoyment without considering the final consequences. Playing is an activity consisting of repeated responses only for functional enjoyment (Abidin, 2009) and cannot be separated from early childhood children. Zaini (2015) argued that playing is a joyful activity done voluntarily without any pressures or intimidation externally, or any obligation. It is a volunteer activity without pressure or acknowledgment expectations (Budiarti, 2007).

Percussion is a music instrument hit by a club or other objects to produce sounds. Banoe (2003) said that percussion is an instrument that must be hit, shook, or beaten to produce sounds. Blade (1992) explained that percussion is an instrument that its original sound produced by the instrument material or produced by its membrane. Essentially, playing percussion is to play objects that could produce sounds because of being hit, rubbed, beaten, or by any means to create vibrations of the instrument.

This research was initiated by a preliminary observation result at Bina Ummah

Integrated Islamic Preschool. There were found children with special needs, such as cerebral palsy. According to the observation results, there were not any specific treatments for the children. There was only a shadow teacher who was not the expert. It would surely influence the conditions of children with special needs. They should have been treated specifically based on their needs. Sadly, there was no teachers who could handle such children.

Previously, there was a research done by Hermawan (2013) who found that percussion music therapy for a cerebral palsy child influences the development of the children's motor. It could be seen when children played angklung by shaking them. Automatically, their stiff hands would be relaxed. There was another study done by Rahman (2013) that providing children to play drums could improve their motor skills, especially for the accuracy and durability aspects of children with cerebral palsy.

Both studies discuss the attempts to improve the motor skills of a cerebral palsy child through playing percussions. This research discusses the effectiveness of playing percussion toward the physical motor and emotional skills of a cerebral palsy child. The applied percussion type was a snare drum. It was because of the percussion's simplicity to play by children aged from 2 years old.

This research aims to analyze the influence of physical-motor and emotional skills of a child with cerebral palsy at before, during, and after being intervened to play percussion. The benefit of this research for science is to be the basic research in developing instruments to improve the learning and the children's skills. For society, this instrument could be used for learning or improving the skills of a cerebral palsy child.

METHOD

This research is an experimental research with a single subject approach as proposed by Christensen (2001). Creswell (2016) designed a single research subject by A-B-A design.

In this research, the subjects' initial skills in performing motor movements and emotions were observed, such as accuracy, durability, and emotion regulation while carrying out the activity. The subjects consisted of a child with cerebral palsy who went to Bina Ummah Integrated Islamic Preschool in Cirebon. Their initials were H, a 7 year and 6-month-old male student. The independent variable is playing percussion while the dependent variable is physical-motor, especially fine-motor and emotional skills.

The steps in this research are mainly grouped into three stages based on A-B-A research design. The stages cover baseline-1 phase (A-1), intervention phase (B), and baseline-2 phase (A-2). The techniques of collecting data were observation, field note, documentation, expert diagnosis-based assessment result, parent-informed consent, home teacher, and shadow teacher subject.

RESULTS AND DISCUSSION

Baseline 1 (A-1) Condition

The baseline 1 was done five times on November 29, 2019, and December 2 until 5, 2019. Physical-motor and emotion skill data of the baseline 1 condition are shown in Figure 1

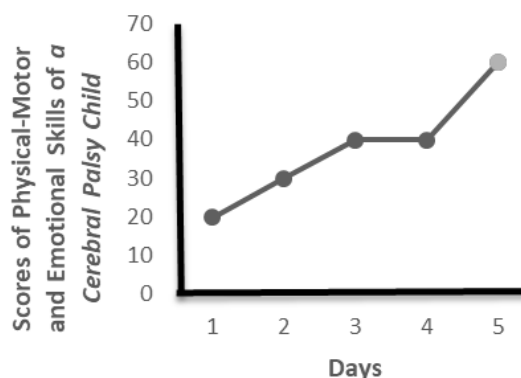


Figure 1. Physical-Motor and Emotional Skills of a Cerebral Palsy Child in Baseline 1

Figure 1 shows the highest percentage of physical-motor and emotion of the child was obtained on the fifth day. It was 60%. Then, the second position was 40% on the third and fourth days. On the second day, it was obtained 30% while on the first day it was 20%. The average

score of baseline 1 (A-1) was 38%. The results explain the child's skills on each variable, started from skill to hold the percussion stick, durability to play by hitting the percussion, the accuracy of the hits while playing the percussion, and skill to regulate his emotion. Dealing with the accuracy of holding the percussion stick on baseline 1, during five meeting times, the scores respectively are 1, 2, 3, 4, and 4 with the average score of 2.8.

Intervention Condition (B)

The intervention condition was done by providing the treatment or aid to hold the stick, to have durable hands in hitting the percussion, to have the proper hitting accuracy based on the patterns, and to suggest the child regulating his emotion so he could act based on the situation and condition. The intervention was done five times, on December 6, 9, 10, 11, and 12, 2019, at Class A Smart of Bina Ummah IIP. The observation data of physical-motor and emotion skills in the intervention period during 5 days could be seen in Figure 2.

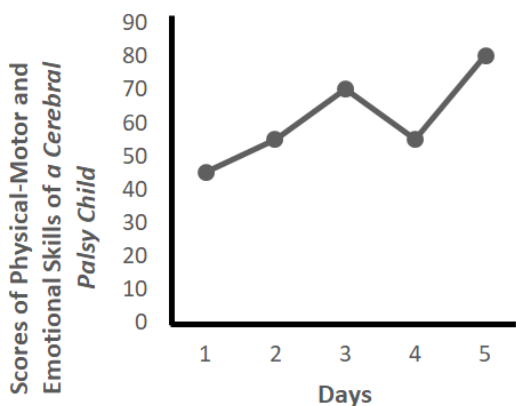


Figure 2. Physical-Motor and Emotional Skills of a Cerebral Palsy Child in the Intervention (B)

Figure 2 explains that on the first day, the subject's skill was 45%. Then, it improved on the second day to 55%. On the third day, it improved to 70%. Then, on the fourth day, it decreased to 55% and it improved again to 80% on the fifth day. It was the highest percentage score of the skill. Dealing with the skill to hold percussion stick on the intervention step (the treatment), it was done within five meeting

times. The children obtained scores: 3, 3, 4, 5, and 5 with average score is 4.

Baseline 2 (A-2) Condition

The baseline 2 (A-2) condition was done within 6 sessions per day, started from December 13 until 20, 2019. This activity had a purpose to find out the physical-motor and emotional skill of a cerebral palsy child after being intervened. After the observation, the physical-motor and emotion skills on the baseline 2 condition during 6 days could be seen in Figure 3.

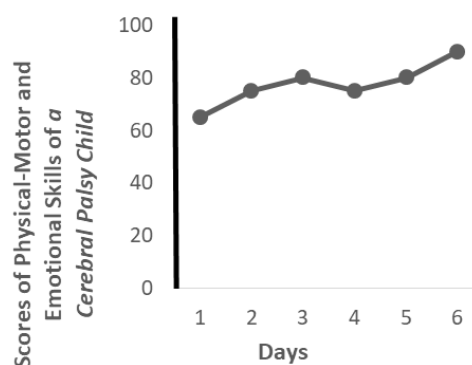


Figure 3. Physical-Motor and Emotional Skills of a Cerebral Palsy Child in Baseline 2

Figure 3 shows the highest achievement was obtained on the last day or the sixth day. It was 90%. The second-highest achievement was obtained on the third and fifth days. It was 80%. Then, 75% was found on the second and fourth days. 65%, the lowest one, was found on the first day. Dealing with the accuracy of holding the percussion stick in baseline 2, within 6 days, the subject obtained scores respectively: 5, 5, 5, 5, and 5. From the scores, the average score is 5

The Analysis in the Condition

a. The Estimation of the Direction Tendency

The estimation of the direction tendency is an improvement occurred in the baseline 1 or in the intervention period. It improved again in baseline 2. Further clarification of the direction tendency estimation of the analysis in the condition for the physical-motor and emotional skills as shown in Figure 4.

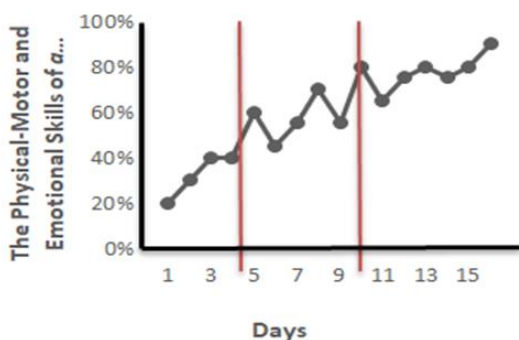


Figure 4. Estimation of the Physical-Motor and Emotional Skill Direction Tendency in Baseline 1, Intervention, and Baseline 2

b. The Stability Tendency

If the stability percentage is between 85% - 90%, then it is categorized as stable. Meanwhile, if the stability percentage is under 85%, then it is categorized as unstable (variable). The stability tendency of the analysis in the condition for the physical-motor and emotional skills is presented a stright vertical line. The summary of such a condition for the physical-motor and emotional skills of a cerebral palsy child could be seen in Table 1.

Table 1. Summary of the Analysis Result in a Condition for the Physical-Motor of a Cerebral Palsy Child

Conditions	A-1	B	A-2
The condition length	5	5	6
The Estimation of the Direction Tendency	/	/	/
	(+)	(+)	(+)
The stable tendency	(unstable)	(unstable)	(unstable)
	(40%)	(40%)	(66.67%)
The data-trace	/	/	/
The stability level and interval	Variables	Variables	Variables
	4 - 12	9 - 16	13 - 18
The changing levels	12 - 4	16 - 9	18 - 13
	(8)	(7)	(5)

The Analysis among the Conditions

To find out the stability tendency of the physical-motor and emotional skills of a cerebral palsy child could be seen in Figure 5.

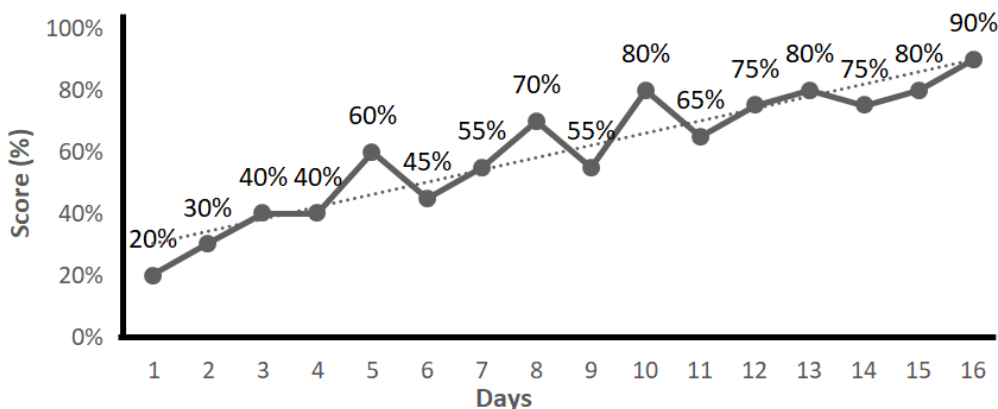




Figure 5. Tendency of the Physical-Motor and Emotional Skills

The summary of such a condition for the physical-motor and emotional skills of a cerebral palsy child could be seen in Table 2.

Table 2. The Analysis Result Summary among the Conditions

The compared conditions	A-1: B	B: A-2
The numbers of the variables	2	
The direction changes and the effects	 (+) (+) Positive	 (+) (+) Positive
Stable changes	Variable to variable	Variable to variable
Overlapping percentage	0%	

From the data analysis result in the condition and the analysis results among the conditions, it could be seen in the baseline 1 condition (A-1), the physical-motor and emotional skills of a cerebral palsy child are low. During providing the intervention (B), the physical-motor and emotional skills of the child tended to improve. Then, after being intervened in the baseline 2 (A-2) condition, the physical-motor and emotional skills of the child kept improving and could remain still after the intervention was stopped.

The empirical data shows the improvement of the subject among before, during, and after the intervention through playing percussion. It was found to have improvements. The level of the physical-motor and emotional skills of the subject before the intervention or in baseline 1, by providing 5 sessions in a day, obtains an average score of 7.6 or 38%.

In the intervention period, by being treated to hold the percussion stick correctly, to hit the percussion, to be durable in hitting the percussion, and to regulate his emotion, the skill was improved with an average score 12.2 or 61%.

Meanwhile, in the baseline 2 or the post-test, the average score of the physical-motor and emotional skill is 15.5 or 77.5%. Therefore, there was significant improvement between before and after intervention with 39.5%. The implementation of playing percussion for a cerebral palsy child in the preschool has become a spotlight. There is also a study by Hermawan (2013) who stated that a percussion music therapy for a cerebral palsy child influences his motor development. It could be seen when a child holding a stick. Another study was done by

Rahman (2013) who explained the intervention of playing drum to improve children's motor skills. It is proved to have positive influences toward the motor skill improvement of the spastic-typed cerebral palsy children. A study done by Emilia (2014) found that there was an improvement of the rough motor of children after being intervened to play percussion. Similar results as done by Hatampour (2011) showed the effects of playing music could develop and keep the children's joint and muscle functions to improve their fine and rough motor control coordination. The results are consistent with study done by Hertha (2017). It found that providing music intervention for children with special needs shows effectiveness toward children's and adolescents' physical-motor and emotional skills with special needs.

The findings of this current research are 1) there were differences in the physical-motor and emotional skills of a cerebral palsy child among before, during, and after playing percussion, 2) there was an improvement of the physical-motor and emotional skills of a cerebral palsy child after playing the percussion. This research prove that the physical-motor and emotional skills of the child have differences among before, during, and after being the intervention by playing percussion. They also could be improved by playing percussion.

The snare drum selection as the percussion music instrument in this research has a reason because the instrument is simple and fits on the development of a cerebral palsy child's physical-motor and emotional skills. It is supported by Yeni (2015) and Kurniawan (2019) who that the snare drums selection is as the simple-percussion music instrument and the basis of the early educational stage for all other-

music instrumental play skills. The benefit of this research for science is to be the basic research in developing instruments to improve the learning and the children's skills. For society, this instrument could be used for learning or improving the skills of a cerebral palsy child.

CONCLUSION

Based on the results and discussion, the research conducted at Bina Ummah Integrated Islamic Preschool it could be concluded that by playing percussion, especially the snare drum, it is proven to be able to improve the physical-motor and emotional skills of a cerebral palsy child.

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