

THE WAYANG AND ITS ENCHANTING LITTLE PUPPETEERS: EXPLORING COGNITIVE ABILITIES OF CEREBRAL PALSY CHILDREN THROUGH PERFORMANCE

Mumtaz Begum Aboo Backer¹
Pravina Manoharan²

^{1,2}*School of the Art, Universiti Sains Malaysia (USM), Penang, Malaysia.*
mumzie@usm.my¹; pravina@usm.my²

Date received: 15 April 2022 / Date accepted: 29 May 2022 / Date published: 30 June 2022
<https://doi.org/10.51200/ga.vi.1930>

ABSTRACT

Wayang Kulit or shadow theatre, an ancient theatrical performance practice has given opportunity and space for researchers to explore the possibilities of creating a stimulating environment for performance and cognitive development among cerebral palsy children. This study looks at how three important performative elements in *Wayang Kulit* performance, “story-telling, role-playing and space” are explored for the development of cognitive abilities; i) to learn, ii) to sequence and iii) to reason, among cerebral palsy children. The study employs an action-research methodology which looks at participation-observation and artistic processes ranging from drama/theatre approaches to speech and vocal exercises. To assist the children in achieving the intended goals, “sensitive assistance” approach was also employed whereby teachers/facilitators assist the children during the workshop and training sessions. The cerebral palsy children were not only the participants of the workshops but more importantly, were the performers, storytellers, musicians, and puppeteers. Findings of this study show the children could, a) memorize the script (ability to learn), b) present the script in a story-telling manner (ability to sequence), c) role-play (to reason), and d) understand the mechanism of the performative setting (on and off stage). In addition, the study shows that through the sessions conducted via *Wayang Kulit* performance, the children learned to communicate, respond to each other, and also express themselves emotionally.

Keywords: *Wayang Kulit* performance, cognitive development, cerebral palsy children, role-play, storytelling.

INTRODUCTION

There are many studies and research undertaken acknowledging the importance of performing arts especially in the areas of dance, creative movements, music, and storytelling to enhance various functional abilities; physical, social, and cognitive faculties of children with special needs. This research looks at the possibilities of engaging performative elements from *Wayang Kulit* performance as a medium to explore the possibilities of creating a stimulating environment for the positive development of cognition among cerebral palsy children. Among some of the pertinent questions that are raised in this paper are, “how did the ancient *Wayang* engage with the cognitively impaired cerebral palsy children, how does the performative elements in the *Wayang* create a stimulating environment for cognition enhancement among the children?”

To answer these questions, it is first important to understand the unique features of the *Wayang*. *Wayang Kulit* or shadow puppet is a holistic theatrical form uniting music, song, visual design, movement, puppets and above all powerful storytelling, making it a multi-faceted performance (Foley, 2010). Performance scholars in Asian traditional theatre, Brandon (1960), Ghulam Sarwar (1977-2001), Tan Sooi Beng and Matusky (1997), affirm that *Wayang Kulit* goes beyond an entertainment entity by emphasizing powerful storytelling. It embodies philosophy, symbolism and strong cultural values, while emphasizing righteousness as a way of life through the stories. All these features contribute to the *Wayang* being an educational performance. Hand crafted leather puppets are one of the main attractions used to depict/narrate epic stories especially from the Mahabharata and Ramayana traditions, Buddhist Jataka repertoire and other sources of stories. The central elements of *Wayang Kulit* are the storytelling, puppeteering, and shadow play- further enthralled by the accompaniment of the *Gamelan* musical ensemble. As the puppets are moved expertly and the stories are narrated by the master puppeteer or rather known as the *Dalang*, each character is brought “to life”, leaving the audience mesmerized with the effects of shadow, light and music. Each performance genre has its own performance style in terms of the use of language, space, rituals, form, style and aesthetics, *Wayang Kulit* too is no exception.

***Wayang Kulit* as it Continues to Evolve**

The *Wayang* which was recognized and designated as the Intangible Oral Heritage by UNESCO in 2003 (Sulanjari et al., 2020), has a diverse repertoire and traditions ranging from India, Southeast Asia (Indonesia, Malaysia,

Thailand, Cambodia), central Asia, China, and even some parts of the Middle East. This recognition by the United Nations Educational, Scientific and Cultural Organization (UNESCO) positions the *Wayang* as continuously having the ability to be part of the community, surviving the lifestyle changes of the people and the threat posed by the new digital multi-media and electronic devices (Riyanto, 2011). As long as the *Wayang* can evolve together with the community that supports it, creatively adapt to changes whilst not losing the core heritage aesthetics, the relevance of this art form is significantly critical to overcome the efforts of facing extinction (Sulanjari et al., 2020). Furthermore, the versatility of this artform has further contributed to its continued survival (Kusbiyanto, 2015). These changes too are very much needed due to various factors such as economic, income generation for performers and puppeteers, tourism industries, sustainability of traditions and heritage and innovation through multimedia technology.

Most recently, there have been more studies on *Wayang Kulit* that focuses on the revival efforts of the performance using innovative approaches to suit and attract the attention of the younger generation (Dolhait et al., 2013; Yan, SL., 2017). Advanced technology such as projection mapping, augmented reality and three- dimensional animation has been explored by researchers, animators, technologists, and performers to make the *wayang* much more interesting, appealing and trendy for the current generation (Dolhait et al., 2013). Such innovative projects and efforts undertaken were and are extremely important in ensuring the relevance and survival of the *Wayang* in today's world of social media. Fadjar (2013) notes that the innovative approaches are much needed as *Wayang Kulit* was decreasing in popularity among the present generation due to the language used by the *Dalang*, the duration of the performance which at times can go on from night into the wee hours of the morning, the heavy themes surrounding the story line, and the complexities of the characters. As mentioned earlier, the epics (Ramayana and Mahabharata), the adventures and the characters which were once the central themes of the traditional *Wayang Kulit*, however, may not receive the same importance with today's children due to the multi-layered meanings in the epics, complexities of the characters, the thematic and archetypal roles in the performance (Jade Chan, 2016).

Innovation has also seen animators, multimedia designers teaming up with *dalangs* to replace projectors with bulb for backlights, whilst presenting Star Wars into *Wayang Kulit* (Project Fusion *Wayang Kulit*, 2013), introducing Darth Vader the popular villain and Princess Lea into *Wayang Kulit*. On the other hand, project *Wayang Hip Hop* in Indonesia, saw the combination of

traditional elements from the *Wayang* with modern elements from Hip Hop dance into the *Wayang* (Yan, S. L., 2017). Similar projects by *Dalang* Juffery and Che Mat Jusoh (2012-2014), well known master puppeteers in Penang explored new/modern characters and story lines from Marvel and DC movies into their *Wayang Kulit* projects to entice school children to learn, understand and appreciate the dynamics of the *Wayang*. Whilst these modern and popular cinema characters have taken centre stage through *Wayang Kulit*, there are also attempts to induce the local cultural essence believed to provide a participatory experience between the viewers especially children and the art form. While new stories, exciting adventures and new performative ways are continuously created within the repertoire to replace old central epics little is known nor explored of *Wayang Kulit*'s capabilities in engaging with the cerebral palsy children, and how it can create a stimulating environment for cognitive enhancement among these children.

Taking the lead from some of the prior projects undertaken in innovating the *Wayang*, this research looks at some of the novel approaches employed in “*Project Wayang the Boy and the Forest*”. This *Wayang Kulit* performance project that was conducted with the cerebral palsy children maintained some of the core elements and discusses how these approaches have been used to gauge the cognitive abilities of the children. Firstly, the project uses a simple story line specially written for the children, to make the story, the characters and the *Wayang* relevant to the children. Other innovative features were, the use of many narrators and puppeteers (*dalangs*) instead of just one as in the conventional form, the use of English and at times Bahasa Melayu (replacing the Kelantanese dialect as in conventional *Wayang Kulit Melayu*) and simple language, ensuring the children could pronounce and are familiar with the words. Apart from these innovations, conventional practices were adopted by the play such as the use of white screen just like any other *Wayang*, emphasizing the basic rules of good triumphing over evil, adventures undertaken by the main character, magical/mysterious elements in the story and the accompaniment of the musical gamelan ensemble. The combination of the new approaches fused with the conventional practices are believed to provide greater accessibility for children to explore *Wayang Kulit* through their understanding, playing the characters, moving the puppets, gesturing, speaking the dialogues, whilst, sustaining the art form as it continues to evolve and adapt with time and the children.

Cerebral Palsy and cognitive impairment

Children with cerebral palsy (CP) are cognitively affected, physically challenged, and demonstrate difficulties in mobility. Among some of the medical conditions of cerebral palsy are mental retardation, gastroenteritis, sensory impairment (visual, hearing, tactile, oral factory), speech impairment, and motor deficits. Is there cure for CP? Sadly, there is no cure for CP, however, there are various forms of interventions and therapies recommended to help manage the condition such as occupational therapy, speech therapy, movement therapy, hydro- therapy and art therapy (Ansdell, G., 2004).

The biggest impairment for children with CP is cognitive, and this leads to developmental disorder (Anderson & John R, 2004). As a result, there is a vast difference between the biological age of the children as compared to the cognitive understanding or reasoning. For example, a 10-year-old child with CP may only have the cognitive understanding or reasoning of a 4-year-old child or even lower. Cognitive, a mental process of acquiring knowledge and understanding through reasoning, and even experience is the ability to perceive and understand what happens in one's life, therefore, informs a person's decisions and goals. Cognitive ability encompasses many processes such as knowledge, attention (David, J. S., 2008), memory, judgment (Thomas, C. et al., 2013), evaluation (William, B., 2008), reasoning, decision making and problem solving (Schacter, D. I. et al., 2009).

Cognitive functioning involves;

- i) ability to reason,
- ii) ability to learn,
- iii) ability to perceive accurately,
- iv) ability to sequence,
- v) ability to inform,
- vi) ability to communicate with others,
- vii) ability to connect emotionally and
- viii) ability to build relationships.

A child with cerebral palsy, finds difficulty in doing most of the above-mentioned functions. However, with some form of intervention and support, there is hope for improvement in his/her cognitive functioning. As the research project explores the performance elements of the *Wayang* with the children, the possibilities for cognition functioning were gauged through a full-length theatrical performance by the children. The research project expanded over

two research grants from the year 2014 until 2017 (the first grant funded by Universiti Sains Malaysia) and continued with the second grant from 2018-2020 (fundamental research grant funded by Ministry of Higher Education, Malaysia). Both grants covered a duration of approximately of 7 years.

Research Aims

The aims of this research were; i) to explore the *Wayang Kulit* performative elements (role-play, storytelling, and space) that could support the improvement of cognition functioning amongst the CP children, ii) to identify the cognitive functions enhanced by the CP children through the *Wayang Kulit* performance project. The cognitive functions explored in this research project through the *Wayang Kulit* performance elements were the ability; i) to learn- acquiring knowledge, new skills, experience, to memorize, ii) to sequence- collecting, storing, sorting, arranging, remembering information through storytelling and iii) to reason- knowing what's "real/present", "pretend-play", make judgements and decisions using space and role-play.

Project Methods/Approaches

This research employed an action- research based approach. Three major approaches were employed.

- a) participation-observation
- b) artistic processes ranging from drama/theatre approaches (acting, speech, vocal, movement, puppet -handling and *gamelan* music playing)
- c) sensitive assistance

Participant-observation was employed as one of the key methods in this research to observe the children's movements, understand their responses and reactions to analyze their cognitive functioning. In addition, to provide the children with the experience of theatre making, the approach of artistic processes as a form of learning and making meaning outside the curriculum and classroom as suggested by Gadsden (2008), was further explored. Artistic processes are the actual making of artistic expressions as a primary way of understanding and examining children's creative experiences, and to better understand them in new and valuable ways (Springgay et al., 2008; Knowles et al., 2008). The artistic processes employed here were mainly drama/theatre approaches such as, theatre games, body conditioning/exercises (fun ways) through creative movements, role-play, storytelling, vocal exercises, puppet-handling, movement and *gamelan* music playing. Body conditioning, theatre

games and creative movement exploring various gross motor exercises such as grasping and release, moving of limbs, waving of hands, simple rhythmic dance movements, were conducted repetitively to improve balance, posture, and motor functions.

Theatre approach looked at all three performance elements; role-play, storytelling, and the use of space. As *Wayang Kulit*'s key feature is storytelling, various forms of vocal exercises were conducted with the help of speech therapist to improve speech, articulation, pronunciation, and intonation. Margot Sunderland's research (2017) on the use of storytelling as a form of psychotherapy to help children with special needs heal, propels this research to explore these possibilities with cerebral palsy children. Whilst Sunderland uses storytelling, there are also many theatre experts and teachers who continue to use and research on drama as alternative methods or approaches with children at risks or special needs. Of notable theatre exponent and researcher who has explored extensively on drama as therapy is Sue Jennings (1992; 1995; 2017), puts forth "role-play, imagination and improvisation" as a medium for self-expression which in return, helps deal with functional abilities of children among which are cognitive and social as further agreed by Kedem-Tahar, Kellerman (1996).

Pretend-play was slowly introduced so that children would get used to role-playing when they had to play the respective characters from the *Wayang Kulit* story. Pretend-play was combined with simple improvisation exercises using imagination. Children were shown pictures of animals, trees, jungles, waterfalls, ogres, and characters from the script. Then the facilitators would hold out a picture and make a certain sound and movement/action for the children to imitate. This would be done repetitively until the children could identify the picture with the sound, movement/action. To make the sessions fun, children would also be asked to imagine or pretend to be the element/character and make any sound, movement/action while saying the lines or certain words from the story/script. Theatrical performances use space; hence, the children were orientated between the performance space (on stage), transitory performance space (at the wings of stage and backstage) and non-performance space (off stage and normal space). Space exploration exercises were regularly conducted, combined with role-play to ensure children remember the designated spaces and their roles.

The "Sensitive assistance" approach was very useful while working with the children. This method involves the experienced and sensitive teacher/facilitator creating opportunities for the children to perform at levels they could not achieve on their own (Oakley, 2004). Through this approach, the teacher/

facilitator is seen as a co-participant in the child's construction of knowledge, assisting the child in learning how to solve problems and complete tasks (Fu & Stremmel, 1993). This approach is based on the premise that by giving the children enough support to reach a specific goal and by challenging them to go one step further, development is stimulated. Child psychologist Piaget states that any opportunity for a child to learn new knowledge or skills, is considered as cognitively stimulating, warranting for development (Fenson, Kagan, Kearsely & Zelazo, 1976).

As some of the sessions and exercises conducted in this research are drawn from play and art therapy, the research employed three tailored steps recommended in play therapy to help the specific needs of the children and promoting independence in the sessions. The first step consisted of "hand-over-hand" physical help or guidance by the teacher. The second step saw the child getting a demonstrated behaviour/act from the teacher. The third step is to encourage the child verbally to participate and praising him/her once the task has been performed. The researchers met with the children, teachers, and caregivers twice a week. Each session lasted two hours. The sessions were structured into four sections; i) body conditioning, ii) vocal exercises, iii) story-telling sessions and iv) role-playing combined with space exploration. Children who were inclined towards playing musical instruments, separate classes were held once a week at the Gamelan music studio in Universiti Sains Malaysia (USM). Both facilitators/teachers and children performed the exercises and tasks, giving room for discovery and improvement. Every session was treated as a workshop on its own with demonstration, hands on approach, notes on what worked and what did not, followed by simple assessments pre, during and post exercises and towards theatrical production. Timely feedbacks from teachers, parents and other collaborators were received, discussed, and analysed.

Wayang The Boy and The Forest - The Wayang Kulit Performance Process

Title of the *Wayang Kulit* performance was "*Wayang The Boy and The Forest*". The play was written specially for the children, by Mohammed Ghouse Nasuruddin (2015), a researcher on this project too. The script took into consideration their abilities. The children performed between 2016-2018 at designated venues and occasions, USM in February 2016, Cititel Hotel, Penang in September 2016, and The Cerebral Palsy (Spastic) Children's Association of Penang in October 2017 and 2018. About thirty (30) children participated in this research cum performance project. They played the roles of narrators, puppeteers, musicians, and chorus. They trained between 8-10 months for the first show that was held at USM and between 3-5 months for subsequent performances.

“*Wayang The Boy and The Forest*” surrounds the theme of good versus evil just like in every *Wayang Kulit* repertoire. The story is about a little boy named Ali who lives with his parents in a village near the forest. His father is a woodcutter, and his mother, a housewife. They lead a simple but honest life. His parents love him very much. Ali’s father tells him about the dangers of the forest and advises him not to walk into the forest alone as it is easy to get lost. One day, while playing near the forest, Ali saw a golden deer. Enchanted by its beauty, he chased after the deer, going deep into the forest, forgetting his father’s warnings about the dangers of the forest. Suddenly, the deer vanished. He searched everywhere but could not find it. Angry, frustrated, and bored, he started kicking the trees, breaking their branches, plucking the leaves, and throwing them carelessly, not knowing that he was hurting the trees. Without realizing, one of the trees transformed into an evil ogre and caught him. The ogre wanted to eat him as a form of punishment for his naughty and disrespectful behaviour towards nature. Ali became so scared and started crying for help. He remembered his father’s advice, begged the ogre, and shouted for his father. Hearing his cries, the Spirit of the Forest and the Monkey God came to his rescue and helped release Ali from the clutches of the ogre. They returned Ali to the fringe of the forest where his parents were searching for him. Ali thanked them and ran to his parents, hugged them, and promised that he would always obey them and be good to nature and all beings around him.

The Five Phase Process

The performance process can be divided into five phases respectively. Phase 1 focused on the processes of becoming the actors, use of space and puppet handling by the children. The researchers divided the children into groups of musicians, narrators, puppeteers, chorus, and worked accordingly with them. This process took about four months and was conducted at both The Cerebral Palsy (Spastic) Children’s Association of Penang and School of The Arts (SOTA), USM. In this phase, the theatrical /drama approaches mentioned above ranging from body conditioning, gross motor exercises, vocal exercises, speech and reading exercises were diligently conducted. Story-telling sessions together with role-play were done using the script to ensure children remembered the story, their roles, lines, and dialogues. Once children were comfortable with the storyline, their roles, characters, lines and dialogues, the acting space was introduced.

The use of space was important in helping children recognize between the present time (non-performance) to performance time and back to present time or “on-stage and off-stage”. Space exploration further engaged children

to understand that the performance space is also co-shared by other actors and people. It was vital for the performers to know the designated times when to use the space assigned or plotted for him/her such as “my space, your space, his space, her space and our space”. As they explored the space, puppet handling was incorporated too in the process. With the assistance of the teachers, the puppeteer children were taught to hold, sway, shake and place the puppets against the screen as the narrators told the story, actors spoke their lines and chorus made the sounds and movements. Music playing of selected Gamelan instruments, the *Gambang*, *Bonang*, *Saron*, *Canang*, and *Gong* which focused on muscle coordination, gross motor movement, eye and hand coordination were given focus too. Harvey (1980) establishes, and this study too concurs there have been many studies pointing out the positive effects of the role of music as therapeutic on children with special needs. Six children who showed interest and potential in music were selected and trained at the Gamelan studio in USM.

Phase 2 focused on the integration process at the respective performance venues, mainly The Cerebral Palsy (Spastic) Children’s Association, Penang and School of The Arts, USM. This integration was the coming together of all teams, production, technical and creative. Sequencing the story scene by scene and memorizing the lines processes took place. Children were trained to recognize the last word said/spoken by the respective character from the previous scene before they move into the next scene. Apart from memorizing and sequencing the scenes, researchers/facilitators also worked with the characterization and emotions of the characters.

In the story and performance of “*Wayang the Boy and the Forest*”, characters of the Boy, his parents, Monkey-God and Spirit of the Forest are “good” with the emotions being simply “happy, scared, brave, and sad”, whereas characters of the Ogre and Evil Spirit represent the evil portraying the emotions of anger and instilling fear. The Golden deer on the other hand is a trickster character, intended to invoke curiosity and sway the innocent or good characters to the darker side. Continuing efforts of space exploration from phase 1, blocking of characters in plotted space such as on stage, off-stage were continued. Simple movements were crafted based on the earlier exercises for the puppeteers and chorus. As such, children were trained to hold, handle, and move the puppets. When the children puppeteers and chorus were comfortable with the movement, it was then fixed or in theatre, we call it “lock the movement”. This phase got everyone to work together especially the musicians, narrators, puppeteers, and chorus.

Phase 3 of the performance process focused on all technical preparation before the actual performance took place. The processes involved dry technical rehearsals and space marking for a week before show day. Cue-call, entrance-exit of characters, scene calls, and cue-sheets were practiced with the children to prepare them mentally and physically. Full dress rehearsal was conducted on the eve of the actual show day to ensure everything went on as planned.

Phase 4 was SHOW TIME. The performances took place as planned and everything went on smoothly. The children performed their best, remembering their lines, dialogues, handling their puppets to their best, narrating the story, becoming the characters, sequencing scene by scene and moving between performance and non-performance space promptly. Phase 5 focused on matters arising from post- production and ways to improve.

Two separate assessments were conducted for all children involved in the *Wayang Kulit* project, i) assessment on daily progress report with *Wayang Kulit* and ii) daily progress report on cognitive development. Feedback from all parties were received, documented, analysed as findings, and submitted as report to the Cerebral Palsy Children's Association Penang and the research grant funders. The daily progress report sheets helped to keep track of the children's participation and input to see if we were moving in the right direction. The information from the assessment sheets and the theatrical performance were used as the data for our findings to answer our research questions and aims. It is noted that *Wayang The Boy & The Forest* theatrical production maintained some theatrical conventions of *Wayang Kulit* performance but incorporated some innovative features which assisted and complemented the children.

The table below shows the conventional theatrical features of *Wayang Kulit* performance which were maintained and some innovative features which were added onto "*Wayang The Boy and The Forest*".

Table 1 Conventional and innovative features of *Wayang Kulit*

	<i>Wayang's</i> Conventions in “ <i>Wayang The Boy and The Forest</i> ”.		Innovative features in “ <i>Wayang The Boy and The Forest</i> ”
1.	Used a screen/ <i>kelir</i>	1.	Many narrators
2.	Electric bulb light at the back of the screen	2.	Many puppeteers
3.	The performance begins and ends with the image of “ <i>Pohon Beringin</i> ” (the tree of life)	3.	Contemporary storyline but incorporated some mythical figures from the <i>wayang's</i> epic; Monkey-God, ogre, golden deer
4.	Some puppets were made of buffalo hide (skin)	4.	Puppets were also made from other materials; cardboard, plastic
5.	Music accompaniment- <i>Gamelan</i> ensemble (<i>Bonang, Gambang, Saron, Gendang</i> and <i>Gong</i>)	5.	Introduction of chorus for sound effects, repetition, and other movements
6.	Music was played during certain dramatic events (the beginning, introduction of characters, during conflict, climax and the end). Rattling of instruments during the appearance of certain characters.	6.	Script in English. Short lines /verses in the script; “I am scared”, “don’t hurt me”, “come play”

Findings

The findings of the study can be divided into three areas of cognitive ability or development; i) ability to sequence, ii) ability to reason and iii) ability to learn. These abilities are connected to the performance elements of “story-telling”, “role-play” and “use of space. This study showed that cerebral palsy children were able to achieve the outlined objective of the ability to sequence and to learn. About 30 per cent, 9 children, less than half showed average improvement in the activities of storytelling and reading. The children were able to narrate the dialogues with some help from the teachers/trainers. About 4 children were able to read the script with the help of the therapist and researchers who used word boards. The consistent rehearsals were effective in enabling some children to sequence the play as beginning, middle section, and end. They could sequence the characters, scenes, lines and dialogues through rehearsals and reminders from researchers and teachers. Some children were exceptionally better than the others as they not only remembered their lines but also prompted their friends who either forgot or were slow. But of course, these children were quite mild with their spasticity and were quite good with their academic lessons too.

As for the ability to reason, about 30 per cent, 9 children, less than half showed average improvement in the activities of role-play and transcending between the dramatic characters and present reality. Through the play, the children were able to recognize the characters they and their friends played.

Additionally, they could also remember to do the actions as taught by the researchers, for example, Ali kicked the trees, evil Ogre laughed loudly. They are also able to understand why Ali was caught by the Ogre. Whilst these children had the ability to follow the story and the play, the rest of the children had to be reminded, guided, and assisted throughout the play. Some of the children were able to express certain emotions with the help of the therapists, researchers, and the teachers such as showing sad face, being angry through their voice and showing happiness by laughing and clapping their hands.

Some of the children could relate to the moral values in the play. When asked the question, “is it ok for the boy to hurt the tree? a few answered “no” while the rest did not respond. To the question, “did Ali listen to his parents?”, more than half of the children answered “no”. Less than half of the children could also make simple judgement of the characters, such as agreeing that the Spirit of the Forest was good, and ogre was bad. The children too knew as to when and how the play ends. After curtain call and a bow, the children knew that the play had ended. As the audience applauded the performers by clapping, the children showed their happiness by clapping along and showing thumbs up.

The study showed that cerebral palsy children were able to achieve the outlined objective of the ability to learn new skills and to adapt. About 50 per cent, 15 children, half of the children showed good improvement in the activity of use of space. Rehearsals, blocking, space marking and constant reminders from teachers and researchers, they could understand the mechanism of the performative space by recognizing the stage, on and off stage, recognizing settings, props, puppets, and musical instruments on stage. The play, its production processes helped the children to communicate and respond to their teachers, the researchers and their fellow friends who were also the actors, puppeteers, and narrators. As puppeteers, the children handled the puppets by holding, positioning, and moving the puppets on the screen with help and support from teachers, parents, and handlers, as they were on wheelchairs and walkers.

The six children who played the *gamelan* music were guided and assisted by the researchers. Striking on the instruments rhythmically and timely, some needed help and support whilst two of the children could play on time by themselves. They knew when to start, continue playing and when to end. This clearly indicates that music as a form of intervention or therapy poses to have positive effects on CP children (Dobrynzka, E., Cesarz, H., & Rymaszewska, A.K., 2006). The children were introduced to the different timbre of the *gamelan* ensemble to accompany the *Wayang the Boy and the Forest* performance. The

gamelan notation was simplified to major scale by introducing a numbering system. Children learned through rote method. Instruments were allocated to the children based on their physical ability and different learning abilities.

CONCLUSION

This study indicates that *Wayang Kulit* performance's unique features such as puppets, storytelling, and music presents the possibilities for cognitive development among cerebral palsy children. This study further highlights that with support from theatre experts, therapist, teachers and caregivers, consistent rehearsals, and training in *Wayang* performance, the children had the opportunity to learn new skills such as music playing, puppeteering, storytelling and acting. These skills helped them in muscle coordination, being able to memorize the story and dialogues, sequence the play. Besides being a possible medium in stimulating their cognitive abilities in the above-mentioned ways, the production and the processes of the theatrical play drew reciprocal effects between the children and the *Wayang Kulit*. As the *Wayang Kulit* introduced the children to becoming actors, narrators, puppeteers, musicians and teamwork, the children too empowered the *Wayang Kulit* to be continuously engaging, ensuring its sustainability via performance and innovation.

ACKNOWLEDGEMENTS

This research project was successfully carried out with the help of our collaborating partners who were speech therapist, occupational therapist, special education teachers, pediatrician, neurologist, psychotherapist, teachers, parents, and handlers. This project was funded by two grants; Ministry of Higher Education Malaysia for the Fundamental Research Grant, "Silk Shadows Speak: A Study on Malaysian Children's Voices on Heritage Folktales Using Performative Tool (2017-2020), USM for the RU Grant, "Art Therapy: A study on Children with special Needs- Cerebral Palsy, Dyslexia and Learning Difficulties" (2014-2017). A special thanks to The Cerebral Palsy Children's Association, Penang, School of The Arts, USM, The Neurosciences Department, Kubang Krian, USM, Penang General Hospital, parents, and guardians of the cerebral palsy children and all the children who participated in the research and performance project. Finally, our deepest gratitude to fellow researchers and colleagues who actively contributed to both the research and the performance project, Professor Dr Mohd Ghouse Nasurrudin, Dr Johan Awang Othman, Professor Dr Shanti Balraj Baboo, Professor Dr Hazri Jamil, Miss Hong Kim Lan, Madam Nur Hilyati Ramli and Mr Izzardfadzli Fadzil.

REFERENCES

- Anderson & John R. (2004). *Cognitive psychology and its implications* (6th ed.). Irving, USA: Worth Publishers.
- Ansdell, G. (2004). Book review: Music as medicine- The history of music therapy since antiquity. *Psychology of Music*, 32, 440-444.
- Chan, Jade. (2016). Engaging with the young is essential in keeping Wayang Kulit Relevant. <http://www.thestar.com.my/metro/focus/2016/11/18>.
- David, J. S. (2008). Is it delivering, inside knowledge? *Ark Group*, 11(7), 32-36.
- Dobrynzka, E., Cesarz, H., & Rymaszewska, A.K. (2006). Music therapy: History, definitions and applications. *Archives in Psychiatry and Psychotherapy*, 8(1), 47-52. Word Press Entries.
- Dolhalit, M. L., Jun, M. Z., Pee, A. N., & Azman, F. N. (2013). The development of shadow play *Wayang kulit* using augmented reality. *International Journal of Interactive Digital Media*, 1(2), 27-30.
- Efrat Kedem-Tahar & Kellermann, P.F. (1996). Psychodrama and dramatherapy: A comparison. *The Arts in Psychotherapy*, 23(1), 27-36. Pergamon, USA: Elsevier Science Ltd.
- Fadjar, Evieta. (2013). Getting the younger generation to admire the Wayang. <https://en.tempo.co/read/news/2013/07/09/114494809>.
- Fenson, L., Kagan, J., Kearsley, R., & Zelazo, P. (1976). The developmental progression of manipulative play in the first two years. *Child Development*, 47, 232-236.
- Foley, K. (2010). Dancing shadows, epic tales: Wayang Kulit of Indonesia. *Asian Theatre Journal*. USA: University of Hawaii Press.
- Fu, V. R., & Stremmel, A. J. (1993). Teaching in the zone of proximal development: Implications for responsive teaching methods. *Child and Youth Care Forum*, 22, 337- 350.
- Gadsden, V.L. (2008). The arts and education: Knowledge generation, pedagogy and the discourse of learning. *Review of Research in Education*, 32, 29-61. DOI: 10.3102/0091732X07309691.
- Gfeller, K.E. (2002). Music as therapeutic agent: Historical and sociocultural perspectives. *Music Therapy in the Treatment of Adults with Mental Disorders, Theoretical Bases and Clinical Interventions*, 60-67.
- Ghulam Sarwar Yusof. (1997). *Angin Wayang: A biography of a master puppeteer*. Kuala Lumpur: Ministry of Culture, Art and Tourism.
- Harvey, A. W. (1980). The therapeutic role of music in special education: Historical perspectives. *The Creative Child and Adult Quarterly*, 5 (3), 196-204.
- Jennings, S. (1992). *Dramatherapy. Theory and practice* (2nd ed.). Routledge.
- Jennings, S. (1995). *Art therapy and dramatherapy, masks of the soul*. Kingsley.
- Jennings, S. (2017). *Creative storytelling with children at risk. A guide to humanistic counselling and psychotherapy* (2nd ed.). Taylor & Francis.
- Kusbiyanto, M. (2015). Upaya mencegah hilangnya wayang kulit sebagai ekspresi budaya warisan budaya bangsa. *Jurnal Hukum dan Pembangunan Tahun ke-45*, 4, 589-606.
- Matusky, P., & Tan Sooi Beng. (2004). The music of Malaysia: The classical, folk and syncretic traditions. *Asian Folklore Studies*, 63 (2). Nanzan University.

- Mauricio, D.M. et al. (2017). Cognitive representation of “musical fractals”: Processing hierarchy and recursion in the auditory domain. *Cognition*, 161, 31-45.
- Oakley, L. (2004). *Cognitive development*. New York: Routledge.
- Pietrzak, K., Grzybowwski, A., & Kaczmarczyk. (2016). William John Little (1810-1894). *Journal of Neurology, Springer*, 263, 1047-1049.
- Riyanto, B. (2011). *Wayang purwa dan tantangan teknologi media baru. Jurnal Desain Komunikasi Visual Nirmana*, 13 (1), 5-11.
- Schacter. D.L. et al. (2009). *Psychology* (2nd ed.).
- Sulanjari, B., et al. (2020). Children’s Puppeteers Festival: Between conservation and art education. *Advances in Social Science, Education and Humanities Research*, 574. Atlantis Press.
- Sunderland, M. (2017). *Using storytelling as a therapeutic tool with children*. London, UK: Taylor & Francis Ltd.
- Thompson. C. et al. (2013). An agenda for clinical decision making and judgment in nursing research and education. *Nursing Studies*, 50(12), 1720-1726.
- William, B. (2008). Mechanisms in cognitive psychology: What are the operations. *Philosophy of Science*, 75(5), 983-994.
- Yan Soon Lim. (2017). *Wayang Kulit and its influence on modern entertainment*. The International Academic Forum (IAFOR). www.iafor.org.

Assessment Sample Sheet (i)

DAILY PROGRESS REPORT FOR CP CHILDREN	
WAYANG KULIT PROJECT: WAYANG THE BOY AND THE FOREST	
1.	Date:
2.	Time:
3.	Venue:
4.	Child’s Name:
	Score Scale: 1. Depressed 2. Low 3. Satisfactory 4. Good 5. Excellent
5.	Emotional State: 1, 2, 3, 4, 5
6.	Nature of Task: 1, 2, 3, 4, 5
i)	Music:
ii)	Movement/puppet handling:
iii)	Role-play:
iv)	Storytelling/script reading/narrating:
v)	Space Exploration:
	Score Scale: 1. Inactive 2. Partially Active 3. Semi Active 4. Active 5. Committed
7.	Completion of Task: 1, 2, 3, 4, 5
i)	Music:
ii)	Movement/puppet handling:
iii)	Role-play:
iv)	Storytelling/script reading/narrating:

v)	Space Exploration
8.	Concentration: 1. Low 2. Medium 3. High
i)	Music:
ii)	Movement/puppet handling:
iii)	Role-play:
iv)	Storytelling/script reading/narrating:
v)	Space Exploration
9.	Adherence to given task: <ul style="list-style-type: none"> ⊙ 1. Low compliance (involved for ¼ of time allocated for task). ⊙ ii. Average compliance (involved ½ of time allocated for task). ⊙ iii. Full compliance (involved over ¾ of time allocated for task).
i)	Music:
ii)	Movement/puppet handling:
iii)	Role-play:
iv)	Storytelling/script reading/narrating:
v)	Space Exploration

10.	Overall Improvements: <ul style="list-style-type: none"> ⊙ 1. No improvement (0%). ⊙ ii. Minimal improvement (20% and below). ⊙ iii. Average improvement (20%--40%). ⊙ iv. Good improvement (40%--70%). ⊙ v. Excellent improvement (70%-100%).
i)	Music:
ii)	Movement/puppet handling:
iii)	Role-play:
iv)	Storytelling/script reading/narrating:
v)	Space Exploration

Assessment sample sheet (ii)

DAILY PROGRESS SHEET FOR COGNITIVE DEVELOPMENT OF CP CHILD: PROJECT: WAYANG THE BOY AND THE FOREST		
Name of Child:		
Score Scale: 1. Poor 2. Average 3. Satisfactory 4. Good 5. Excellent		
Report by:		
Cognitive Development Tracker	Comments	Score (1-5)
Ability to sequence i) Ability to arrange numbers ii) Arranging information-beginning, middle and end iii) Sequencing the pages in the script iv) Reading the words following the order/arrangement in the script		

<p>Ability to Learn i)Shows interest in new things? ii)Scared of/or uninterested in changes iii)Enjoys learning new skills-music playing? Narrating? Puppet handling? iv)Adapting to new space and venue? v)Space recognition? vi)Memory skills?</p>		
<p>Ability to Communicate i)Enjoy making new friends? ii)Always being with same friends or new friends? iii)Able to work in group? iv)Prefers working/being alone? v)Happy to greet, shake hands, nod or respond to teachers, friends? vi)Able to respond to emotions? (Happy/sad/angry/ annoyed/pain?) vii)Extrovert/Introvert- shy? Excited? Calm? viii)Participate in conversations? ix)Expressing self with emotions or actions?</p>		
<p>Ability to Read i)Recognize letters/alphabets/words/sentences ii)Need help/support to read iii)Prefers pictorial guide/illustrations? iv)Pace of reading?</p>		
<p>Ability to Reason i)Recognize characters and their behaviour ii)Recognizing good behaviour/bad behaviour iii)Able to make simple judgements of behaviour and action iv)Understand “play”, “Performance” and “present reality”</p>		