Let's Dance: Exploring the Physical, Psychological, and Social Effects of Dance in Children

Alexis Sunderlage
University of South Carolina - Columbia

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LET'S DANCE: EXPLORING THE PHYSICAL, PSYCHOLOGICAL, AND SOCIAL EFFECTS OF DANCE IN CHILDREN

By

Alexis Sunderlage

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Approved:

Dr. Kerry McIver
Director of Thesis

Jennifer Deckert
Second Reader

Steve Lynn, Dean
For South Carolina Honors College
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Thesis Summary

Movement and dance have a lot of positive health benefits, physically, psychologically, and socially. It can be hypothesized that children in therapy would benefit from dance and movement incorporated into therapy techniques. The purpose of this study is to explore the physical, psychological, and social effects of dance in children while learning information that could be applied to the setting of occupational and physical pediatric therapies. I developed a virtual program delivering dance in classrooms to 4–6-year-old children. The children were able to enjoy and engage in the videos, especially those that were more active and upbeat. Dance videos and other dance engagements should be studied further with more children of different ages and children that are enrolled in physical and occupational therapy.
Abstract

Movement and dance have a lot of positive health benefits, physically, psychologically, and socially. Children love to intrinsically move and creating a structured dance program is one way to gain the benefits of dance. The purpose of this study is to explore the physical, psychological, and social effects of dance in children while gaining insights that could be applied to the setting of occupational and physical pediatric therapies. This was done by conducting a literature review and exploring how children react to learning and following dance videos in a classroom setting by evaluating ability, engagement, and enjoyment by creating Let's Dance, a virtual dance program with stretching videos and upbeat active videos. 100% of children were able to complete all the videos. Children were more engaged with the videos of stretching with ballet and the upbeat active videos. Children more enjoyed the upbeat active videos when compared to the stretching based videos. Overall, children were able to complete the videos while staying engaged and enjoying the program. It can be inferred that children gained physical, psychological, and social benefits from participation in the program. Future studies are needed to examine the results in a larger and more diverse population.
Introduction/Literature Review

The benefits of physical activity are widely known for people of all ages. In children, exercise is known to benefit muscle development, bone health, strength, endurance, angiogenesis, neurogenesis, self-esteem, and psychological well-being. Participation in physical activity is also linked to a lower risk of long-term illness (Archer, 2014). Dance is a form of physical activity that also provides many of the benefits gained from participating in an art. Participation in the arts, including dance, creative engagement, expressive writing, art therapy, etc., can be helpful physically and mentally (Castora-Binkley, Noelker, Prohaska, & Satariano, 2010). Dance is a unique activity that combines both physical activity and art. Dance can combine both to provide physical, psychological, and social benefits.

Dance and movement serve many roles in societies around the world. Movement is a basic form of communication and experience. Movement allows people to express themselves in a nonverbal way, and this is a skill that everyone could benefit from in life (Koff, 2000). Dance acts as a form of exercise, expression, societal participation, and so much more. Dance provides people with a community, a sense of belonging, and is known to have learning benefits along with developmental awareness of the body, personal identity, and body control (Graham, 2002). Dance acts as a sustainable form of exercise for people of all ages because it is unique and fun. Dance also leads to increased flexibility, muscle strength, balance, spatial awareness, and well-being (Alpert, 2010). Murcia, Kreeutz, Clift, and Bongard (2009) conducted a study with 475 non-professional adult dancers to examine how dance impacts overall well-being. The study found that dancing has a positive impact on overall well-being based on self-reports of physical, spiritual, and social health. The study also found that there was a positive association between dance, self-esteem, and coping strategies. Evaluating dance as a whole can be very difficult
because there are so many different genres and styles, but it is this variety that makes dance so engaging, appealing, and adaptable to many different settings, including a therapy setting.

The American Dance Therapy Association defines dance/movement therapy as the psychotherapeutic use of movement to promote emotional, social, cognitive, and physical integration (ADTA, 2020). A lot of research surrounding dance has been done through dance/movement therapy. Although dance/movement therapy is not being directly examined in this study, there is a lot to be learned from the research surrounding the benefits of dance.

Dance/movement therapy is a psychotherapeutic field that focus on body movement-based creative elements allowing patients to understand feelings and experiences (Levy, 1995). The psychological benefits of dance/movement therapy include expression and self-esteem increases.

The physical benefits of dance, as seen in dance/movement therapy, include joint mobility, posture, temporal and prefrontal brain activity, cardiovascular training, and more (Alpert, 2010).

Social benefits of exercise include collaborating and working with others. Dance is a form of exercise that has shown to have an impact on physical, psychological, and social health. These benefits of dance are particularly important in vulnerable populations who participate in dance/movement therapy. Dance/movement therapy in children allows participants to express and explain things that are happening in life using imagination. Tortora (2019) looked at using dance/movement therapy with children undergoing cancer treatment. In one example, a child was dancing and acting like a shark; during the child’s treatment, they often described cancer as a “shark” in life. The dance/movement therapy allowed the child to incorporate imagination into the conversations doctors and parents have been having with the child. This connects real-life events to the child's imagination, making it easier for the child to comprehend (Tortora, 2019). Children respond well to dance and movement as movement is often a large part of childhood.
Children naturally love to explore and spontaneously dancing is an intrinsic part of childhood, making dance a natural component of life. Children engage with the physical world by dancing before they can speak or communicate. This can be observed through children waving their arms and rolling on the ground to music or when they need something at a very young age. Dance and movement are how children learn about the world around them. Lorenzo-Lasa and colleagues (2007) evaluated the impact of incorporating dance into the preschool classroom and found that it was a very engaging way to get children involved with their surroundings (Lorenzo-Lasa & Ideishi, 2007). The use of dance allowed the children to become more familiar with the space around them, use of direction, and facilitation of the body. In this study, they used a few different dance techniques to get the children involved. They included a warm-up with seated exercises and standing. They then completed basic ballet techniques. After, they completed “animal movements.” The animal movements were really interesting because they included both physical and mental engagement. The children thought about how the animal acted, sounded, and looked. This was found to be very engaging and exciting to the children (Lorenzo-Lasa & Ideishi, 2007).

As all children take part in intrinsic movement, dance/movement therapy techniques could be particularly helpful to those in vulnerable populations that need either physical and/or occupational therapy.

Pediatric physical and occupational therapies help children with developmental gross motor and fine motor skills. Skills that physical and occupational therapists work on include running, jumping, handwriting, sensory issues, object manipulation, muscle strengthening, and more. The goal of therapy, in general, is to get people back to participating in their day-to-day lives; for children, this includes playing. Children may receive therapy for many reasons: developmental delays, torticollis, traumatic brain injury, stroke, post-orthopedic injury, cerebral palsy, down
syndrome, autism, poor handwriting, visual delays, sensory processing disorder, feeding aversions, social delays, and more. Some of these children will receive physical and/or occupational therapy. Some will see a therapist for years while others might only go for a short time since each child has a different plan, timeline, and schedule for receiving therapy.

Therapists will set goals for the children, and dance and movement can be included in those long- and short-term goals and daily exercise programs. Therapists will frequently give children, family members, school instructors, etc. skills to practice outside of sessions. Dance and movement might be a fun way for the child to engage in meaningful play outside of sessions, making it seem less like therapy and more like play. Continually working outside of therapy will help children reach their therapy goals. For many children, therapy goals are based around development milestones: throwing a ball, walking, fine motor movements, holding a pencil in a tripod grip, visual tracking, etc. From personal observations of school-aged children in physical therapy, it was seen that a lot of the activities are very full body engaged if the program allowed. This caused children to often be working multiple systems at one time. For example, children would stand while completing a task at a table. This forces the child to focus on balance, weight shifting, and core engagement while also focusing on the task at hand. Many dance activities have the potential to engage in many different body functions while working on balance, flexibility, muscle engagement, and more. There is potential for dance to be used in and outside of therapy to assist in meeting these goals.

Dance as a form of pediatric therapy produces many benefits. There have been many studies done showing the positive impact of dance improving motor abilities in children with down syndrome (McGuire, Long, Esbensen, & Bailes, 2019), autism spectrum disorder (Scharoun, Reinders, Bryden, & Fletcher, 2014), and attention deficit hyperactivity disorder (Grönlund, 2016).
Renck, & Weibull, 2005). Dance allows children the opportunity to work on fun exercise motor skills with a community and support all while just “playing with friends.” Ballet Moves is an adaptive dance program done through the Cincinnati Ballet Company. Ballet Moves gives children with disabilities the opportunity to take ballet classes from professionals. They can gain gross motor skills while also working on communication skills. Just as discussed in other articles, dance allows for communication and self-expression where other forms of pediatric therapy fall short. Physical therapist researchers examined the effects of an adapted dance program, part of Ballet Moves, on motor abilities and participation in children with Down Syndrome (DS) and looked at caregiver responses. The children completed a 20-week, one-hour-a-week dance program. Many children with DS have reduced physical activity, and it is thought that increased well-being is associated with physical activity as well as increased communication and self-expression with art activities. The program improved gross motor abilities in children with DS, although there were only six children that completed pre and post-tests. The small sample and the lack of a control group are limitations to this pilot study. There is more research needed in this area, but this study is a good example of using dance therapy in a specific diagnosis (McGuire, Long, Esbensen, & Bailes, 2019).

There has not been much research done concerning dance/movement therapy for children, but based on current literature, there is a great reason to believe that it provides both physical and psychological benefits (Scharoun, Reinders, Bryden, & Fletcher, 2014). It is known that dance and movement have a lot of positive health benefits, physically, psychologically, and socially. It is also known that children intrinsically move to explore the world around them. If a program is able to provide dance and movement matched for ability level, engagement, and enjoyment, it could be inferred that the participating children would benefit from the dance program.
Therefore, the purpose of this study is to explore the physical, psychological, and social effects of dance in children while gaining insights that could be applied to the setting of occupational and physical pediatric therapies. This will be completed by conducting a literature review and exploring how children react to learning and following dance videos in a classroom setting by evaluating ability, engagement, and enjoyment.

**Methods**

The original plan for this project was to create a “Dance Day” where a dance class was taught to a classroom or preschool program where the children regularly participate in occupational and physical therapy. The class included a warm-up, choreography sequence, and make-believe dance. The success of this activity would be judged based on the children’s engagement with enjoyment of the activity. A parent survey was also planned discussing the child’s movement patterns and behaviors at home. However, due to Covid-19, it was determined that the delivery of Dance Day should be moved to a virtual setting.

The purpose of this study is to explore the physical, psychological, and social effects of dance in children while gaining insights that could be applied to the setting of occupational and physical pediatric therapies. I hypothesized that children in therapy would benefit from dance and movement incorporated into therapy techniques. I hypothesized that children aged 4-6 years old would enjoy dance videos while being engaged. It is expected that children will enjoy all the videos, but especially videos more based in active and aerobic movements when compared to videos more based in stretching.

To address this study aim, an online website and virtual dance delivery program called *Let’s Dance* was created. The program can be used in a classroom, at home, or in a therapy setting.
Using the research gathered and personal experience teaching dance to young children in a studio setting, four exercise dance videos were designed, filmed, and made available through the thesis website. Video one focused on stretching with an emphasis on ballet movements. Video two was an active dance class with an aerobic warm-up, a short dance, and then a cool-down. Video three focused on stretching with an emphasis in yoga movements. Video four was another active dance class with an aerobic warm-up, a different dance combination, and then a cool-down. The videos ranged in 4:30-6:30 minutes in length. The videos use a lot of similar movements to create some repetition while still including new elements to each video to keep children engaged. The recommendation was made that when delivering videos, videos one and two could be played together and videos three and four could be played together. However, all of the videos have the option to be completed independently. The videos were sent to eight 4-Kindergarten and Pre-Kindergarten teachers at a local elementary school. The children in the classroom were ages 4-6. The teachers were asked to complete as many videos as possible in two weeks and then submit a google form survey of their observations. The survey asked teachers to rank the children’s ability, engagement, and enjoyment of the videos. For ability, teachers were asked yes or no if their children were able to complete the activities “without too much struggle.” For engagement, the teachers ranked the engagement for each video on a scale of 1-5: not engaged at all, not really engaged, somewhat engaged, engaged, and very engaged. For enjoyment, the teachers ranked the enjoyment on a scale of 1-4: hated it, disliked it, liked it, and loved it. The teachers rated the energy in the classroom as high, medium, or low after participation in the videos. The teacher then noted how likely they were to use another video like this in their classroom again.
Project/Website

https://alexissunderlage.wixsite.com/letsdancethesis

I created the Let’s Dance website to share information about me, the research, the project, the videos, and the google form with all participating. The videos were made available via YouTube link from the website. The website delivery allows for it to be accessed by the public at any time.

Results

Data were collected from four classrooms at a local elementary school. We reviewed student ability, engagement, enjoyment, and energy through teacher reported data. Since there were only data on 4 classes, no statistical analyses were completed. The number of students in each classroom ranged from 10-13. 100% of teachers reported that they incorporate dance or movement into the lesson plan very frequently (5+ times a week). 100% of teachers reported students were able to participate in video one, video two, video three, and video four successfully without too much struggle.
Engagement

Figure 1: The level of student engagement as rated by each teacher for each video and the average. The levels of engagement ranged from 5, very engaged, to 1, not at all engaged.

100% of teachers thought that students were engaged or really engaged during video one, a stretching class with ballet elements. The average engagement score for video one was 4.75/5. 75% of teachers thought that students were engaged or really engaged during video two, an active upbeat dance choreography class. The average engagement score for video two was 4.5/5. 75% of teachers thought that students were engaged or really engaged during video three, a stretching class with yoga elements. The average engagement score for video three was 3.75/5. 75% of teachers thought that students were engaged or really engaged during video four, an active upbeat dance choreography class. The average engagement score for video four was 4.5/5. Comparing the average engagement scores of the videos, children were most engaged in videos
one, two, and four. Children were least engaged in video three, the stretching class with yoga elements.

**Enjoyment**

![Student Enjoyment Per Video](image)

Figure 2: The level of student enjoyment as rated by each teacher for each video and the average. The levels of engagement ranged from 4, loved it, to 1, hated it.

100% of teachers thought students either liked or loved video one, a stretching class with ballet elements. The average enjoyment score for video one was 3.25/4. 75% of teachers thought students either liked or loved video two, an active upbeat dance choreography class. The average enjoyment score for video two was 3.75/4. 100% of teachers thought students either liked or loved video three, a stretching class with yoga elements. The average enjoyment score for video three was 3.0/4. 75% of teachers thought students either liked or loved video four, an active upbeat dance choreography class. The average enjoyment score for video four was 3.5/4.

Comparing the average enjoyment scores, children seemed to slightly enjoy videos two and four, the upbeat active dances, slightly more than videos one and three, the stretching based classes.
Figure 3: Comparison of the energy in the classroom as reported by teachers when the video was finished. The percentages of teachers that ranked the energy high, medium, or low is reported as a percent out of 100 for each video.

Teachers reported 25% low, 50% medium, and 25% high energy after videos one and three, a stretching class with ballet elements and a stretching class with yoga elements. Teachers reported 75% high and 25% medium energy after videos two and four, active upbeat dance choreography classes. Overall, the energy was consistently higher after videos two and four.

For videos one, two and four, 75% of teachers said they were likely or very likely to use something like this again in their classroom. For video three, 100% of teachers said they were likely or very likely to use something like this again in their classroom. Overall, all teachers noted that they were somewhat likely, likely, or very likely to use all videos in their classrooms in the future.
Discussion

In conclusion, the children were able to participate and follow along, stay engaged throughout the videos, and enjoy the experience. All children were able to complete all of the videos, so the level of difficulty was correct for this age group. For engagement, all videos were found to be engaging, but there were slight differences between the videos: children seemed to find video three (stretching and yoga) the least engaging and videos one (stretching and ballet), two (active and upbeat choreography), and four (active and upbeat choreography) the most engaging. The results suggest that the children found the choreography and ballet videos overall slightly more engaging. Video three involving yoga elements had a lot of pauses and holding. It is possible that at this age the children are more engaged when there is constant motion, as seen in videos one, two, and four. This also confirms the hypothesis that children would be more engaged for the upbeat videos. For enjoyment, all videos were found to be mostly enjoyable, but there were differences between the videos: videos two and four were more enjoyable than videos one and three. The children more enjoyed the upbeat choreography-based dance videos when compared to the stretching videos. This also confirms the hypothesis that children more enjoy upbeat videos while being engaged and participating in dance videos in a classroom. Because the children had the ability, the level of engagement, and the level of enjoyment, it can be understood that children could have gained physical benefits from jumping, increasing heart rate, engaging muscles, and moving their bodies in new ways to create new motor patterns. Children could have gained psychological benefits from the movement engagement and following along necessary to complete the tasks. There was a lot of positive re-enforcement included in the videos to incorporate the positive self-esteem benefits of dance. Children could have gained social benefits from interacting with other students in the class. Even though the delivery was
virtual, this has the ability to be delivered in a group setting. Deciding when and how to incorporate the videos into therapy and further studies will be largely based on individual goals.

This is something to consider moving forward when deciding when in the day to play which videos. Upbeat dance videos, such as two and four, should be played when children will need to be high energy. Stretching videos, such as one and three, could be played when children need to be lower in energy, perhaps during a wind-down at the end of the session or day. This provides evidence that more research should be conducted in this field to further understand how children react to dance participation in a classroom and how this could be applied to populations in a therapy setting.

More research is needed to understand how children learn and engage in different forms of dance and movement videos in different settings. The videos were a successful form of delivery, and in the future, both virtual and in-person dance activities are an option. Further research is needed with a larger sample size in more diverse classrooms and schools. After creating a successful program, it would be beneficial to evaluate at how children receiving occupational and physical therapy respond to the dance program. The participation and level could be adapted and should be evaluated on an individual level to ensure safety. These dance videos could be used as a warm-up to get the children engaged and moving for the session, or they could be used as a way to calm down the children during a session that is particularly difficult for them. A physical therapist could use this program to engage children in full body activities. An occupational therapist could use this program to assist children in their main activity of daily living: playing. This study included a group component as the children were in a classroom full of other students. The videos could be done with children from various therapy sessions or in a group pediatric therapy session. This could also be implemented into a home therapy session as
something that is done on the days when the child does not come into therapy. The videos make for easy delivery and flexibility, and the videos do not need to be given by a professional or trained therapist. This project proved that it is feasible to deliver a program that is both enjoyable and engaging for children. The benefits of dance/movement therapy could be utilized within pediatric therapies using this program.

**Limitations**

This study had many limitations that should be considered. The main limitation of this study was the very small number of participants. This study needs to be repeated with a larger sample size to verify these results. Depending on the teacher’s previous dance or movement experience, the way that they view the program might be different. This could have impacted the teacher’s comfort with the project, and it could have impacted the teacher’s perception and subjective measures while completing the questions. This impacts the subjective ratings collected in the data as the information reported were not an objective measure reported by the participants, but instead asked the teachers to use judgments to make subjective measurements about the ability, engagement, and enjoyment of the students during the project. Gender and societal norms should be considered when creating a dance program, especially when using ballet and yoga components. This program should include an educational component delivered to teachers, therapists, parents, etc. concerning the delivery and approach towards this program. Dance has the ability to be beneficial and enjoyed by all people. It would be interesting in the future to have a physical or occupational therapist complete both objective and subjective measures of a child, complete the dance program for an extended period of time, and then repeat those objective and subjective measures as a way to measure progress over time. There is no longitudinal component to this study, and therefore it is not possible to measure any changes
over time. Another limitation is that the videos were done in different capacities within each classroom. There was no description of what days, how many days, or what time of day the videos had to be completed. If the videos were all done back-to-back, it could be assumed that the children would be less engaged by the last video. If the videos were done in the morning, the results might differ from videos completed in the afternoon. The purpose of this study was to learn how this programming could be used in a therapeutic setting. Due to Covid-19, this program was only able to be used in a classroom setting. Based on these results, it could be hypothesized that children in a therapy setting would find the program engaging and enjoy the program while seeing mental, physical, and social improvements.

**Conclusions and Further Studies**

Personally, I had a lot of fun putting together this dance program trying to maximize ability, engagement, and enjoyment through a virtual setting. If the original “Dance Day” would have occurred, it would have been interesting to see how children enrolled in therapy responded, but I would not have gotten a chance to think about how this could also be used outside of therapy. I was forced to think outside the box, making this project as feasible and meaningful as possible. I am very interested in continuing my research in this field as I move into graduate school, and I am excited to see this work continue. I personally plan on continuing with this research as I learn more about dance science and its applications to different populations.

In the future, this should be examined in more diverse populations and settings, including classrooms with children of different ages and children enrolled in pediatric and occupational therapy. Further program development should include physical therapists, occupational therapists, and dance/movement therapists to ensure maximum efficiency and feasibility of the
program. Building on the subjective measures provided by teachers in this study, it would be interesting in the future to have a physical or occupational therapist complete both objective and subjective measures of a child, complete the dance program for an extended period of time, and then repeat those objective and subjective measures as a way to measure progress over time.

In conclusion, the goal of this study was to examine the effects of dance in a classroom to learn how dance could be used in a pediatric therapeutic setting. We know that children participating in dance receive positive physical, psychological, and social benefits. In this study we found that children have the ability to participate in a follow along video. Videos that are upbeat and involving dance choreography were engaging and enjoyable for children, and we can infer that they were able to receive some benefits from this program. Future research is needed to confirm our findings with objectives measures over a long period of time and then develop a program that can be implemented into pediatric physical and occupational therapy programs. These programs will keep children engaged and happy while benefiting from the physical, psychological, and social benefits of dance.

Thank you to all participating teachers, students, and administrative staff for making this possible.
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