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# The Effects of Including Physical Activity in Classrooms with Children with Language Disorders

Shelby E. Auer

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The University of Southern Mississippi

The Effects of Including Physical Activity in Classrooms with Children with Language  
Disorders

By

Shelby Auer

A Thesis  
Submitted to the Honors College of  
The University of Southern Mississippi  
in Partial Fulfillment  
of the Requirement for the Degree of  
Bachelor of Science  
in the Department of Kinesiology

May 2017

# PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

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## PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

### **Abstract**

As obesity becomes a rising concern in the United States and the importance of high test scores continues to add stress to students, physical activity opportunities are beginning to become less frequent in schools. The Center for Disease Control reports a total of 12.7 million children were classified as obese from 2011 to 2012 (CDC, 2015). While many researchers have also acknowledged this trend, the majority of studies focus on the correlation of physical activity in the classroom with increases in fitness and cognitive functioning levels among average population students, much like the research done by Webster, Russ, Vazou, Goh, and Erwin (2015). Little research targets special populations, let alone specifically those with language disorders. The objective of this study was to address the perceptions of both the students and teachers in a school for those with language disorders regarding including physical activity interventions within the classroom setting. A sample population of 23 students, 4 teachers, and 4 teaching assistants from the DuBard School for Language Disorders was obtained. The teachers and their assistants completed pre- intervention questionnaires before being oriented to the intervention activities that they would implement in their classrooms. The students also completed a short interview prior to the intervention activities. For one week, the students in the participating classrooms performed brain break activities three times a day during normal classroom instruction time. At the end of the intervention week, the teachers answered another questionnaire and the students were interviewed. This study revealed the majority of teachers felt that taking breaks from instruction time to perform some physical activity benefitted the students by improving their energy and focus. Most of the students enjoyed the opportunity to take a break from schoolwork, to move about the classroom and be active. Some of the students even felt it made it easier to focus and learn when they returned to their classroom activities. Based on

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the results of this study, including physical activity in classrooms with students with language disorders could benefit the learning experience of the students. Future research is needed to further examine the direct effects increased activity has on students' fitness and cognitive functioning levels.

Key Terms: Physical activity, language disorders, brain breaks, exercise, classroom

**Dedication**

I would like to thank my family; to my mom, thank you for always pushing me to be my best.

And to my sister, thanks for setting the bar ridiculously high. I would also like to thank my advisor, Robert Doan, thank you for your guidance, support, and always tolerating my pathetic excuses.

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## **Introduction**

There is no doubt in most people's minds obesity is on the rise, particularly among the adolescent population. In fact, the Center for Disease Control's (CDC) most recent reports show from 2011 to 2012, approximately 17% of children between two and nineteen years in the United States were obese (CDC, 2015). To put the statistic in perspective, about 12.7 million children were classified and reported as obese that year. There are multiple factors in which people blame the obesity rise on, some of which may include: an increase in technology, changes in parenting styles or family dynamics, and the reason that has been highly researched- the decrease in physical activity in the school setting. This last reason is one that pertains to this research and will be discussed extensively. While there is plenty of research supporting the idea that increased physical activity levels in schools enhances learning among adolescents, many schools are still choosing to reduce or cut out entirely physical activity programs or recess from the school day (Webster, Russ, Vazou, Goh, & Erwin, 2015).

With a greater emphasis placed on improving test scores, many school systems are reducing or cutting out physical activity programs as a way to make time for more studying and test preparation. However, there are several research studies that show the potential of physical activity to enhance memory and improve overall performance for children. Strong et al. (2005) reviewed numerous articles which addressed the effects of physical activity on school-aged adolescents. The authors concluded children of this age category should participate in a least one hour of physical activity every day. As for academic performance, the results of the studies reviewed by the authors showed grade point averages and scores on standardized tests did not decline when time allocated for

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curricular studies was reduced in order to make time for more physical activity. In fact, some of the studies showed an increase in these measures of academic performance along with improved concentration, memory, and classroom behavior (Strong et al., 2005).

Webster et al. (2015), discussed the basis of using physical activity and movement integration methods in the classroom setting as a way of achieving both education and health related goals. The study points out the integration of physical activity in the classroom is not meant to replace a Physical Education program because they both serve two different purposes. The authors defined a Physical Education (PE) program as an instructional program which primarily targets children's knowledge and skill development. This article also highlighted the idea the school setting is the most crucial environment when it comes to targeting and reducing a child's sedentary behavior. Schools have access to almost all children of all races, genders, and ages and they are also the setting in which most children spend the majority of their time. Therefore, if education or health concerns are to be targeted, it is most effective to do so within the confines of the school and classroom setting. Not only does the school setting play an important role, but the teacher also has a profound effect on his or her students' physical activity levels within the classroom. Cothran, Kulinna, and Garn's (2010) study directly focused on the involvement of teachers in integrating physical activity in classrooms through interventions. Most importantly, this article confirmed the positive correlation between physical activity and movement integration in the classroom and an increase in improved academic performance in adolescents among multiple research studies (Webster et al., 2015).

Increasing exercise in schools does not have to be limited to PE programs or

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recess periods. Taking breaks from instruction time and allowing students to be active for a few minutes can be a simple solution for incorporating more physical activity into the school day. These activities can be identified as “Energizers”. Energizer activities are designed to require little to no equipment and be performed in the classroom. Mahar et al. (2006) utilized Energizers in their research to study the effects of an intervention program in the classroom setting. The results showed that students who were in classrooms where Energizer interventions took place were better able to stay on task and had higher levels of energy throughout the day (Mahar et al., 2006).

When looking at the benefits of programs such as movement integration in the classroom setting, it is important to choose an age group to focus on so data is controlled and can be assessed more appropriately. Toumpaniari, Loyens, Mavilidi, and Paas (2015) targeted preschool children, whereas the children selected for the following study were early elementary aged. In this study, researchers evaluated the effectiveness of using task-relevant gestures or physical activities to enhance foreign language vocabulary learning in preschoolers. The researchers hypothesized this method of learning would become a preferred teaching method and lead to a higher learning outcome. The results showed students who participated in the gesture and physical activity learning group produced higher scores than those who participated in the gesturing only group or even the traditional learning group (Toumpaniari et al., 2015). This study is important to the following research because it shows a method used in an age group that is close to the specified age group and proves that physical activity in a learning setting will produce positive results in the enhancement of learning.

So far, in the studies previously mentioned, none of the participants were

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identified as special needs students. The researchers in each study used a randomization method to assign students to each group, including the control groups. This helped to assure that the results accurately portrayed the average population. However, by not studying adolescents of a special population, there was no way to know these learning intervention methods will affect each population the same way. In this study an importance is placed on targeting students with special needs. The reason an emphasis was placed on this population is due in part to the limited amount of research done on adolescence with special needs. While there is plenty of research on the specific disabilities of most special needs students, little is known about how different learning techniques available affect each disability differently.

Physical activity in children with special needs was targeted as an important subject in a few research studies. Yazdani, Yee, and Chung (2013) found the prevalence of obesity among adolescents with developmental or learning disabilities. The authors also explained special needs children may be at a higher risk for developing obesity due to the diets or medications they may be prescribed because of their disability. While their study went on to associate the physical activity levels of special needs children with the physical activity levels of their parents, it is important to focus on the necessity of increasing physical activity among children with special needs. Preventing comorbidity of other diseases is one important reason to encourage physical activity among disabled adolescents. Physical activity also provides a level of cognition and social interaction that many children with disabilities need to thrive in their environment (Yazdani et al., 2013). Disease prevention and increased cognitive abilities are both important reasons for people of any population to participate in physical activity, but enhancing the quality of living

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for those of special needs populations is an important aspect as well.

The special needs population in this study included adolescents with language disorders. The study by Van Der Niet, Hartman, Moolenaar, Smith, and Visscher (2014) explained that children with language disorders have a tendency to have lower physical activity levels and consequently lower physical fitness levels than children without language disorders. Children with language disorders tend to experience difficulty in understanding and engaging in activities with other children and therefore tend to withdraw from physical activities and engagements that could be beneficial to their health as well as cognitive learning. Withdrawal from these activities not only effects cognitive learning, but also can mean children are not improving existing motor functions or developing new ones (Golubović, Maksimović, Golubović, & Glumbić, 2012). Understanding language and being able to communicate effectively is necessary for the initiation and maintenance of relationships with others (Marton, Abramoff, & Rosenzweig, 2005). Van Der Niet et al. (2014) characterized language disorders as “delayed language in the absence of a mental or physical handicap or a specific sensory or emotional cause”.

It has been found that children with language disorders also tend to have disorders such as Attention Deficit Hyperactivity Disorder and deficits in motor skills. Due to these issues, it is important to provide children with language disorders special attention when trying to involve them in physical activities. Interventions and evaluations need to be carefully assessed to assure that they appropriately engage the students and are truly measuring their ability. Since children with language disorders tend to be less active, assessments need to take into account they may be less physically fit than children of

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their age without the disorders (Van Der Niet et al., 2014). This study was important because it highlighted reasons adolescents with language disorders may be less physically active than others. It also gave precautions to consider when performing physical activities with language disorders. This study provided information needed to take into consideration when evaluating the participants in this study.

### Summary

Ultimately, research has been done that shows bringing physical activity into classrooms benefits the students who participate in at least two ways. Not only does this increased amount of physical activity reduce sedentary behaviors and increase physical health, it has been shown to improve learning and cognitive functioning (Webster et al., 2015). With obesity among adolescents as high as it is and education demands constantly getting higher, it makes sense the classroom setting becomes the site people want to target to improve both of these areas. Research has also shown the need for children with special needs to increase physical activity in an effort to prevent further diseases and improve current levels of functioning (Yazdani et al., 2013). A deficit in physical activity in children with language disorders is a trending topic among researchers and needs to be targeted. As mentioned previously, there is a lack of studies that show any results of using a physical activity intervention program in a classroom of children with language disorders. It is the researcher's intention to study the effects of an intervention program that they will introduce and utilize that involves physical activity and movement integration within the learning setting of a classroom with students with language disorders. It is the researcher's belief that a physically active intervention program in the classroom setting will improve the physical health and cognitive functioning of

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adolescent students with language disorders. This study will be a step in the right direction by looking into the perceptions teachers and students hold about physical activity in the classroom and possibly change any negative perspectives. Hopefully one day this research can lead to studies to examine the effects physical activity in the classroom has on physical health and cognitive functioning in children with language disorders.



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## **Methods**

### **Participants**

Participants for this study included the students from the four classes at the DuBard School for Language Disorders whose teachers agreed to participate in the intervention. Every student was sent home with consent forms explaining the study and requesting parent consent. Only those who returned the form signed by a parent/guardian were allowed to participate. These students range from three to thirteen years old and have a variety of speech and language disorders including dyslexia and hearing impairments. Each classroom has a maximum of ten students grouped according to their disabilities and readiness for the DuBard Association Method. The teachers and assistants of the classes were also asked to be participants in this study. Each classroom had one teacher and one assistant, so a total of eight adults participated in the study.

### **Procedures**

The purpose of this study was to examine the effects of an intervention program introducing physical activity and movement integration within the learning setting of a classroom with students with language disorders. The researchers explored how much physical activity the students perceived themselves doing inside the classroom and if the students felt exercise interventions enhanced their focus and learning capabilities. The perceptions of the teachers were also investigated. Teachers were asked about the current physical activity levels and if they felt the students benefitted from using the physical activity intervention.

Upon completing an Institutional Review Board approved informed consent, all

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of the participating teachers and assistants were asked to complete a pre-intervention questionnaire. The questionnaire given to the teachers was adapted from the interview questions used in Gehris, Gooze, and Whitaker (2014) to fit the research questions in this study. The questions for the student interviews were developed by the researchers. These questions were designed to gauge the students' perceptions of their physical activity levels in the classroom while using age appropriate language.

After completing the questionnaire, the teachers were introduced to several energizer, brain breaks, and transitional activities. A list of several activities were provided with instructions so that there were no questions or confusion. The teachers were asked to incorporate at least three activities from the list into their instructional period each day during the interventional week. The activities were selected from the textbook authored by Rink, Hall, and Williams (2010) textbook as well as from the online document included with the textbook.

The participating students were also interviewed prior to the intervention by the researchers. Students were pulled out of the class two at a time and brought into an observation room. Each student was informed that their parents had given their permission for the researchers to question them, but were also asked to assent to being interviewed for themselves. When permission was granted and students signed consent forms, the researchers interviewed the students and recorded their answers. Each pair of interviews lasted for approximately five minutes.

The teachers were asked to take notes throughout the week on how well their students responded to the activities, whether or not they noticed any changes in the students focus and participation in other portions of the lesson, and any problems or

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issues they faced throughout the week. Researchers also sat in on a variety of classes to take observational notes. This was done in a randomized and unannounced manner.

At the end of the intervention week, teachers and assistants were issued a post-intervention questionnaire. The students were also interviewed about their satisfaction with the intervention and whether or not they think the intervention helped them focus or improved their ability to learn. The data was then compiled from all of the classes and analyzed according to the feedback provided by both the teachers and the students.

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### Results

#### Pre-intervention interviews

When the students were asked about their current levels of physical activity in the classroom, the majority of the students indicated they occasionally had opportunities to be active. Many of these students reported the type of exercise they were doing included walking to the chalkboard and/or standing at the chalkboard during lessons. However, 35% of the students interviewed reported they were active in class compared to the 17% of students who reported they had little to no opportunity to be active in the classroom setting. Question two in the pre intervention student interviews produced some alarming results. Approximately 52% of the students reported they were often bored or had a tendency to lose focus while in the classroom setting. Only three of the twenty-three interviewed students reported they were able to stay focused throughout the day. As for the remaining eight students, they felt as though they did pretty well with staying on-task during the day or only got bored on occasion. As for the third question of the interview, the majority of the students agreed they would like to be more physically active in the classroom and take the occasional brain break.

Teachers and their assistants were issued a pre intervention questionnaire to assess their opinions of exercise in the classroom and brain breaks prior to engaging in the intervention itself. The teachers were first asked how they felt movement experiences influenced children's learning. A majority of the teachers felt positively about the influences that movement experiences have on children's education and learning experiences. Some noted movement can allow students to get out their "wiggles" before learning new information, while others addressed the idea movement experiences had the

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potential to be difficult or distracting for some students.

In the next question, the teachers were asked whether or not they felt that children's movement experiences were important to their learning. Again, the teachers all agreed movement experiences were important aspects of children's learning. Some teachers mentioned these experiences were important factors in enhancing children's memory and sensory. One teacher even stated, "I feel children's movement experiences are important to their learning. Movement experiences can show children another way to learn, that they can apply in their daily life."

With question three, teachers were asked whether or not they felt energizer activities or brain breaks would help children to focus better in the classroom. While six out of the eight teachers/assistants fully agreed the students needed these brain break activities, two teachers had reservations about whether or not they were effective for all students. These two teachers felt the activities could be beneficial for most students, but some populations of students might find the breaks more distracting or frustrating.

Question four targeted students with language disorders directly and asked the teachers if they felt students with language disorders would benefit more or less from extra physical activity in the classroom than students without a language disorder. For this question, all but three teachers expressed full agreement and stated they believed students with language disorders would benefit even more from physical activity interventions throughout the day. Three teachers expressed it may depend on the individual child and any comorbid disabilities he or she may have.

Lastly, the teachers were asked about any difficulties they could foresee they may face when trying to incorporate these exercise breaks into the classroom routines of

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students with language disorders. The teachers listed things such as time, space, change in routine, and ability to understand directions as potential difficulties they would expect to face.

### Post-intervention interviews

At the end of the intervention period, students were interviewed about their perceptions of the intervention itself and how they felt the activities effected them. The first question was straightforward and asked the students directly whether or not they enjoyed the intervention activities. As expected, the majority of the students enjoyed the activities. Only 9% of the students reported not enjoying the physical activities.

In the second question, students were asked whether or not they felt like they were better able to focus after completing an intervention activity. 57% of the students reported they felt like they were better able to focus after completing a brain break and 17% of students felt they had about the same level of focus. Since this study also reviewed the perception of the effects of exercise on the cognitive levels of students with language disorders, the students were also asked whether or not they felt the increased activity levels helped them to learn better. As it was hypothesized, the majority of the students felt as though they were better able to learn after participating in the intervention activities. One student even stated, "... it helped me to do my work and relieve anger."

The students were also asked which intervention activities were their favorite so future interventions could better target which activities the students were interested in. The majority of the students preferred the Kids Just Dance music videos, while others enjoyed some basic stretching techniques. This question produced a larger variety of

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answers and some of the students found it difficult to answer. This is probably due to students having a difficult time remembering all of the intervention activities or distinguishing between the intervention activities and other classroom activities. See Tables 1 and 2 for frequency comparisons.

**Table 1**

Table 1  
*Student interview responses(1-3)*

<u>Pre-Intervention Question</u>	<u>Positive Response</u>	<u>No change/Neutral</u>	<u>Negative Response</u>
1	8 (35%)	11 (48%)	4 (17%)
2	3 (13%)	8 (35%)	12 (52%)
3	18 (78%)	0 (0%)	5 (22%)
<u>Post-Intervention Question</u>			
1	21 (91%)	0 (0%)	2 (9%)
2	13 (57%)	4	6 (26%)
3	16 (70%)	0 (0%)	7 (30%)

**Table 2**

Table 2  
*Post-Intervention Student Responses (Question 4)*

<u>Intervention Activity</u>	<u># of students</u>	<u>Percent</u>
Wii Just Dance Video	12	52%
Stretches	5	22%
“On the Farm”	2	9%
None	1	4%
Unsure/Unable to respond	3	13%

After the intervention period, teachers were given a post-intervention questionnaire to assess their opinions of the intervention and their perception of the

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effects it had on the students. When asked how the intervention activities affected the students ability to focus, a majority of the teachers felt the activities helped some students to focus, while other students had a harder time settling back down. A few teachers even stated that doing an intervention activity in the morning helped students to wake up and prepare for the day.

In question two, teachers were asked if the activities provided smooth transitions between classroom activities. Five of the teachers reported they did find the interventions to be helpful in providing smooth transitions. The other three teachers expressed that it varied depending on the student or that sometimes it took the students a few minutes to settle back down after an activity. When asked about which activities they used most or which ones they found most beneficial to their classroom, some teachers mentioned they used the dance videos most and most of the students enjoyed this activity. Some teachers liked how several of the activities utilized language and could be easily incorporated into the current lesson.

The teachers were asked to record any modifications or adaptations they made to any of the activities. Two teachers changed the length of time they did some of the activities and two other teachers utilized some breathing techniques after each activity to calm and refocus their students. One teacher modified some of the activities to include more cross-body reaching. The next question on the questionnaire asked what the teachers found challenging about doing the intervention activities in their classrooms. Several of the teachers commented sometimes it was difficult to find time to do an intervention three times a day. Occasionally space in the classroom was an issue. One teacher found participation depended on whether or not the students liked the activity or



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not.

Lastly, the teachers were asked whether or not the intervention activities were something they would continue to utilize in their classrooms. Generally, all of the teacher agreed they would continue to use physical activity in their classrooms, however several teacher stated they would not do it three times a day or on a regular basis. Three out of the eight teachers said they would continue to use the activities in the mornings as a way to wake up and jump start the students.

### **Discussion**

The purpose of this research was to study the effects of including physical activity in classrooms with children with language disorders and to gain the perceptions of both teachers and students. This research could prove to be important in future studies which will look at the physical and cognitive benefits of a physically active classroom. Knowing the perceptions of the students and teachers could be important to understanding how to approach changing the dynamics of the classroom. With this knowledge, a more active and engaging classroom can be created. The goal of this research was to not only learn and understand these perceptions, but to also change any negative perspectives and encourage a more physically active classroom.

As the data of this study demonstrates, a majority of the students felt they had limited opportunities to be physically active in class. With the current limited levels of activities, the students expressed the desire to do the activities if provided. After the intervention, students responded favorably and perceived themselves as being more focused and better able to learn. While a few of the teachers expressed concerns about having time to do brain breaks or physical activity interventions throughout the day, many teachers found physical activity as an effective measure to wake the students up in the morning and get them energized for the day. As expected, some teachers found space to be an issue for doing certain physical activities within the classroom. One thing the researchers did not account for that the teachers brought to light was while physical activity was beneficial to a majority of the students and helped them to focus on classroom activities, a few students became less focused and had a hard time returning to school work after having a brain break. The teachers noted these students were disruptive

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and wanted to continue to “play”. However, this was only the case with one or two students per classroom and the majority of the children did seem to benefit.

As predicted at the beginning of this study, including physical activity in classrooms with children with language disorders seemed to improve the physical and cognitive levels of the students based on the perceptions of both the teachers and the students. While this research study did not directly test and examine the cognitive effects that including exercise in language disorder classrooms had on students, it laid the foundation for future research to be done. This particular study targeted the perceptions of both the teachers and the students, and resulted in primarily positive results.

Some weaknesses of this study include the small sample size of students and teachers. In a future study, a larger sample size would be more ideal and would help prevent any skew in the data. Another weakness includes the potential absence of a student. It was noted that one of the students was absent to school during an intervention day and therefore missed the intervention activities that the class participated in that day. Two students were also absent on the day post intervention interviews were conducted so their interviews were conducted the next day when they came back to school, but the time gap between the intervention taking place and the time they were interviewed could have affected the students responses if they could not recall particular intervention activities.

While these weaknesses are important and deserve to be addressed, it does not in any way take away from the results of this study. As mentioned previously, the data collected and the ideas presented within this study serve as basis to help expand future research in this field. Research can often be found on average populations, but results may vary when similar research is done with special populations such as those with

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language disorders.

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## Appendix A: IRB Approval Letter



**INSTITUTIONAL REVIEW BOARD**  
118 College Drive #5147 | Hattiesburg, MS 39406-0001  
Phone: 601.266.5997 | Fax: 601.266.4377 | [www.usm.edu/research/institutional.review.board](http://www.usm.edu/research/institutional.review.board)

### NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.  
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 16102002  
PROJECT TITLE: The Effects of Including Physical Activity in Classrooms with Children with Language Disorders  
PROJECT TYPE: New Project  
RESEARCHER(S): Shelby Auer  
COLLEGE/DIVISION: College of Health  
DEPARTMENT: Kinesiology  
FUNDING AGENCY/SPONSOR: N/A  
IRB COMMITTEE ACTION: Expedited Review Approval  
PERIOD OF APPROVAL: 11/01/2016 to 10/31/2017  
**Lawrence A. Hosman, Ph.D.**  
**Institutional Review Board**

# PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

## Appendix B: Consent Forms



### INSTITUTIONAL REVIEW BOARD LONG FORM CONSENT

LONG FORM CONSENT PROCEDURES		
<p>This completed document must be signed by each consenting research participant.</p> <ul style="list-style-type: none"> <li>The Project Information and Research Description sections of this form should be completed by the Principal Investigator before submitting this form for IRB approval.</li> <li>Signed copies of the long form consent should be provided to all participants.</li> </ul> <p style="text-align: right;"><small>Last Edited August 29<sup>th</sup> 2014</small></p>		
<p>Today's date: 10/13/2016</p>		
PROJECT INFORMATION		
Project Title: The Effects of Including Physical Activity in Classrooms with Children with Language Disorders		
Principal Investigator: Shelby Auer	Phone: 251-509-6999	Email: shelby.auer@usm.edu
College: Health	Department: Kinesiology	
RESEARCH DESCRIPTION		
<p><b>1. Purpose:</b></p> <p>With the decreased levels of physical activity in the classroom setting seen in schools across the United States, many studies have shown that promoting movement in the classroom benefits the students on many levels. It is important to understand both the teachers and students perspectives and opinions when activity levels are increased within the classroom. This research is highly important for classrooms for students with language disorders because of the limited amount of research in that area. Therefore, the purpose of this study is to study the effects of including physical activity in classrooms with children with language disorders.</p>		
<p><b>2. Description of Study:</b></p> <p>Teachers at the DuBard School will be asked to participate in this research study. Three classes (with ten students in each class) will be randomly selected from those willing to participate. The researcher will meet with the teachers of the selected classrooms to go over the oral presentation document, pass out informed consents, and ask the teachers to take their pre-intervention survey. The teachers will be provided with consent forms to send home to the students' parents, the pre-intervention student survey, the list of physical activities and the directions for those activities, and the post-intervention survey for both the students and teachers to take at the conclusion of the week. The researcher may sit in to observe each class at random to take additional notes.</p>		
<p><b>3. Benefits:</b></p> <p>The teachers who participate will be able to reflect on how the physical activities affected their classroom and how the students benefited, if at all. The students who participate will benefit from the increased amount of physical activity.</p>		
<p><b>4. Risks:</b></p> <p>The only risks the children may face would include physical injury from bumping into a peer or an object in the classroom. The teachers will be warned about the potential for injury and will be asked to use their discretion to avoid any activity that might not be safe to do in the classroom or to eliminate any hazards before starting an activity. The teachers will also caution the students to be mindful of the space around them</p>		



# PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

while they are moving.

## 5. Confidentiality:

All surveys will be kept confidential and anonymous. Paper documents will be kept on file for 5 years and electronic documents will be kept in a drop box for 5 years. Only the researchers will have access to these documents. After 5 years all paper documents will be shredded and electronic documents will be deleted.

## 6. Alternative Procedures:

Teachers will be instructed to utilize the physical activities as they see fit as long as they are participating in the activities at least three times throughout the school day. The teachers will also be instructed to use their discretion in choosing activities from the provided list that are within their students capabilities. They may also moderately adapt any activity to meet the needs of their students or classroom.

## 7. Participant's Assurance:

This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-268-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in Project Information Section above.

## CONSENT TO PARTICIPATE IN RESEARCH

Participant's Name: \_\_\_\_\_

Consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.

Questions concerning the research, at any time during or after the project, should be directed to the Principal Investigator with the contact information provided above. This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 268-5997.

Include the following information only if applicable. Otherwise delete this entire paragraph before submitting for IRB approval: The University of Southern Mississippi has no mechanism to provide compensation for participants who may incur injuries as a result of participation in research projects. However, efforts will be made to make available the facilities and professional skills at the University. Participants may incur charges as a result of treatment related to research injuries. Information regarding treatment or the absence of treatment has been given above.

Research Participant

Person Explaining the Study

Date

Date

# PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS



## INSTITUTIONAL REVIEW BOARD ORAL PRESENTATION OF RESEARCH PROCEDURES

ORAL PRESENTATION OF RESEARCH PROCEDURES
<p>The information outlined in this document must be presented orally to all potential research participants before consent is obtained.</p> <ul style="list-style-type: none"> <li>• A completed version of this oral presentation (sans signatures) must be submitted to the IRB for approval.</li> <li>• The participants should be made aware of the IRB overview of the project and be given contact information for various individuals in case they have any questions.</li> <li>• Copies of the oral presentation should be provided to all participants.</li> <li>• Witnesses to the oral presentations must be someone other than the Principal Investigator.</li> <li>• Unless a waiver of documentation of consent is requested from and granted by the IRB, all oral presentations must be accompanied by a short form consent.</li> </ul> <p style="text-align: right; font-size: small;">Last Edited November 20<sup>th</sup>, 2014</p>



Today's date: 10-13-2016		
PROJECT INFORMATION		
Project Title: The Effects of Including Physical Activity in Classrooms with Children with Language Disorders		
Principal Investigator: Shelby Auer	Phone: 251-509-6999	Email: shelby.auer@usm.edu
College: Health	Department: Kinesiology	
ORAL PRESENTATION PROCEDURES		
<p><b>1. Purpose:</b></p> <p>With the decreased levels of physical activity in the classroom setting seen in schools across the United States, many studies have shown that promoting movement in the classroom benefits the students on many levels. It is important to understand both the teachers and students perspectives and opinions when activity levels are increased within the classroom. This research is highly important for classrooms for students with language disorders because of the limited amount of research in that area. Therefore, the purpose of this study is to study the effects of including physical activity in classrooms with children with language disorders.</p>		
<p><b>2. Description of Study:</b></p> <p>Teachers at the DuBard School will be asked to participate in this research study. Three classes (with ten students in each class) will be randomly selected from those willing to participate. The researcher will meet with the teachers of the selected classrooms to go over the oral presentation document, pass out informed consents, and ask the teachers to take their pre-intervention survey. The teachers will be provided with consent forms to send home to the students' parents, the pre-intervention student survey, the list of physical activities and the directions for those activities, and the post-intervention survey for both the students and teachers to take at the conclusion of the week. The researcher may sit in to observe each class at random to take additional notes.</p>		
<p><b>3. Benefits:</b></p> <p>The teachers who participate will be able to reflect on how the physical activities affected their classroom and how the students benefitted, if at all. The students who participate will benefit from the increased amount of physical activity.</p>		

# PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

**4. Risks:**

The only risks the children may face would include physical injury from bumping into a peer or an object in the classroom. The teachers will be warned about the potential for injury and will be asked to use their discretion to avoid any activity that might not be safe to do in the classroom or to eliminate any hazards before starting an activity. The teachers will also caution the students to be mindful of the space around them while they are moving.

**5. Confidentiality:**

All surveys will be kept confidential and anonymous. Paper documents will be kept on file for 5 years and electronic documents will be kept in a drop box for 5 years. Only the researchers will have access to these documents. After 5 years all paper documents will be shredded and electronic documents will be deleted.

**6. Alternative Procedures:**

Teachers will be instructed to utilize the physical activities as they see fit as long as they are participating in the activities at least three times throughout the school day. The teachers will also be instructed to use their discretion in choosing activities from the provided list that are within their students capabilities. They may also moderately adapt any activity to meet the needs of their students or classroom.

**7. Participant's Assurance:**

This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at (601) 266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in Project Information Section above.

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**PRINCIPAL INVESTIGATOR AUTHORIZATION**

By signing my name below, I attest that the procedures for oral presentation described above were followed.

Principal Investigator	Witness to Oral Presentation
Date	Date



INSTITUTIONAL REVIEW BOARD  
**SHORT FORM CONSENT**

SHORT FORM CONSENT PROCEDURES	
<p>This document must be completed and signed by each potential research participant before consent is obtained.</p> <ul style="list-style-type: none"> <li>All potential research participants must be presented with the information detailed in the Oral Procedures before signing the short form consent.</li> <li>The Project Information section should be completed by the Principal Investigator before submitting this form for IRB approval.</li> <li>Copies of the signed short form consent should be provided to all participants.</li> <li>The witness to consent must be someone other than the Principal Investigator or anyone else on the research team.</li> </ul> <p style="text-align: right; font-size: small;">Last Edited July 22<sup>nd</sup>, 2014</p>	
<p>Today's date: 10-13-2016</p>	
PROJECT INFORMATION	
<p>Project Title: The Effects of Including Physical Activity in Classrooms with Children with Language Disorders</p>	
Principal Investigator: Shelby Auer	Phone: 251-509-6999   Email: shelby.auer@usm.edu
College: Health	Department: Kinesiology
CONSENT TO PARTICIPATE IN RESEARCH	
<p>Participant's Name: _____</p> <p>Consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.</p> <p>The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.</p> <p>Questions concerning the research, at any time during or after the project, should be directed to the Principal Investigator using the contact information provided above. This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 266-5997.</p>	
Research Participant	Witness to Consent
Date	Date

# PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS



## INSTITUTIONAL REVIEW BOARD PARENTAL CONSENT FORM

PARENTAL CONSENT PROCEDURES		
<p>This document must be completed by the Principal Investigator and signed by the parent or guardian of each potential research participant.</p> <ul style="list-style-type: none"> <li>The Project Information and Research Description sections of this form should be completed by the Principal Investigator before submitting this form for IRB approval.</li> <li>Signed copies of the long form consent should be provided to a parent or guardian of every participant.</li> </ul> <p style="text-align: right;"><small>Last Edited May 22<sup>nd</sup>, 2014</small></p>		
Today's date: 10-13-2016		
PROJECT INFORMATION		
Project Title: The Effects of Including Physical Activity in Classrooms with Children with Language Disorders		
Principal Investigator: Shelby Auer	Phone: 251-509-6995	Email: shelby.auer@usm.edu
College: Health	Department: Kinesiology	
RESEARCH DESCRIPTION		
<p><b>1. Purpose:</b></p> <p>With the decreased levels of physical activity in the classroom setting seen in schools across the United States, many studies have shown that promoting movement in the classroom benefits the students on many levels. It is important to understand both the teachers and students perspectives and opinions when activity levels are increased within the classroom. This research is highly important for classrooms for students with language disorders because of the limited amount of research in that area. Therefore, the purpose of this study is to study the effects of including physical activity in classrooms with children with language disorders.</p> <p><b>2. Description of Study:</b></p> <p>Teachers at the DuBard School will be asked to participate in this research study. Three classes (with ten students in each class) will be randomly selected from those willing to participate. The researcher will meet with the teachers of the selected classrooms to go over the oral presentation document, pass out informed consents, and ask the teachers to take their pre-intervention survey. The teachers will be provided with consent forms to send home to the students' parents, the pre-intervention student survey, the list of physical activities and the directions for those activities, and the post-intervention survey for both the students and teachers to take at the conclusion of the week. The researcher may sit in to observe each class at random to take additional notes.</p> <p><b>3. Benefits:</b></p> <p>The teachers who participate will be able to reflect on how the physical activities affected their classroom and how the students benefitted, if at all. The students who participate will benefit from the increased amount of physical activity.</p> <p><b>4. Risks:</b></p> <p>The only risks the children may face would include physical injury from bumping into a peer or an object in the</p>		

# PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

classroom. The teachers will be warned about the potential for injury and will be asked to use their discretion to avoid any activity that might not be safe to do in the classroom or to eliminate any hazards before starting an activity. The teachers will also caution the students to be mindful of the space around them while they are moving.

**5. Confidentiality:**

All surveys will be kept confidential and anonymous. Paper documents will be kept on file for 5 years and electronic documents will be kept in a drop box for 5 years. Only the researchers will have access to these documents. After 5 years all paper documents will be shredded and electronic documents will be deleted.

**6. Alternative Procedures:**

Teachers will be instructed to utilize the physical activities as they see fit as long as they are participating in the activities at least three times throughout the school day. The teachers will also be instructed to use their discretion in choosing activities from the provided list that are within their students capabilities. They may also moderately adapt any activity to meet the needs of their students or classroom.

**7. Participant's Assurance:**

This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Manager of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in Project Information Section above.

PARENTAL CONSENT INFORMATION	
Participant's Name:	Participant's Age:
Parent or Guardian's Name:	
Person Soliciting Parental Consent:	
AGREEMENT TO ALLOW PARTICIPATION IN RESEARCH	
<p>Consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.</p> <p>The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.</p> <p>Questions concerning the research, at any time during or after the project, should be directed to the Principal Investigator with the contact information provided above. This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 266-5997.</p> <p><b>Include the following information only if applicable. Otherwise delete this entire paragraph before submitting for IRB approval:</b> The University of Southern Mississippi has no mechanism to provide compensation for participants who may incur injuries as a result of participation in research projects. However, efforts will be made to</p>	

make available the facilities and professional skills at the University. Participants may incur charges as a result of treatment related to research injuries. Information regarding treatment or the absence of treatment has been given above.

Parent or Guardian of Research Participant  _____  Date	Person Explaining the Study  _____  Date
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## PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

### **Appendix C: Pre/Post Questionnaires**

#### *Teacher Pre-intervention Questionnaire*

1. *How do movement experiences influence children's learning?*
2. *Do you feel children's movement experiences are important to their learning?*  
*Why or Why not?*
3. *Do you think energizer activities or brain breaks throughout the day help children to focus on lessons in the classroom?*
4. *In your opinion, do you think children with language disorders would benefit more or less from physical activity interventions throughout the instructional period?*
5. *What challenges exist related to including physical activity in the classroom with children with language disorders?*

#### *Teacher Post-intervention Questionnaire*

1. *In your opinion, were your students more focused during instructional periods after initializing an intervention technique?*
2. *Do you think that the interventions provided a smooth transition from one classroom activity to the next?*
3. *Which types of activities did you find yourself using the most or were the most beneficial in your classroom?*
4. *Were there any changes or modifications that you made to any of the activities?*
5. *What did you find challenging about using the intervention activities in your*

## PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

*classroom?*

6. *Are the intervention activities something you will continue to utilize in your classroom?*

### *Student Pre-intervention Questionnaire*

1. *How often do you do activities in class where you get to get up and move about the classroom?*
2. *Do you sometimes lose energy or focus when you have to sit at your desk for long periods of time?*
3. *Would you like to take breaks during class to stretch and move around or would you rather stay at your desk until your work is done?*

### *Student Post-intervention Questionnaire*

1. *Did you enjoy taking breaks in the classroom to do physical activities (can provide examples of the interventions to refresh memory)?*
2. *Did you feel more refreshed and focused after doing one of these activities?*
3. *Do you think that you learned more by being active in class?*
4. *What was your favorite intervention activity?*

**Appendix D: List of Intervention Activities**

**1. Over, Under, Around and Through**

Directions:

- Teacher decides on a pattern where students go over, under, around and through imaginary or real objects.
- Lead the line of students around the room, following this pattern for at least 30 seconds each.
- Example 1 – Over a sea of sticky peanut butter, under a cherry tree, around an ice cream cone, and through a sea of Jell-O.
- Example 2 – (geography) Over a turtle, under a big dog, around the elephant and through a giraffe’s legs.

**2. Sports Galore**

Directions:

- Teacher calls out the following sports skills to mimic for at least 10-15 seconds:
  - Shooting a jump shot
  - Running through tires
  - Batting a baseball
  - Serving a tennis ball
  - Downhill skiing
  - Spiking a volleyball
  - Swinging a golf club
  - Throwing a football
  - Juggling a soccer ball
  - Shooting an arrow
  - Shooting a hockey puck
  - Swimming underwater
  - Fielding a ground ball and throwing it to first base
  - Dunking a basketball

**3. As If**

Directions:

- Teacher reads sentence to class. Have students act out each sentence for 30 seconds.
  - Jog in place **as if** a big scary bear is chasing you
  - Walk forwards **as if** you’re walking through chocolate pudding
  - Jump in place **as if** you are popcorn popping
  - Reach up **as if** grabbing balloons out of the air



## PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

- March in place and play the drums **as if** you are in a marching band
- Paint **as if** the paint brush is attached to your head
- Swim **as if** you are in a giant pool of Jell-O
- Move your feet on the floor **as if** you are ice skating
- Shake your body **as if** you are a wet dog
- Students act out each sentence for 20-30 seconds.
- Students may create their own sentences for additional activities.

### 4. Wiggles

Directions:

- Jog in place while doing the following activities.
- On teacher's signal, the students begin to wiggle their fingers.
- Then their fingers and wrists.
- Then their fingers, wrists, and forearms.
- Then their fingers, wrists, forearms, and elbows.
- Then their fingers, wrists, forearms, elbows, and shoulders.
- Then their fingers, wrists, forearms, elbows, shoulders, and rib cage.
- Then their fingers, wrists, forearms, elbows, shoulders, rib cage, and hips.
- Then their fingers, wrists, forearms, elbows, shoulders, rib cage, hips, and knees.
- Then their fingers, wrists, forearms, elbows, shoulders, rib cage, hips, knees, and head.

### 5. On the Farm

Directions:

- Teacher will call out various farm animals:
- Pig
- Cow
- Chicken
- Horse
- Rooster
- Sheep
- Dogs
- Students will mimic the farm animal (sounds and movement) until teacher calls out a new farm animal.

### 6. Stop and Scribble

Directions:

- Teacher calls out physical activity:
  - Jumping

## PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

- Twisting
- Jogging
- Jumping jacks
- Hopping
- Knee lifts
- Playing air guitar
- Marching
- Students begin activity and continue until the teacher calls out a spelling word.
- Students freeze and partners work together to try to spell the word correctly on a piece of paper.
- After 10 to 15 seconds, teacher calls out new activity.
- Continue until all spelling words are used.
- As students cool down, teacher will write correct spelling on board and students will check their work.

### 7. Morning Routine

Directions:

- Have students begin the day with a series of simple activities lasting 30 seconds or more:
  - Jumping jacks
  - Knee lifts
  - Flap arms like a bird
  - Hopping
  - Scissors (feet apart then cross in front, feet apart then cross in back)
- Follow each activity with a basic stretching movement:
  - Reach for the sky
  - Runner's stretch
  - Butterfly stretch (sit with bottom of feet together)
  - Knee to chest
  - Rotate ankles
  - Scratch your back
- Hold stretches for 10 - 30 seconds.
- Repeat a different simple activity followed by a new basic stretch as many times as desired.

### 8. Rescue 9 – 1 – 1

Directions:

- Review with the students how to make a 911 call.
- Have students use their bodies to make shapes of 9 - 1 - 1 while chanting 911!

## PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

- Review fire safety: what are the things we all need to know in order to survive a fire?
  - Practice crawling under the smoke at least 30 seconds
  - Practice “stop, drop and roll” (using space available) several times
- Review storm safety procedures:
  - Practice moving away from windows
  - Practice covering their heads

### 9. Air Writing

Directions:

- Students begin by moving in place or around the room:
  - Jumping
  - Marching
  - Hopping
  - Twisting
- Teacher calls out letter, number, word or shape and students stop activity.
- Students will draw the letter, number, word or shape in the air using their hand, arm, leg, head, elbow, knee, bottom or any combination of body parts until teacher calls out another activity.
- Students continue new activity until teacher calls out another letter, number, word or shape.

### 10. Just Dance

Directions:

- Teacher will put on a *Wii Just Dance: Kids* video (can be found on YouTube) and instruct the students to follow along.

### 11. 5-4-3-2-1

Directions:

- Students stand up and the teacher (or leader) has them do five different movements in descending order.
- For example the teacher would say: “Do five jumping jacks, spin around four times, hop on one foot three times, walk all the way around the classroom two times, give your neighbor one high-five (pausing in between each task for students to do it).”

### 12. Crab Walk

Directions:

- Have the students walk in a designated path around the room in the “crab position”.

## PHYSICAL ACTIVITY IN LANGUAGE DISORDER CLASSROOMS

### 13. Go Noodle

Directions:

- Play a video from GoNoodle ([gonoodle.com](http://gonoodle.com)) and have the students follow along.
- Pump it Up and Rainbow Breath are excellent choices.

### 14. Just Dance Kids

Directions:

- Select a Wii Just Dance Kids video from YouTube.
- Have the students stand next to their desks but with enough room so that they don't bump into each other or objects in the room.
- Instruct them to follow along with the dancers as you play the video. Make sure that everyone can see.