

# Shaking Out the Wiggles: How Can Movement Affect Brain-based Learning in the Classroom?

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## **Abstract**

I have come to learn that it is important, as an educator, to understand that children need different ways to engage themselves in the classroom. I have also learned that movement can be seen in the classroom, in ways other than transitions. This has led me to the following questions, which have guided my inquiry project such as, can movement activities excite students during instruction and change their state of learning? Can students who have difficulty keeping motivated and on task use movement exercises, as a way to keep students engaged? Lastly, can students, who have a hard time verbalizing their ideas in our brainstorming sessions, be able to bring ideas to the forefront with these simple yet powerful movement activities?

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*The way I see it is that improvisers don't look at change as an obstacle; we look at it as fuel. We know that the next great idea lies just on the other side of the change. We are constantly asking ourselves, "What can I do to incite change?"*

*-John Sweeney*

*Author of Innovation at the Speed of Laughter*

## **Teaching Context**

I am a first grade intern at Ferguson Township Elementary School, which is part of the State College Area School District. The culture of our school is that of a “family atmosphere”. Each classroom is viewed as an independent family, which fits nicely into the larger context of the school community. This also works in having students support each other in the classrooms and encouraging each other to achieve.

In looking at my first grade classroom, the gender make up of my students is that of eight males and twelve females. I have four high achievers, who are social leaders in the classroom and can influence their peers. There are no identified students that are gifted or talented. Finally, I have one student with a learning disability, who has been recently identified as a student with functioning mental retardation. I have three students who are new to the school district, but are well adapted to our classroom and I am sad to say that I will be losing one child at the end of the month because the family is moving to a new school district.

As for the reading levels of my students, all would fall into a first grade reading level, with the exception of one child who falls into a kindergarten reading level. We have four students who attend Title I enrichment classes. We also have two students who attend Response to Intervention (RTI) classes. The behavior patterns, in my classroom, encompass two children who need emotional support and two students with possible ADD/ADHD tendencies, yet this is not identified.

Overall, my students are generally well behaved. Social relationships take shape in my classroom, with three students who are easy to get along with, but have trouble getting work done, two quiet students, who are anxious to conform, and finally one nonconformist, who represents challenges in terms of behavior. This latter student would fall as a six in terms of challenge on a scale from one to ten. I believe that each child brings their own unique outlook to the classroom and these different attributes are what make our classroom our own functioning community of learners.

## **Rationale**

I have come to learn that it is important, as an educator, to understand that children need different ways to engage themselves in the classroom. I have also learned that movement can be implemented into instruction, with some thought on the part of the teacher. I was excited to see in what other ways I would be able to incorporate the use of movement activities into my classroom. I hoped to see my students activate their imaginations and stay motivated to learn. My mentor and I spoke about our concern that our students may be getting bored with our routine instruction. I believe though, that recently my students have become more interested in our writers' workshop because of the integration of movement and imagination into our instruction. This led me to my inquiry wonderings and questions.

I believe these questions affected my teaching because it allowed me to feel comfortable enough to integrate new forms of instruction, particularly with the integration of movement into my lessons, to maximize student learning. I have also been introduced to the beliefs of brain-based learning, through my research, and hope to incorporate some of these beliefs into my current and future classrooms to engage students through movement.

## Wonderings and Questions

### *Main Question:*

How does movement affect brain-based learning in instruction?

### *Sub Questions:*

Can movement activities be a way to incorporate imagination into a first grade classroom?

Can movement activities also engage and excite students during instruction?

Can students who have difficulty keeping motivated and on task use movement exercises, as a way to stay on task?

Can movement exercises be used in writers' workshop to incorporate the aforementioned?

Can students, who have a hard time verbalizing their ideas in our brainstorming sessions, become more capable in bringing ideas to the forefront, with these simple, yet powerful, movement activities?

## **Inquiry vs. Project**

I came to this project because I have always been interested in how movement can add to a student's experience in the classroom. There are times when I wonder if my students are even listening to me, because they are squirming around our front carpet during instruction. I have noticed that they do not have their minds focused, especially during the brainstorming process of our writers' workshop because in brainstorming with the children, I learn that it is hard for them to articulate their ideas. I wanted to see how I could possibly engage the students and allow them to be actively engaged during instruction, by incorporating movement into my instruction.

This inquiry is not simply a betterment project because I feel that movement in the classroom is already one of my strengths. I have been incorporating some form of movement into my lessons since the beginning of the year yet; this project is inquiry based because I want to see how one of my strengths can possibly engage my students into making instruction more efficient.

## Inquiry Plan

*“Linking the body and mind with the spirit of learning can improve the likelihood of meeting both the [students’] needs and the educator’s goals in learning. Applying these brain-based strategies can engage the learner, focus attention, and increase the involvement of the [students].”*

*-Patricia Trapp*

*Author of Engaging the Body and Mind with the Spirit of Learning to Promote Critical Thinking*

When I began to plan how I was going to incorporate my inquiry project into my daily instruction, I began to look at the structure of my day in the classroom, to see where movement could possibly be incorporated. I began to look at my prior days and found that I incorporated deliberate movement at the “fun” times of our day, such as the morning openings and greetings, where I showed the students such activities as a “Scarecrow Search”, “Tootie Ta”, “Mother Goose”, and “Howdy Neighbor”. When I incorporated movement into my openings and greetings, it was because I wanted to get my students moving and awake in the morning but I wanted to see if I could adapt this idea during instruction when I felt my students were getting antsy in the classroom. When I began my research I was surprised to find how psychologist have studied this simple idea and that a school of thought entitled “brain-based learning” centered on the principles of:

Understanding where the brain’s strengths lie is critical to successful teaching and learning in the agricultural education classroom. This belief of brain-based learning is a foundational component of teaching for motivating students to experience success in school and life. Brain-based or naturalistic learning considers what is natural to our brain, and how the brain is impacted by circumstances and experiences. How exactly is the physical brain designed to learn? (Hileman, 2006)

Another important question, which one of the leading brain-based researchers, Eric Jensen, asks “What is good for the brain?” is part of a new wave of adapting instruction

to meet the needs of different types of learners in the classroom (Jensen, 2000). With this knowledge, I discovered that with my own personal research, I would be able to find ways to integrate movement into my lessons. Now the question was when and how would I integrate this movement.

As I continued to complete my research, I found that many of the things I noticed in my classroom, in terms of my students' state of mind during lessons, could be altered, by making slight changes during my lessons. As Ellen B. Church explains in her article, *Liven Up Literature At Group Time*, "Sitting for extended periods of time can have detrimental effects on body...Students who are required to stand or move around during a lesson have less physical fatigue and therefore concentrate more efficiently on the concepts or tasks at hand" (2006). The text explains that by simply changing the students' position during instruction, from sitting to standing, teachers can positively impact student engagement. This belief was one that caused me to rethink how I wanted to integrate movement into my classroom. I decided I would not simply focus on the deliberate movement in the classroom, as seen through morning meetings and also transitions in the classroom, but I would expand the realm of movement into my daily lessons to engage my students in material.

When I made this connection, I decided to begin my daily lesson planning by trying to center my lesson on both the standards, which needed to be achieved, and also what movement activity I could integrate. This is where I began to adapt movement activities, which I have become comfortable with such as our class bear hunt morning greeting to fit our current unit of Underwater Life, where we would dive down through the four deep sea zone in search for the unique animal, the rattail. (See Appendix) I soon

began to notice, through observations that my students really focused in on my lesson when they were able to get up and “feel” the lesson. This soon led me to include our “scuba dives” in the classroom, where I would have students put on their construction paper masks, and have them imagine they were on a boat traveling to the kelp forest or coral reefs and have them dive to examine the different plant and animal pictures set up on their sets. This movement throughout the classroom really got the students awake and moving by swimming from set to set to learn about the different underwater life.

Since our science and social studies units are so tightly linked with our language arts curriculum, I found that during lessons where students were completing entries into their “Discovery Journals”, movement exercises were an easy way to get students moving during lessons. Yet, during lessons, where movements such as these were not as easily integrated I found that by simply stretching with my students after a read aloud or class discussion, I was able to refocus their attention by allowing students to change their position in the classroom. During stretches, I would have students stand and depending on the weather or holiday we would reach in the sky for different objects (See Appendix).

Towards the end of my inquiry project, I was also given the opportunity to integrate movement into a lesson of poetry (See Appendix). I found this an exciting challenge because up until this point I was recycling movement activities, which I could easily adapt for a new lesson in science or social studies but I was interested in pushing myself to expand and create a new movement activity by setting motion to poetry.

During our writers’ workshop time, I completed a mini-lesson on feeling movement through poetry by setting the poem “Beautiful Giant” to motion. (See Appendix) I was

also able to connect motion during my cinquain poetry lesson, where we spoke of action verbs, such as acting out the verbs, “lurching” and “swaying”.

As Eric Jensen states in, Brain-Based Learning: The New Science of Teaching and Training:

Despite research findings to the contrary, the erroneous separation of mind and body in the traditional education system stubbornly persists. Indeed, many special education teachers, sensory integration teachers, occupational therapist, and physical education teachers have long recognized the connection between physical and mental learning, but overall, schools have not kept up with the research that links physical movement with thinking processes. (Jensen, 2000)

This belief was one of the most important quotes I found during my research because I realized that in traditional education, many times students’ needs are not being met. Yet, I believe that with the simple act of incorporating movement into daily instruction, students are able to find new ways to become engaged in lessons and teachers are able to find new outlets for children to express their thoughts.

## Data Collection

Throughout my inquiry process, the majority of my time was spent with data collection. I wanted to see if I would be able to collect enough data to find that I was connecting with my students during my movement activities and if it would transpire into their writing. As seen through my inquiry timeline, (See Appendix) I wanted to collect data from multiple sources and touch base with my students to see if I was able to reach them during instruction. I was very interested in collecting data, which showcased students' participating in movement activities and observations of student engagement.

### *Journal Reflection/Observations*

I believe that my journal reflection for my Curriculum and Instruction course best explains my observation reflections:

This week, I have come to learn that it is important, as an educator, to understand that children need creativity in the classroom. I have also learned that imagination can be implemented into instruction with some thought on the part of the teacher. In a first grade classroom, utilizing the student's imagination is imperative to allow children to step down from their egocentrism and allow them to expand their learning. I have found that in our classroom, it takes time to incorporate imagination into the already very structured curriculum yet; I believe I have found a way to make this connection.

The answer to this imagination problem is movement activities. I believe that through movement exercises, such as our "Bear Hunt" and "Underwater Exploration", students have been able to use their imagination in our classroom. I believe these exercises, on top of expanding students' imagination, have also

engaged and excited students' during instruction. Students who I have difficulty keeping motivated and on task have made a connection with these movement activities, as a way to showcase their working imagination. I have found this particularly useful in our writing workshops where I am able to use movement exercises as a way for students to use their imagination during our brainstorming session of the writing process. I have noticed that even my students, who have a hard time verbalizing their ideas in our brainstorming sessions, are able to bring more ideas to the forefront with these simple, yet powerful, movement activities (1/27/07).

### *Observations*

Along with my personal observations in the classroom, I also asked for my mentor teacher's assistance during my data collection process, by having her observe the overall engagement of my students during a lesson, where movement was integrated (See Appendix). I felt that by having a new set of eyes observe students' engagement, I would be free to interact with the students without having to focus on making my own observations and have fun along with the students during the movement activities. As the author Laurie Rodger explains, "Teachers can think in terms of movement, be flexible, go with the flow, join in, and observe or support children" (1996). It was at this time that I was able to "go with the flow" and have the students participate in the motions along with me so we can have fun and learn together in the classroom.

### *Teacher Survey*

During the data collection process, I also decided to send a teacher survey out to my colleagues at Ferguson Township Elementary (See Appendix). I wanted to gauge

how other teachers, particularly across multi-age settings, were incorporating movement into their classrooms. Nine copies of the teacher surveys were returned, out of the original fourteen copies I had sent to the existing teachers at Ferguson. This teacher survey was very enlightening, as to see how different teachers perceived movement in their classrooms. I received such a wide range of answers, that when I sat down to analyze the data I noticed a great variation of responses to use during my analysis process (See Data Analysis).

### *Student Interviews*

Lastly, and I believe the most important piece of data collection, was that of student interviews, which I administered during a week time span (See Appendix). I wanted to interview my students to see if my students enjoyed the movement activities, if they believe that it helped them concentrate, and also if it engaged them during our lessons. I decided to hold the interviews at lunchtime, where the students were able to come to the room and eat lunch with me. I felt that this is where I would have students' attention, without missing one of their favorite activities, recess, or take away from class work. I choose to interview 10 out of my 20 students to get a spectrum of both ability levels and gender differences. I interviewed three of my lower achievement level students, four of my middle achievement level students, and three of higher achievement level students. I also selected an equal balance of gender differences with five girls and five boys. I felt that by taking a representation of the class as a whole, I would be able to assess my students likes and dislikes with our movement activities and also if the motions were engaging students during instruction (See Data Analysis).

## Data Analysis

*“Ms. Swift, I just really need to stretch right now!”  
-Student C. (first grader)*

### *Observations*

For my observations, I wanted to see how the movement activities changed my students learning states and if students became more engaged during instruction after movement activity was implemented. I found the best piece of observation evidence, was that of my mentor teacher’s engagement observations (See Appendix). On March 28<sup>th</sup>, 2007, my mentor observed my students, in terms of their overall engagement. She noted that, “Initially most students were very attentive” as I began to read a charted poem for my poetry lesson. My mentor observed that, “Gradually, more and more students lose attention- more looking around, moving around while staying in place, arms overhead stretching, legs becoming uncrossed”. When movement activity, “Going On an Octopus Hunt” were implemented, my mentor observed that the “movement was being used to learn by integrating concepts and/or give a break after sitting and listening for long periods” (See Appendix).

In discussing my mentor teacher’s observation notes, I found that after movement activity several children were engaged by raising hands to add to our class discussion and also all children were looking at my poem chart. Even though she did observe a few “couple quiet side discussions” overall students’ engagement level was very high.

### *Teacher Surveys*

In analyzing the data from my teacher surveys I found that from teacher to teacher, the belief of what “movement” is in the classroom varied. The survey had two parts. I began with two questions which asked for specific numbers of how many times

teachers incorporated movement into their classrooms. For the second half of the survey, I decided to keep the prompts open-ended to elicit a wide variety of ideas (See Appendix).

I designed the survey so that the first two questions asked teachers to explain how many times they incorporate movement to engage students in their lessons. I found that:

- 1 teacher uses movement 1-2 times per month
- 2 teachers use movement 1-2 times per week
- 2 teachers use movement 3-4 times per week
- 4 teachers use movement 5 or more times per week

My second question asked how often do teachers feel they incorporate movement to change their students' state of learning. I found that:

- 0 teachers never use movement
- 1 teacher uses movement 1-2 times per week
- 4 teachers use movement 3-4 times per week
- 4 teachers use movement 5 or more times per week

Through the open-ended questions, I found that some teachers solely incorporated movement into their classrooms, in the form of transitions, others were able to add movement into their classroom during instruction time. Many teachers were interested in how movement could be incorporated into a daily writers' workshop and others offered their own suggestions on how they integrated movement into the classroom (See Appendix).

### *Student Interviews*

During my student interviews, I found many enlightening comments on the part of my students. The students' interviews opened up my eyes because many of my students perceived our movement activities as a fun break in our lesson. When I asked my low group if they learned during our movement activities, they responded "no" but were able to recall facts that we discussed about the different zones of the ocean and the animals we looked at.

Also, my lower achievement level boys said they were embarrassed and did not like movement activities yet, I have observed these two boys are also the ones who are smiling and leading the other boys during our movement activities. Many of the students exclaimed that they liked the movement activities because they feel that the movement activities "wake them up" (See Appendix).

## Claims

### *Claim 1: Students are more engaged after changing their state of learning*

Through my research and student observations, I have found that students are actively engaged after incorporating movement exercises into a lesson. As Jensen explains, ways to incorporate movement into the classroom are to:

- Use more slow stretching and breathing exercises to increase circulation and oxygen to the brain.
- Incorporate energizers every twenty minutes or so.
- Make sure that some of your planned activities have built-in components of physical movement.
- Facilitate hand movements each day with clapping games, dancing, puzzles, and manipulatives. Invent new ways to shake hands or greet each other.
- Engage learners in cooperative activities and group work.
- Provide activities that offer varying levels of physical and mental challenge.
- Offer novel activities, learning locations, and choices that require moving.
- Depending on classroom personalities, give learners permission to get up without permission, to move around, stretch, or change postures, so that they can monitor and manage their own energy levels (Jensen, 2000).

These activities can help students learn in several ways. As Laura Erlauer reports, “Just standing up can increase the blood flow in the human body, bringing more oxygen to the

brain. The increased oxygen gives the brain more energy and reduces stress, and it promotes the production of hormones that enhance the growth and strengthen the connections between the brain cells” (Erlauer, 2003). This was seen in my classroom, when I interviewed my students and learned that many of them said that the movement exercises woke them up. Student D. explains that she enjoys the movement activities, “because it’s fun to get up and I get really hyper after and don’t fall asleep” (See Appendix).

*Claim 2: Movement can be integrated into the classroom with a little time on the part of the teacher during the planning process of lessons*

Through my inquiry, I have come to learn that movement can be easily integrated into instruction but it may require for teachers to add some additional time with planning.

As Eric Jensen explains, teacher should:

Be purposeful about integrating movement activities into everyday learning. Provide much more than mere hands-on activities. Facilitate daily stretching exercises, walk and talks, dancing, role playing, seat-changing, quick energizers, and movement games. Brain-compatible learning means weaving math, movement, geography, social skills, role-playing, science and physical education together. (Jensen, 2000)

Many times, I began my lesson planning with focusing on the standards I wanted my lesson to meet, and also the movement activity I would like to incorporate into my lesson. This act of reflection before a lesson, allowed me to structure my lesson to accompany the beliefs of “brain-based” learning.

*Claim 3: Movement does not have to be an elaborate activity*

I have found that the simple act of having students stand and stretch can positively impact student learning. Many times, even as adults, when we are sitting too long

through a presentation or even a movie, we may feel that we need to reposition our bodies to reengage ourselves. This principle transfers into the classroom where students' attention span is approximately 20 minutes. By offering students simple outlets, as a teacher, you are not taking away from instructional time rather adding to the amount of time students are able to focus on the lessons. The evidence of this is seen through my observations of my students during a lesson. When I begin to see my students checking out of a lesson, I have my students stand and engage in stretching exercises with me to reposition their bodies in the classroom and give them time to reengage themselves, in the lesson. Our stretches, which last a total of three minutes actively get the students moving and offer a mini-break from instruction so that they are ready to begin learning effectively again.

#### *Claim #4: Students can learn through movement*

Through my research, I have found that the author Patricia Trapp best defines Jensen's idea of learning states by explaining, "Another aspect of learning is awareness that learning takes place both consciously (being aware of what you are learning) and unconsciously (not being aware of what you are learning)" (Trapp, 2005). When asked, many of my students responded that they did not learn things during our movement activities and they were just fun, but in asking students to discuss what we did during our activities, students can recall different facts, such as the names of the four deep sea zones and the animals, which call these zones their homes. I believe that the best learning takes place when students do not realize they are learning at all. This is exactly what the integration of movement activities into the classroom can do for both students and teachers.

## Conclusions

From this inquiry project, I have learned that it is important to always try to integrate the latest research into my daily instruction. This has had an influence on my current practice in my classroom and I believe that this belief will carry to my future classroom as well. I have also learned how important it is to really understand how children perceive instruction in the classroom. By having conversations with students one is able to understand their needs in the classroom and how to better plan for their instruction.

I hope that I will always be able to bring movement into my classroom to better the instruction for my students. I believe that all students can benefit from movement activities in school. It takes the part of the teacher to understand how movement can be integrated into the curriculum to meet the needs of their students. Every child learns differently in the classroom, and by incorporating movement into daily instruction, students who are kinesthetic learners will be able to take away more from lessons. Being a great teacher is about constantly adapting instruction to give your students the best possible education. I plan to always integrate new learning methods, such as movement, into my daily lessons to better help my students learn.

## New Wonderings

During the course of my inquiry project, I began to formulate a list of new wonderings as I began to collect and analyze my data. I began to wonder how effectively my movement activities would work in a multi-age setting of an elementary school. Also, I understand that different personalities of students may take to movement activities differently. As I continued thinking through my wonderings, I found I continued to expand upon my wonderings. Some of these additional wondering include:

- Will students come to a point where they are saturated with movement activities in the classroom and these activities will not be able to engage students further?
- Is there a way to incorporate movement activities into every lesson during the day?
- One wondering, which I began to explore at the end of the inquiry process, is that of, are there ways to use movement activities, not so much as a way to break up instruction, but to ground lessons in movement so that they flow continuously during a lesson?
- Can one movement activity fully engage all learners?
- Is there an easy way to gauge students engagement other than through observations and conversations with the students?
- I have found that I am very comfortable using movement in the classroom but can movement be used by teachers who feel less comfortable with movement activities?

- This also leads to the question, do I engage learners because of my movement activities or because I am more “myself” with using movement activities in the classroom.

I am hoping that as I continue to incorporate movement into my classroom, I will be able to answer some of these aforementioned wondering to continue to grow as an educator to structure better lessons for my students.

## References

- Church, Ellen B. (2006). "Liven Up Literature At Group Time." Early Childhood Today; Vol. 20: 44-45. Professional Development Collection. 5 Feb. 2007. <http://search.ebscohost.com/login.aspx?direct=true&db=tfh&AN=20443859&site=ehost-live>.
- Erlauer, Laura. (2003). The Brain-Compatible Classroom: Using What We Know About Learning To Improve Teaching. Alexandria: Association for Supervision and Curriculum Development.
- Hileman, Sarah. (2006). "Motivating Students Using Brain-Based Teaching Strategies" The Agricultural Education Magazine; Vol. 78: 18-20. ERLWebSPIRS:Wilson. 5 Feb. 2007. [http://web5s.silverplatter.com.ezaccess.libraries.psu.edu/webspirs/start.ws?customer=c150119&databases=\(FT\)](http://web5s.silverplatter.com.ezaccess.libraries.psu.edu/webspirs/start.ws?customer=c150119&databases=(FT)).
- Jensen, Eric. (2000). Brain-Based Learning: The New Science of Teaching and Training. San Diego: The Brain Store.
- Sprenger, Marilee. (2002). Becoming a "Wiz" at Brain-Based Teaching: How to Make Every Year Your Best Year. Thousand Oaks: Corwin Press.
- Rivkin, Mary S. (2006). "Moving & Learning TOGETHER!" Early Childhood Today; Vol. 20: 32-35. Professional Development Collection. 5 Feb. 2007. <http://search.ebscohost.com/login.aspx?direct=true&db=tfh&AN=20443856&site=ehost-live>.
- Feldman, Jean. (2000). Transition Tips and Tricks For Teachers. Beltsville: Gryphon House.
- Rodger, Laurie. (1996). "Adding Movement Throughout the Day" Young Children; Vol. 51: 4-6. ERLWebSPIRS:Wilson. 5 Feb. 2007. [http://web5s.silverplatter.com.ezaccess.libraries.psu.edu/webspirs/start.ws?customer=c150119&databases=\(FT\)](http://web5s.silverplatter.com.ezaccess.libraries.psu.edu/webspirs/start.ws?customer=c150119&databases=(FT)).
- Trapp, Patricia. (2005). "Engaging the Body and Mind with the Spirit of Learning to Promote Critical Thinking" The Journal of Continuing Education in Nursing; Vol. 36: 73-76. ERLWebSPIRS:Wilson. 5 Feb. 2007. [http://web5s.silverplatter.com.ezaccess.libraries.psu.edu/webspirs/start.ws?customer=c150119&databases=\(FT\)](http://web5s.silverplatter.com.ezaccess.libraries.psu.edu/webspirs/start.ws?customer=c150119&databases=(FT)).
- Wood Ray, Katie. (2001). The Writing Workshop: Working Through the Hard Parts (and They'Re All Hard Parts). Urbana: National Council of Teachers of English.

## Appendices

### Appendix A

#### *Inquiry Timeline*

##### *February*

- ❖ The week of 2/19/07: Collection of baseline data through observations and discussion with children.
- ❖ The week of 2/26/07: Teacher interviews

##### *March*

- ❖ The week of 3/5/07: Data collection continues with integrating student interviews.
- ❖ The weeks of 3/12/07 - 3/19/07: Assessment of student's learning through artifacts
- ❖ The weeks of 3/12/07 - 3/26/07: Data analysis begins

##### *April*

- ❖ Continuous during the month: Continue with integrating movement activities
- ❖ 4/2/07 - Compile data analysis
- ❖ 4/2/07 – 4/9/07 Assemble paper for presentation

## Appendix B

### *Teacher Survey*

#### **Teacher Survey**

Dear Ferguson Teachers,

I hope that you will take the time to assist me in my Inquiry Project, which focuses on the topic of, "How can movement affect Brain-based learning in the classroom, particularly in writers' workshop?" I am interested in seeing how movement is viewed in your classroom and also if there is a range of movement activities, based upon grade level, which seem to engage students during instruction. I look forward to reading your responses on how you may incorporate movement into your classroom. Please place an "x" under the appropriate response. Please return by Friday, March 9<sup>th</sup>, 2007. Thank you for your time and help.

Sincerely,

Erin Swift  
First grade intern

How often, would you say, you incorporate movement to engage students in lessons?

9 surveys total

<b>Never</b>	<b>1-2 times per week</b>	<b>3-4 times per week</b>	<b>5 or more times per week</b>
1 (1-2 times per month)	2	2	4

How often do you feel you incorporate movement into your classroom to change your students' state of learning?

Never	1-2 times per week	3-4 times per week	5 or more times per week
0	1	4	4

**Is movement in the classroom only seen in transitions during the course of the day? If no, what activities do you incorporate movement into?**

No, movement is incorporated with spelling activities, occasionally with writer's workshop when we are studying non-fiction books, and when demonstrating the difference in combining and separating with math problems.

Most of the time, yes. Especially when kids seem real antsy we will take a stretch break. I model certain stretches and they repeat for about 2-3 minutes.

Morning greeting, indoor recess, some learning activities, relaxation.

Most of our movement is part of our transitions and occasionally part of our morning routine with patriotic songs.

Movement is seen in science by forming human models of one-celled animals to show movement s-waves (hop up and down) and p-waves (shake body side to side) to make earthquakes. In math, use arms to show parallel or perpendicular lines and estimating lengths. Classroom meetings through games and activities.

Any time the students are having difficulty focusing, music/movement/finger plays are used to help some of that extra energy. The class this year is very active and need "structured" short movement activities during most transitions.

No, many of our daily routines and lessons.

No, games such as "Simon Says" and "Follow My Lead".

I take into account how long a student will be at their seats, or on the rug for instruction. If they sit too long, they definitely get bored, and do not pay attention. If it cannot be helped, and they do have to sit on the rug for a long period of time, I let them have a silent stretch break.

**If you integrate movement into your classroom, do you feel that it is routine movement, which is repeated daily?**

Yes, kids are used to it and know what is expected of them.

Not exactly.

Mostly

Each day, there is an "activity song time". A child chooses one of the songs (usually from one of our C.D.'s) to guide the class to the movements.

No, unless you count transitions from one area of the room to another.

Yes, but it is not always daily.

Some are routine and some are used as I observe my students and feel there is a need for movement to change their state of learning.

No, if kids seem real antsy we will take a short stretch break.

Yes, with first grade students routines are safe and comfortable to them.

**Do you believe movement can be easily integrated into daily instruction in multiple subject areas? If yes, do you integrate movement into a multitude of subject areas and can you provide an example?**

Yes, I have a wealth of movement records and C.D.'s we get out at indoor recess and do them. Also, integrate movement into science and social studies.

I think integrating movement into daily instruction in multiple subject areas takes thought and planning in order to maintain the integrity of the lesson and to know when/what will be appropriate for the class.

Yes, I do believe movement can be easily integrated into daily instruction, but I find that sometimes my students have a hard time handling it.

Yes, science, math, and classroom meetings.

Handwriting- Songs about appropriate pencil grip, where to start letters, and numerals. Math - Hap Palmer/Greg and Steve/ Dr. Jean C.D.'s. Social Studies/Science- previously mentioned and acting out poems. Language Arts- same as above.

Yes, Math sorting, counting, people patterns.

Yes, but not as much as I would like. I think it is very important.

Yes, I like how our music teacher has our class walk to their seats with the beat/rhythm of the music she has playing when we get there.

Yes, during math with surveys you can make a human graph for the survey.

**Do you believe movement can be used with writers' workshop to increase the brainstorming phase of the writing process? If yes, do you integrate this into your writers' workshop?**

Depends on the teacher style of delivering writing ideas. I use think-pair-share to help students brainstorm ideas and honestly never thought about movement. I think movement could work with poetry, which I will be teaching at the end of the year.

Usually, when we think about "writers" in 4<sup>th</sup> grade, we think about writers choosing a comfortable, cozy, and quiet place. I usually try to keep everyone "still" during writers' workshop, unless they are conferencing.

Yes, but we often tend to stretch rather than organize an activity.

Yes, the child could "act" out their story ideas.

Interesting possibility...I am curious if others are able to do this.

I can't quite visualize this, during writing workshop (3x's per week for 60 minutes each time) in my class-students are free to move where they like to write.

Writers' workshop is one area I have not used movement. I would love to hear ideas!

Creative dramatics could be used. No, I have not used it particularly in conjunction with writers' workshop on an on-going way. Children have acted out stories and then retold them, as one particular way I have used movement.

Never thought of this before but would like to know more.

## Appendix C

### *Student Movement Interviews Transcript*

#### **1) When we are sitting on the front carpet for a long time and you feel tired what do you like to do?**

*E. (high) I like tootie ta because its funny and gets me awake..we move a lot*

*I. (middle) I like to move around a little bit and get energy so I don't fall asleep*

#### **2) Do you like when we stretch when you are feeling tired?**

*A. (low) YES!! We are stretching and it wakes you up. Sometimes when you stretch it gets you up faster.*

*D. (middle) Because its fun to get up and I get really hyper after and don't fall asleep*

*B. (middle) Because it feels good when you are tired and when you are sitting down for a long time and you stand up and stretch it feels good*

#### **3) What is your favorite activity we do to get us moving in the morning?**

*D. (middle) Tootie Ta*

*B. (middle) Scuba Dive*

*M. (middle) Rattail Hunt*

#### **4) Do you like when we go on our bear hunts? Ocean dives? Act out poetry? What different things did you learn?**

*L. (high) I love the octopus hunt because I like moving*

*E. (high) We climbed over the rocks and we have to be careful because there is water on the rocks that will be slippery*

*L. (high) We learned about the spring tide...I like to do the motions*

#### **5) Do you like to write? If no, do you like it more when we get moving before hand so you aren't as tired? Does it help you get some ideas in your head to write about?**

*L. (high) Because then I get ideas when I am doing the octopus hunt and I start writing what I like to do*

*E. (high) I think getting pictures in my head of what we are doing is easier because we are doing stuff...it helps me think of what we are doing our motions and its gets in my head and I start thinking about it.*

*A. (low) Its like you are on a movie...because it can give you more energy to write and concentrate.*

## Appendix D

March 28, 2007  
Poetry Writing  
Movement Activity

Erin Swift

- Children watching chart as poem is read.
- Initially most students very attentive
- Gradually, more & more students lose attention - more looking around, moving around while staying in place, arms overhead stretching, legs becoming uncrossed.
- Children tune in better with a medium tone from you. It sounds more natural & they do not have to strain to hear you.

"Going On A ... Hunt"

- Children looking @ chart
- Several hands up
- a couple quiet side discussions

- voice
- one word answers
- usual w/ chart + picture

- Excellent choice of poem "Beautiful Hunt"
- Movement being used to learn integrating concept and/or give a break after sitting & listening for long periods.

(See Lesson Plan #2 Appendix E for matching lesson)

# Appendix E

## Lesson Plan #1

### BASIC INFORMATION

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<b>Grade/Level:</b>	1
<b>Date to be Taught:</b>	Thursday - March 8th, 2007 9:00am-10:15am
<b>Time Frame:</b>	1 class period. 1 Hr per class.
<b>Subject:</b>	Science
<b>Topic:</b>	The Animals of the Kelp Forest
<b>Summary:</b>	In this lesson, students will be exploring the animals of the kelp forest.

### OUTCOMES/OBJECTIVES AND STANDARDS

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<b>Objectives/Learning Outcomes:</b>	In this lesson, students will discuss the different animals found in the kelp forest and why they call this environment their home.  Students will complete their "Shark Activity" by writing one fact or one opinion about sharks.
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<b>Standards:</b>	<p><b>PA- Pennsylvania Academic Standards</b></p> <ul style="list-style-type: none"> <li>• <b>Subject :</b> Environment and Ecology</li> <li>• <b>Area 4.6:</b> Ecosystems and their Interactions           <ul style="list-style-type: none"> <li>• <b>Grade 4.6.4:</b> Grade 4               <ul style="list-style-type: none"> <li>■ <b>Standard A.:</b> Understand that living things are dependent on nonliving things in the environment for survival.                   <ul style="list-style-type: none"> <li>• Identify and categorize living and nonliving things.</li> <li>• Describe the basic needs of an organism.</li> <li>• Identify basic needs of a plant and an animal and explain how their needs are met.</li> <li>• Identify plants and animals with their habitat and food sources.</li> <li>• Identify environmental variables that affect plant growth.</li> <li>• Describe how animals interact with plants to meet their needs for shelter.</li> <li>• Describe how certain insects interact with soil for their needs.</li> <li>• Understand the components of a food chain.</li> <li>• Identify a local ecosystem and its living and nonliving components.</li> <li>• Identify a simple ecosystem and its living and nonliving components.</li> <li>• Identify common soil textures.</li> <li>• Identify animals that live underground.</li> </ul> </li> </ul> </li> </ul> </li> </ul>
<b>Prerequisite Skills:</b>	Students have been previously introduced to the kelp forest during our introductory lesson.

### ASSESSMENT OF STUDENT LEARNING

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<b>Assessment Activities/Rubric:</b>	Students will be informally assessed through their participation in our classroom discussion about the animals of the kelp forest.  Students will be formally assessed through the completion of their shark fact and opinion.
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### MATERIALS AND TECHNOLOGY

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<b>Student Materials:</b>	Discovery Journals pencils
<b>Teacher Materials:</b>	pictures of kelp forest animals ocean CD painted shark cutouts

## LESSON SEQUENCE AND PROCEDURES

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<b>Introduction (Hook):</b>	<p>Begin the lesson by asking students if they remember what the new underwater environment that we are going to study is? Ask students what they remember about this new environment of the kelp forest. Remind students when we discussed opinion and facts in my station. Ask students what is the difference between opinions and fact? (i.e. opinions may not be true for everyone but a fact is always true) Explain to students that the other day Ms. Clair asked a question, "Why do you think sharks like to live in the Kelp Forest?" and that you thought it would be a good question to write about a little more.</p> <p>Explain that you would like students to think about their opinion of why sharks may live there and return to their seats to write one sentence containing their opinion, in their discovery journals.</p>
<b>Sequence of Instruction (Step 1, Step 2...):</b>	<p>Have students return to their seats and write their opinion sentence.</p> <p>When students are finished, have them return to the front carpet and explain to students that we are going to dive down into the kelp forest today to examine the different animals that lives in this special forest. Have students pretend that they are putting on their air tanks and diving off their boat to explore the kelp forest. (place pictures of the animals on the desks)</p> <p>(Put on Ocean Music) Have students swim around the classroom looking at the different animals found in this underwater ecosystem. Have students return to the front of the carpet and ask the students to discuss the different animals. Pull out the picture of the shark. Ask students what other environment did we meet the shark in? Ask students why they believe that that the sharks have moved from the deep sea's sunlight zone to the kelp forest. Ask students to share their opinions from the beginning of class.</p> <p>After opinions are shared, explain to the students that now we are going to look at some shark facts. Ask students again what is a fact? Share shark facts.</p> <p>Explain to students that now they are going to return to their seats and write a sentence about their favorite shark fact on their shark cutouts.</p>
<b>Closure/Wrap Up:</b>	<p>Have students share their shark fact sentences.</p>
<b>Independent Practice (where appropriate):</b>	<p>Students will return to their seats and complete their shark fact on their shark cutout.</p>
<b>Differentiated Instruction:</b>	
<b>Possible Follow-Up Activity:</b>	<p>Read aloud about the kelp forest.</p>

## Lesson Plan #2

### BASIC INFORMATION

<b>Grade/Level:</b>	1
<b>Date to be Taught:</b>	Wednesday - March 30th, 2007 9:00am-10:00am
<b>Time Frame:</b>	1 class period. 1 Hr per class.
<b>Subject:</b>	Language Arts (English), Poetry
<b>Topic:</b>	Underwater Life Poetry
<b>Summary:</b>	In this lesson, students will create an original poem about their favorite underwater life animal, in the tide pool.

### OUTCOMES/OBJECTIVES AND STANDARDS

**Objectives/Learning Outcomes:** Students will demonstrate an understanding of using adjectives to describe objects in a poetic manner.

Students will complete a "starfish" poem on their favorite tidal pool animal.

**Standards:**

**PA- Pennsylvania Academic Standards**

- **Subject :** Reading, Writing, Speaking and Listening
  - **Area 1.3:** Reading, Analyzing and Interpreting Literature
    - **Grade 1.3.3:** Grade 3
      - **Standard C.:** Identify literary devices in stories (e.g., rhyme, rhythm, personification).
      - **Standard D.:** Identify the structures in poetry (e.g., pattern books, predictable books, nursery rhymes).
      - **Standard F.:** Read and respond to nonfiction and fiction including poetry and drama.
  - **Area 1.4:** Types of Writing
    - **Grade 1.4.3:** Grade 3
      - **Standard A.:** Write narrative pieces (e.g., stories, poems, plays).
        - Include detailed descriptions of people, places and things.
        - Use relevant illustrations.
        - Include literary elements (Standard 1.3.3.B.).

**Prerequisite Skills:** Students have been previously introduced to poetry during read alouds. Students have also studied the different animals in the tide pool.

### MATERIALS AND TECHNOLOGY

**Student Materials:** Cut outs of starfish on construction paper  
Pencil

**Teacher Materials:** cut outs of starfish  
construction paper  
large pictures of tide pool animals  
Poetry read aloud entitled, Beautiful Giant.  
Scientist/Poet Chart

## ASSESSMENT OF STUDENT LEARNING

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**Assessment Activities/Rubric:** Students will be informally assessed through observations of our classroom discussion of looking at an object through a poet's eye. Students will be formally assessed through their use of adjectives to describe their favorite tide pool animal.

## LESSON SEQUENCE AND PROCEDURES

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**Introduction (Hook):** Explain to students that today we are going to become poets and create our own poetry.

Explain that you have a poem to read to the students and you want to see if the students can find out what you are describing in the poem.

Read "Beautiful Giant" poem aloud to the class.

Ask students what we are describing in the poem.

Discuss the words that the author used to describe the ocean. (i.e. a surface of glass)

Discuss how being a poet you can use words to describe an object but it doesn't really have to be what you describe. (i.e. is the ocean really glass but does it look like it?)

**Sequence of Instruction (Step 1, Step 2...):** Explain to students that today we are going to be going on an octopus hunt again and look at the different animals found in the tide pool.

Have students stand in a circle and repeat lines...

I'm going on an octopus hunt.  
 And I'm not scared  
 I've got a friend by my side  
 So I'm not scared  
 What do I see?  
 The rocky shore in front of me  
 I can't go under it  
 I can't go around it...  
 I'll have to go over it...

(Ask students what they see as they climb over the rocks? Tell them to be careful because the rocks may be slippery)

Repeat chorus  
 What do I see?  
 The high spring tide in front of me.  
 I can't go over it  
 I can't go under it.  
 I'll have to swim through it...

(Remind students that the water is very high since it is the high spring tide)

(Repeat Chorus)

What do I see?  
 The tide pool in front of me.  
 I can't go over it  
 I can't go under it  
 I'll have to go through it...

(Tell students that we have to be careful and not disturb the animals living in the tide pool...Ask students what animals they see)

Have students wade through the pool and say you feel something squishy. I feel something with long tentacles. It must be the octopus...Have students wade back through the tide pool, swim through the high tide, climb back up over the rocks and safely sit back down on the shore.

- Closure/Wrap Up:** Have students return to the front carpet to share their work with each other.
- Independent Practice (where appropriate):** Have students return to their seats and discuss with their partners their animals and give describing adjective they are going to use in their poem.
- Once students have discussed for five minutes, pass out green paper to students to write their five describing adjectives on their paper. When students have their papers corrected, have students copy their poems onto their "sea star" with a black marker.
- Differentiated Instruction:** For our higher level learners, students will place their adjectives in full sentences.
- For our lower level learners, if students need additional support, assistance will be offered.
- Possible Follow-Up Activity:** Read poetry from Whale Watch.

Describe to students that we are going to create a poem together about the octopus but first we need to describe our octopus. Explain that we have been looking at objects like scientists in our science lessons and have students give some examples of how to describe the octopus like a scientist. Once we have some observations of the animal, ask students to switch their "thinking cap" so they are to begin to think as a poet. Have students reflect back on the poem from the beginning of class. Have students give adjectives and really make sure to reiterate the term "adjective". Once students have brainstormed ways to describe the octopus show students how they are going to fill out their "sea star poem". Explain to students that they will at least need to think of 5 describing words and if they want they may even write 5 sentences.

Explain that in the tide pool we see many animals that we have already met in other underwater environments.

Show pictures of sea stars, sea urchins, sea cucumbers, barnacles, and anenomes. Ask students what they know about these animals. Try to let the students give information and review what they have learned vs. telling them new information.

Explain to students that they are going to choose one of the animals we discussed and write their poem about the animal using describing words. Ask students how many words are they going to use? Show how to fill in the arms of the starfish.

## Lesson Plan #3

### BASIC INFORMATION

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<b>Grade/Level:</b>	1
<b>Date to be Taught:</b>	Monday - March 5th, 2007 9:00am-10:15am
<b>Time Frame:</b>	1 class period. 1 Hr per class.
<b>Subject:</b>	Language Arts (English), Science
<b>Topic:</b>	The Deep Sea Zones Review
<b>Summary:</b>	In this lesson, students will review the four zones of the deep sea and the different animals found in these zones.

### OUTCOMES/OBJECTIVES AND STANDARDS

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**Objectives/Learning Outcomes:** Students will demonstrate an understanding that there are four zones to the deep sea and be able to give the names of the zones.

Students will complete page 22 of their Discovery Journals, by writing a sentence or two about their favorite animals from the deep sea.

**Standards:**

 **PA- Pennsylvania Academic Standards**

- **Subject :** Environment and Ecology
- **Area 4.6:** Ecosystems and their Interactions
  - **Grade 4.6.4:** Grade 4
    - **Standard A.:** Understand that living things are dependent on nonliving things in the environment for survival.
      - Identify and categorize living and nonliving things.
      - Describe the basic needs of an organism.
      - Identify basic needs of a plant and an animal and explain how their needs are met.
      - Identify plants and animals with their habitat and food sources.
      - Identify environmental variables that affect plant growth.
      - Describe how animals interact with plants to meet their needs for shelter.
      - Describe how certain insects interact with soil for their needs.
      - Understand the components of a food chain.
      - Identify a local ecosystem and its living and nonliving components.
      - Identify a simple ecosystem and its living and nonliving components.
      - Identify common soil textures.
      - Identify animals that live underground.

**Prerequisite Skills:** Students have been previously introduced to the four zones of the deep sea and the different animals, which call them their home, through three prior lessons.

## **ASSESSMENT OF STUDENT LEARNING**

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**Assessment Activities/Rubric:** Students will be informally assessed through their participation in our classroom discussion of the four zones.

Students will be formally assessed through their completion of page 22 of their Discovery Journals.

## **MATERIALS AND TECHNOLOGY**

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**Student Materials:** Discovery Journals  
pencils

**Teacher Materials:** Morning Letter  
Names of the zones, for the board.  
paper for graphic organizer

- 1) Deep Sea Animal
- 2) Name of animal
- 3) Zone found in
- 4) Does the animal live in the dark
- 5) Interesting Fact

## **LESSON SEQUENCE AND PROCEDURES**

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**Introduction (Hook):** Review the names of the four zones by having students name the zones and placing the name on the board.

Introduce picture of the rattail and explain that this animal lives in the Abyss Zone of the deep sea.

Begin lesson by telling students that we are going to be going on a "Rattail Hunt" in the Deep Sea.

Have students repeat lines...

I'm going on a Rattail Hunt

And I'm not scared

I've got a friend by my side

So I'm not scared

What do I see?

The Sunlight Zone in front of me

Can't go over it

Can't go around it...

I'll have to swim through it...

(Ask students what animals they see? What is the temperature of the water?)

Repeat chorus except with Twilight Zone and Dark Zone

Last verse change to...

What do I see?

The Abyss mud in front of me...I feel something moving...I feel a long tail...its a Rattail swim back up through the Dark Zone, Twilight Zone, and Sunlight Zone and climb back into the boat.

**Sequence of Instruction (Step 1, Step 2...):**

Have students sit back on the carpet and explain that we met many different animals in the different zones of the deep sea.

Explain that today we will be writing one sentence in our Discovery Journals on our favorite deep sea animals.

Introduce writing graphic organizer and explain that this will be used to help students write their sentences in their Journals.

Show students how to fold paper and how to draw rectangle in the middle of their page and number the boxes from 1-5. Explain that your favorite animal is the rattail and that you are going to write your sentence about this animal. Show students how to label...

- 1) Deep Sea Animal
- 2) Name of animal-Rattail
- 3) Zone found in-Abyss Zone
- 4) Does the animal live in the dark-yes
- 5) Interesting Fact- The rattail is a scavenger.

Show students how to take idea and place them in a sentence. Line the board and write the sentence on the board.

My favorite deep sea animal is the rattail that lives in the Abyss Zone because it likes the dark and is a scavenger.

Explain to students that they are going to now go back to seats and complete their graphic organizer with their ideas. Explain to students that they need to remember the rule, "Ask your neighbor before you ask me" and explain that while they are waiting for me to come to them, they can illustrate their sentence on the back of their graphic organizer, using colored pencils or crayons.

Explain to students that you would like them to raise their hands when they are finished with their graphic organizers before they begin writing their sentence.

Have each student share their animal to receive their piece of paper.

<b>Closure/Wrap Up:</b>	Have students peer share their sentences in the front of the room.
<b>Independent Practice (where appropriate):</b>	Students will independently complete their graphic organizer and also their sentence in their Discovery Notebooks.
<b>Differentiated Instruction:</b>	For my higher level students, if they finish their first sentence, in their notebooks, I will ask them to create an additional sentence about the animal.
<b>Possible Follow-Up Activity:</b>	Read Aloud of the "Exploring the Deep, Dark Sea"

## **LESSON ANALYSIS AND REFLECTION**

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<b>Analysis:</b>	The lesson went very smoothly because I believe the graphic organizer really allowed the students to focus on the main points they wanted to write about, in their journals, about their favorite deep sea animal. Along with the movement exercise, I believe the students were really engaged and focused during the brainstorming, and also the writing, sessions of this lesson.
<b>Reflection:</b>	I really enjoyed this lesson because I believe the rattail hunt was a perfect activity to culminate all the information the students learned in the deep sea. They seemed to be really engaged with the activity, while also being focused during the discussion of their favorite animal of the deep sea.