The Impact Of Literacy Through Movement In A 3rd Grade Hispanic Classroom

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THE IMPACT OF LITERACY THROUGH MOVEMENT IN A 3RD GRADE HISPANIC CLASSROOM.

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Dedication

This work is dedicated to Pablo Rodarte, friend and illustrious mentor in the art of dance.
THE IMPACT OF LITERACY THROUGH MOVEMENT IN A 3RD GRADE HISPANIC CLASSROOM.

by

DANIEL PEREGRINO, Bachelor of University Studies

THESIS

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Abstract

This case study examines the effects of a kinesthetic literacy-training program on the complexity of narrative production and performance on the Garfield Motivation to Read Survey in a group of four 3rd grade elementary students. The 3rd grade teacher attended a Literacy Through Movement workshop to learn a range of movement-based literacy activities and methods for the classroom. The LITMO program was then implemented as part of a language arts poetry module for 3 weeks in her classroom. Changes in four students’ performance on the Garfield Survey and narrative samples were measured before and after the LITMO intervention. Results suggest that incorporation of movement into literacy lessons may increase student involvement and class participation.
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Historically, the Hispanic population in the United States has been at a significant risk for problems related to poor literacy skills compared to their monolingual counterparts (Tabors & Snow, 2001). It is estimated that children who grow up in poverty score between 11% and 25% lower on achievement tests compared to peers in higher socio-economic households (Vernon-Feagans, Hammer, Miccio, & Manlove, 2001). In addition, surveys of reading and literacy in the United States show that Hispanic students are consistently outperformed by white children in tests of reading comprehension (U.S. Department of Education, 1996). Hispanic children are also at risk of growing up in low socio-economic households; a report by the Pew Hispanic Center (2008) reported the poverty rate of Hispanics younger than 18 to be 26.4%.

Children growing up poor in New Mexico are at a significantly higher risk of low literacy achievement, with 76% of public school fourth graders reading below grade level (Children's Defense Fund, 2008). This may be a reflection of the number of NM children living in poverty: 25%, and the number living in extreme poverty: 11.1% (Children's Defense Fund, 2008). A disparity in literacy performance can be attributed to several different causes. Hispanic children are more likely to come from low socio-economic backgrounds, are generally read to less than middle class or Caucasian children, and are more likely to lag behind in school related skills. (Vernon-Feagans et al., 2001).

Literacy has been shown to be a key factor in positive outcomes for children. It is a strong sign of healthy cognition, and is tied to and reflective of the complexity and development of language and social experience (Baquedano-Lopez, 2003). This is one reason the primary goal of learning during the elementary school years is to acquire and develop literacy skills. Typically, literacy instruction begins with contextualized activities that revolve around experiences common to home or family. Later, it progresses to decontextualized activities (Cairney, 2003; Lancaster,
During this transition children are asked to learn a multitude of concepts not within their immediate worldview, such as history, mathematics, and the principles of science (Dyson, 2001). At the same time as children transition from contextualized to decontextualized literacy activities, they are also introduced to the basic social cues and classroom rules that will come to form the basis of their adult academic interactions.

From these beginnings, students will be asked to master several literacy goals: they should accumulate knowledge about sound-letter correspondence, develop morphological awareness, learn spelling and grammar rules, and develop an understanding of literature as a form in itself. Any bump in the road during this process may have far-ranging disruptions. Crosnoe (2005) argued that success in school is invariably linked to social mobility and socioeconomic success. Early development of literacy is the foundation for a child's later successful participation in adult society, and we must appreciate how important it is that children do not pass through the ranks of school without these literacy skills.

Past Interventions

There have been attempts at identifying the best model of intervention for literacy skills both at home and at school. One study by Neuman and Roskos (1993) provided minority children from financially disadvantaged families with literacy-rich play settings to encourage attention to environmental print, and to promote functional print tasks. They found positive effects when children were able to explore literacy on their own by engaging in functional behaviors. Another study of preschool reading techniques, in a population including low SES minority children found that performance-oriented reading generated the most positive literacy effects after one year (Dickinson & Smith, 1994). This type of reading involved listening to a story from beginning to end, then analyzing and reconstructing the story using student input.

Interventions to improve literacy skills are necessary to increase the academic attainments of
disadvantaged Hispanic children, and have often been more successful when tailored to the unique Hispanic culture experience. One study targeting home literacy experiences found that Hispanic, low SES families were likely to have very poor literacy environments (Goldenberg et al., 1992). Goldenberg described families in this study as not having access books at home, or as having limited access to books. The result of this study’s intervention showed that the children who were sent home with worksheets in addition to their readings performed better on academic tests.

Conversely, Perry et al. (2008) painted a rosier picture of Hispanic literacy home environments, and characterized the experiences of their population as being primarily driven by incidental and culturally centered literacy experiences, rather than conforming to a traditional “academic” home literacy model. An analysis of interventions that used an encouragement of bilingualism to scaffold English language learning in the classroom, such as the “dual-language classroom”, have been documented as having strong long-term outcomes (Collier & Thomas, 2003). Whether one chooses to characterize the literacy environment of Hispanic children in the U.S. as bleak or merely different, the effects of bilingualism and Hispanic culture should be acknowledged when discussing any approach to literacy in this population.

**Literacy and the Kinesthetic Sense**

Historically, use of the kinesthetic sense for learning academic material has not been widely studied or implemented. Traditional didactic literacy instruction relies on engaging students in a verbal or visual mode. This can range from lectures from a podium, blackboard, or PowerPoint presentation. While some students have always been able to learn successfully under such circumstances, it appears lecture as the primary method of instruction is gradually losing favor in some academic circles. A study performed on collegiate physics students found that creative, problem-based instruction increased poor student performances on tests of basic concepts when compared to traditional didactic instruction (Halloun & Hestenes, 1987). A similar study by Malik
and Janjua (2011) also found similar student outcomes when using “active learning strategies”. Such strategies included role-playing, cooperative brainstorming and intra-class debate. Results such as these suggest that students’ success is related to their role in instruction, and that learning increases in the active condition versus the traditional passive condition. Is it possible then, that movement itself, that most active of human conditions, may benefit the student even more?

Movement and Learning

A small body of research literature has attempted to demonstrate that movement has the potential to positively impact a child's literacy skills. It is the culmination of investigations by researchers and theorists striving to make connections between movement and learning. For example, learning a dance involves the use of kinesthetic learning skills, whereby the body is a tool used for memorization of complex forms. These kinesthetic learning skills may also form an essential aspect of communication within a culture. Some researchers suggest that dance’s sequences of patterns and symbolic movement act as a form of nonverbal communication (Hanna, 1987); as the earliest form of human communication (Brown & Parsons, 2008); or as a communication form related to writing, because a dance is composed of segmentable characters that can be transcribed Farnell (1999).

A study of ballet dancers by Blasing, Tenenbaum and Schack (2008) showed that dancers were much more adept at remembering complex movements than non-dancers. This ability to store and sequence complex ideas matches very closely with the cognitive prerequisites for storytelling and narrative production, which in turn complete an essential aspect of the literate mind. Another study found that compared to amateurs, professional dancers had higher alpha wave activity when asked to imagine improvising a dance (Fink, Graif, & Neubauer, 2009). The study suggested that the increased EEG activity in professionals was linked to creativity, because both groups showed similar results when asked to imagine a fixed routine (no improvisation). Finally, in their review,
Sevdalis and Keller (2011) found evidence to support that dance movement and its neural substrates might also play an essential function in social cognition and emotional recognition in others.

Movement Interventions

To date, a great quantity of research exists to show that exercise in general provides positive benefits to overall cognition and academic performance. A review of the literature by Tomporowski et al (2007) confirms the beneficial effects of exercise interventions in these areas. However, exercise interventions should be seen as differing from movement interventions, in that exercise interventions involve physical activity not directly related to academics, such as sports, whereas for the purpose of this study, movement interventions involve physical activity directly related to academics, and literacy in particular. Parsing the literature with this narrow definition of movement interventions leaves fewer studies to inform us of the effects of movement on the literacy achievements of children.

Keinanen, et al (2000) conducted a systematic review of dance and its effects on cognition on overall academic skills. Criteria for inclusion were studies that could demonstrate that skills learned in dance could also transfer to different areas of cognition. Results were generally positive, but conclusions could not be drawn about the effects on literacy in particular because of motivational effects and teacher expectancy. For example, one of the reviewed studies found a large positive effect on all areas of academics for students who participated in a special dance program when compared to a control classroom. However, these positive effects could have been caused by the novelty or excitement of being in a special program outside the students’ regular classes.

In a thesis study, Valdez (1994) used a package of literacy activities which included a kinesthetic activity that was administered to a bilingual classroom with low literacy scores. In this study the kinesthetic activity was use of the body to form the shapes of letters and words. Valdez found improvements in each area that received intervention. However, the role of movement on any
improvement in literacy skills could not be separated from the role of other activities in the package.

Perhaps the strongest evidence that dance may benefit reading comes from a study by McMahon, Rose, and Parks (2003), who found high post-test outcomes in the measured areas of phonological knowledge. Unfortunately, the researchers only sampled a narrow aspect of reading skills that may or may not have been taught concurrently by teachers in the control classrooms. Without being able to make strict comparisons between the curriculum and subject matter timeline between classrooms, it is difficult to place faith in the magnitude of their results. Also, as with other studies reviewed, teacher expectancy, and teacher enthusiasm for the subject may have played a role in the higher post-test outcomes for the intervention classrooms.

Why Literacy through Movement

Support for movement and learning can be found as far back as Vygotsky's (1933) theory of early learning as being play-directed; children play to learn, and play environments have been shown to be more effective than traditional academic approaches for many children (Nielsen & Monson, 1996). Modern proponents of using movement to enhance the curriculum have pointed to a wide range of anecdotal evidence. This evidence usually comes from former dance instructors, physical education instructors, play specialists, or therapists from different fields who in their careers encountered many children who benefited greatly from the incorporation of movement into their literacy activities. Usually, this information is disseminated within their own field as theoretical or quasi-scientific ruminations on the power of movement and dance.

If movement is considered so powerful, to what then do we attribute the great gap between the anecdotal evidence produced by the arts and evidence provided by scientific research? The strongest argument for such a disparity is that because the relationship between movement and learning is a hidden process, and it is difficult to pin down in a laboratory setting (Blasing et al, 2010). However, research in this area continues, and may one day provide us with more concrete
answers.

The idea of movement as an instructional method in itself gained wider acceptance with the emergence of Howard Gardner’s theory of multiple intelligences (1993). He rejected the concept of IQ as predictive of someone’s true intelligence and potential, by asserting that IQ only measures a narrow range of language and spatial-logic abilities and not the ability to be successful in the adult world. Since Gardner’s theory appeared, the “intelligences” have been modified and adapted by others within the psychology/education community, but can still be generally placed in 7 categories: musical intelligence, kinesthetic intelligence, logical-mathematical intelligence, linguistic intelligence, spatial intelligence, interpersonal intelligence, and intrapersonal intelligence. Most students are taught by exposure to visual and auditory stimuli. For the purpose of this study, we are making a critical assumption that movement, as a kinesthetic intelligence, can act as a vehicle for internalizing knowledge. However, we again face the challenge of measurability, as movement rarely takes place in a vacuum, and is usually accompanied by music and the audio/visual guidance of an instructor.

The Literacy Through Movement program is inspired by researcher and educator Betty A. Block. In her work she argues that literacy springs from a cognitive understanding of literary concepts, and that the use of additional psychomotor processes during reading can create a deeper level of understanding of the story (Block, 2001). These processes may be activated by simply making the child aware of the rhythmic cadence of a story by toe tapping. In an advanced form, the processes may be activated via a “movement interpretation” of the internal feelings of a storybook character. Block also described alternative uses of physical movement to teach in literacy areas such as punctuation, for example: skipping to signify a comma, or jumping to indicate a full stop. If indeed these theoretical processes exist, then movement can be used to teach many concepts within the curriculum, from the most basic to the most complex, and the internalization, or crystallization of that knowledge may be more complete than by traditional instruction alone. This then, forms the
theoretical base of Literacy Through Movement: that a learning experience that involves multiple sensory domains (or intelligences) such as audio/visual/tactile/kinesthetic is superior to a learning experience involving isolated sensory domains, such as audio/visual only.

Others have similar interpretations of this theory. Dils (2007) described movement as a way of integrating sensory information, emotion, and thoughts to create meaningful experiences. Her article explored the extent to which movement can make literacy a multi-sensory experience, and lamented that in schools, the value of movement as a teaching device tends to diminish as schoolchildren grow older. Morrow (1992) referred to reading as the use of background knowledge to construct a meaningful interpretation of what is read. The use of kinesthetic learning to make a more emotional connection to a story may help students to remember more of what is read, and possibly gain a more sophisticated understanding of the less concrete forms of speech, such as adverbs and adjectives. Despite this theoretical support or anecdotal evidence about the power of dance to make change in student’s lives, there have yet been few powerful empirical studies that evaluate the effects of a systematized program to teach literacy using movement in a general education classroom.

Research Questions

The effect of a Literacy Through Movement intervention has as yet been untested, and a continuing evaluation of the role of kinesthetic sense in learning can be a significant contribution to education literature. Therefore, the questions this study seeks to answer are:

• Do kinesthetic teaching techniques, used in a primarily Hispanic 3rd grade classroom, affect the survey scores of literacy behaviors?

• Do these kinesthetic teaching techniques affect narrative complexity?

• Is there support for kinesthetic teaching techniques in the classroom?
Chapter 2: Methods

Setting

The study took place at Chaparral Elementary, in the town of Chaparral, located in southern New Mexico. According to the 2009 census, Chaparral is home to approximately 6,622 people. The majority of inhabitants are Hispanic/Latino, forming 75.2 percent of the population. 18.5 percent are classified as White, 3.5 percent Black or African American, 1.9 percent American Indian, and 1.7 percent two or more races. The median household income is $22,875, with a median family income of $24,080. Income was reported to be below poverty level for 43.2% of families with children less than 18 years of age.

According to the U.S. Education Department’s National Center for Education Statistics (1996), Chaparral Elementary serves grades K through 6, and houses 728 students and 50 classroom teachers, with a student/teacher ratio of 14.46. Of those students, 585 (80%) are eligible for free lunch. Chaparral Elementary qualifies as a Title 1 economically disadvantaged school.

Participant Selection

Before implementation of the classroom-designated component of this study consent was obtained from Gadsden School District and the principal of Chaparral Elementary. New Mexico State’s Pan American Dance Institute obtained a separate approval for its LITMO dance concert and teacher in-service. For this study, teachers were recruited from those attending a Literacy Through Movement instructional in-service at Chaparral Elementary. A description of the study, and informed consent and parental consent forms in both English and Spanish were distributed to the teachers and students of two 3rd grade classrooms at Chaparral Elementary.

A total of eight students and two teachers returned complete consent forms. Almost every parental and informed consent forms for students from one 3rd grade classroom were not returned.
Those forms that were returned contained handwritten notes indicating the parents’ wish to decline participation in this study. In another case, the parent verbally informed the teacher that their child would not be participating. The classroom teacher in question stated that possible reasons for the low return rate included:

• Parents may not have sufficient literacy to read and understand the forms
• A prevailing wariness toward government institutions and/or collection of personal data
• An unwillingness to have their child deviate from standard curriculum
• Forms were discarded because of an assumption that participation might incur cost or time

Participants

For this study, a total of eight students received the Garfield Motivation to Read Survey and provided a narrative sample. However, only the data from participants who completed both the pre and post-test conditions (n=4) were analyzed. Participant names have been changed for their privacy, and will be hereafter designated as: Robert, a 3rd grade English-speaking Hispanic male; Mylena, a 3rd grade English-speaking Hispanic female; Katrina, a 3rd grade Spanish-speaking Hispanic female; and Cindy, a 3rd grade English-speaking Hispanic female. Mylena and Katrina were identified as students not receiving special or assistive services. At the time of this study, Robert was obtaining speech services at the school (for speech articulation), and Cindy was receiving resource time for reading.

Design and Experimental Conditions

The researcher used a pre and post case-study design. The study was encompassed by four primary conditions, to be identified here as: exposure, training, instruction and measurement. Although this study is primarily concerned with the instruction and measurement conditions, all four conditions are related to Pan American Dance Institute’s pilot program, Literacy Through
Movement, and there relevancy will be addressed below.

During the exposure condition, a population of students between grades 1-4 at Chaparral Elementary attended the Literacy Through Movement (LITMO) dance concert presented by NMSU’S Pan American Dance Institute (PADI). The concert duration was approximately 60 minutes and featured collegiate dancers from NMSU’s dance department (see figure 2.1). Stories from familiar children’s books such as “The Squiggle” by Carole Lexa Shaefer, “Snapshots from the Wedding” by Gary Soto, and “Where the Wild Things are” by Maurice Sendak were read aloud to the students while the dancers performed in regional and folk attire or animal costumes. The concert presented several different modes of movement presentation to interpret children’s books. These ranged from concrete, e.g., the dancer contorts her body into the shape of the letter “B”, to abstract, e.g., the dancer bounds gleefully across stage to illustrate a character’s emotion. At several points throughout the show, students were asked to participate from their seats in the audience or on stage with the dancers (see figures 2.2 and 2.3).

Figure 2.1 NMSU dancer performs “Cactus Poems” at Chaparral Elementary (courtesy of the Pan American Dance Institute)
Figure 2.2 Students and NMSU dancers interact during performance of “Where the Wild Things Are”, Chaparral Elementary (courtesy of the Pan American Dance Institute)
The second condition, *training*, was conducted at a teacher in-service at Chaparral Elementary. The director of PADI and the researcher, who is a former professional dancer and dance instructor, conducted the teacher in-service. Teachers in attendance received the LITMO manual (Appendix A), were provided an overview of the rationale and goals of LITMO, and were guided through several sample lesson plans that used movement to fulfill a literacy goal. These plans included: using movement to express the alphabet (drawing letters in the air with different body parts), syllables (linking the letter movements), words (creating chains of alphabetic movements, or single descriptive movements) adverbs, adjectives and other abstract concepts (expressed by feeling actions, e.g., walk slowly, skip lightly), group movement (describing letters, punctuation), and cooperative penmanship (drawing letters on partner's back). Finally, the teachers were divided into groups and asked to formulate their own brief sample lesson plan for a given instructional goal. Each group then led the gathering through their short LITMO lesson.

The third condition, *instruction*, was a poetry module taught to the 3rd grade class at Chaparral Elementary. The goal of instruction for this module was creative use of movement to present poetry concepts, with the expectation that incorporation of movement would increase student engagement, increase retention of information, and/or increase efficiency of instruction. The teacher was provided with sample lesson plans written by the researcher that used movement to convey certain key aspects of poetry. She was then informed to feel free to make changes to or generate new plans as needed. The study’s intervention period was originally designed to encompass several literacy modules during the student semester. However, due to scheduling conflicts caused by state mandated testing and the approach of the end of the school year, the intervention was shortened to a three week period.
The fourth condition of this study was measurement, and was designed to capture information regarding the implementation of LITMO in the classroom. This included changes in the self-reported behaviors of the participants, and differences in oral narrative generation by the participants. Self-reported literacy behaviors were measured using the Garfield Motivation to Read Survey before and after the intervention. A narrative sample was taken before and after the intervention. At the instructional level, the teacher was asked to complete and return self-assessment attached to each lesson plan that provided descriptive information regarding the implementation of LITMO in the classroom. The procedures for each of these measurements are described in greater detail below.

**Teacher Self-Assessment Procedures**

In addition to the Garfield Survey and videotaped narrative, the classroom teacher was asked to complete a short reflection after using a LITMO lesson plan in her classes’ poetry module. The reflection questions were attached to each lesson plan. See Appendix E for a sample lesson plan. The answers were used as qualitative data to describe the implementation of LITMO from a teacher’s perspective. The following questions were used in the self-assessment:

- Did you use the exercise provided, or generate your own?
- What was the response of your students to the movement exercise?
- If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:
- Do you have any other suggestions or reflections about the experience?

**Garfield Survey Procedures**

Each student participant received the Garfield Motivation to Read Survey (McKenna, 1990). This survey asked students to rate behaviors associated with reading, enjoyment of reading, and literacy. It was selected based on ease of administration, and correspondence to a general range of reading behaviors. See figure 2.4 for a sample page of the survey. Table 2.1 below contains a list of all questions appearing in the Garfield Survey.
Table 2.1 Garfield Survey questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do you feel when you read a book on a rainy Saturday?</td>
<td></td>
</tr>
<tr>
<td>HDYF when you read a book in school during free time?</td>
<td></td>
</tr>
<tr>
<td>HDYF about reading for fun at home?</td>
<td></td>
</tr>
<tr>
<td>HDYF about getting a book for a present?</td>
<td></td>
</tr>
<tr>
<td>HDYF about spending free time reading a book?</td>
<td></td>
</tr>
<tr>
<td>HDYF about starting a new book?</td>
<td></td>
</tr>
<tr>
<td>HDYF about reading summer vacation?</td>
<td></td>
</tr>
<tr>
<td>HDYF about reading instead of playing?</td>
<td></td>
</tr>
<tr>
<td>HDYF about going to a bookstore?</td>
<td></td>
</tr>
<tr>
<td>HDYF about reading different kinds of books?</td>
<td></td>
</tr>
<tr>
<td>HYDF when a teacher asks you questions about what you read?</td>
<td></td>
</tr>
<tr>
<td>HDYF about reading workbook pages and worksheets?</td>
<td></td>
</tr>
<tr>
<td>HDYF about reading in school?</td>
<td></td>
</tr>
<tr>
<td>HDYF about reading your schoolbooks?</td>
<td></td>
</tr>
<tr>
<td>HDYF about learning from a book?</td>
<td></td>
</tr>
<tr>
<td>HDYF when it's time for reading in class?</td>
<td></td>
</tr>
<tr>
<td>HDYF about stories you read in reading class?</td>
<td></td>
</tr>
<tr>
<td>HDYF when you read out loud in class?</td>
<td></td>
</tr>
<tr>
<td>HDYF about using a dictionary?</td>
<td></td>
</tr>
<tr>
<td>HDYF about taking a reading test?</td>
<td></td>
</tr>
</tbody>
</table>

Students circled drawings of the cartoon cat Garfield to indicate their agreement with statements describing reading behavior. Garfield is portrayed with contrastive emotions such as happiness, contentedness, indifference, or anger. The drawings conform to a simple 4-point scale where 1 indicates that an activity is favored, and has a picture of a joyful Garfield; 4 indicates that an activity is not favored, and has a picture of an angry Garfield.

The Garfield Survey was translated into Spanish by the author and an undergraduate in the speech-language pathology department who is a native speaker of Spanish. See Appendix B for instructions and scoring procedures for the Garfield Motivation to Read Survey, and Appendix D for the testing protocol.
Garfield Survey Analysis

Results of the Garfield Survey were tabled and given a raw score and percentile rankings according to the scoring procedures provided by the Garfield Survey. Calculations were performed by the researcher. A fellow graduate student in Speech-Language Pathology totaled the raw scores and calculated percentiles for all the surveys to establish inter-rater reliability.

Two raw scores are produced totaling the survey scores. Questions 1-10 of the survey are related to recreational reading behaviors, and questions 11-20 relate to academic reading behaviors. From these raw scores for each behavior, a corresponding recreational and academic percentile
ranking was produced, based on the Garfield’s sample of children who took the survey: 18,138 children from grades 1-6. In addition, a full-scale score, which is the sum of recreational and academic raw scores, was computed and then assigned a percentile ranking.

**Narrative Sample Procedures**

Stimulus for the narrative sample was a set of 3 illustrated picture plates depicting a theft. The panels were illustrated by this researcher, and show several ants storing food for the winter in a tree hollow, being observed by a large winged insect as they leave, and then returning to find that their food is no longer in the tree hollow. In both the pre and post conditions participants were shown the picture plates, and then asked to describe what they saw. See Figure 2.5 for an example of the narrative stimulus pictures, and Appendix D for the complete testing protocol.

Participant’s narrative samples were recorded with a digital video camera (FlipCam). In addition to the imbedded audio recording of the FlipCam, audio was also recorded with the onboard microphone of an Apple Macbook Pro using the open-source sound-recording program Audacity. Narrative samples were taken in section of the classroom used for quiet reading activities that was divided from the rest of the class.

![Figure 2.5 Stimulus Picture Plates for Narrative Assessment](image)
Analysis Procedures for the Narrative Sample

The researcher transcribed a total of eight video samples. To establish intra-rater reliability the researcher transcribed all the samples again after the first transcription. Two of the eight videos were transcribed by fellow graduate students in the Speech Language Pathology program to establish inter-rater reliability. Differences in rating were resolved by mutual agreement.

The resulting transcripts were analyzed using CLAN, a Computerized Language Analysis program on an Apple Macbook Pro. CLAN was used to create a total word count and word frequency counts for each of the pre and post narrative samples.

Comparisons of pre and post word counts were then made with regard to: total word count, adverb frequency, type-token ratio, and number and average of high frequency words. For the English-speaking participants, words from their transcripts were cross-referenced with Fry’s New Instant Word List (1980) of the 300 most commonly occurring words in the English language. Words from the participant’s frequency counts were assigned a ranking between 1 (most frequent) to 300 (less frequent) based on their correspondence to the Fry List. Then an average was made, resulting in an index score of average word frequency. Normative values of average word frequency for the Fry List were not available, so the index of average word frequency was used to make comparisons between participants only. Words from the Spanish-speaking participant’s transcript were cross-referenced with Davies’ A Frequency Dictionary of Spanish (2006), and the same correspondence and average was computed.
Chapter 3: Results and Discussion

Responses for the Garfield Motivation to Read Survey were compiled, and raw scores and percentiles were calculated for the participants who completed the pre and post conditions. The researcher and an undergraduate in the speech-language pathology department reviewed participant scores to establish intra-rater and inter-rater reliability.

Each participant’s scores on the Garfield Survey were calculated for the pre and post condition and are tabled below (Tables 3.1-4). The Garfield Survey’s conversion tables can be viewed in Appendix B of this study.

Robert’s raw scores are high in both pre and post conditions, indicating that he favors both Recreational and Academic reading activities. Although there is a slight decline in his Recreational raw scores from pre to post, it is balanced by a slight increase in his Academic raw scores during the same interval. The resulting percentiles suggest that he highly favors most reading activities, with only 9% of the same grade level students reporting higher motivation-to-read behaviors.

In her pre and post surveys, Mylena reports a decline in Academic reading behaviors, balanced by a greater increase in Recreational reading behaviors. The difference is reflected in her post-survey full-scale scores, which show a raw score increase of 3 points, and an increase of 5 percentile points.

Cindy’s scores on the Garfield survey were lower than her classmates in the pre survey condition; her full-scale score was 60, placing her in the 58th percentile of same grade-level students surveyed. However, by the time of her post-survey, Academic and Recreational raw scores had both increased, placing her in the 73rd percentile.

Katrina completed the Spanish-translated form of the Garfield Motivation to Read Survey. The Garfield Survey was administered in English to the national norming group, so Katrina’s scores cannot be strictly applied to their included conversion tables. However, for the purpose of this study
some flexibility will be maintained in the interpretation of her scores, because of the relatively unadorned translations for each question, the simplified answer format, and the straightforward design of the test. Katrina experienced modest increases in both Academic and Recreational raw scale scores from pre to post survey, and her full-scale percentage scores rose from 81 to 92%.

Table 3.1 Garfield Survey results for Robert

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Toward Recreational Reading Raw Score</td>
<td>37</td>
<td>35</td>
</tr>
<tr>
<td>Attitude Toward Academic Reading Raw Score</td>
<td>35</td>
<td>37</td>
</tr>
<tr>
<td>Full Scale Raw Score (Recreational + Academic)</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>%ile rank Recreational</td>
<td>90</td>
<td>81</td>
</tr>
<tr>
<td>%ile rank Academic</td>
<td>88</td>
<td>93</td>
</tr>
<tr>
<td>%ile rank full scale</td>
<td>91</td>
<td>91</td>
</tr>
</tbody>
</table>

Table 3.2 Garfield Survey results for Mylena

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Toward Recreational Reading Raw Score</td>
<td>34</td>
<td>38</td>
</tr>
<tr>
<td>Attitude Toward Academic Reading Raw Score</td>
<td>35</td>
<td>33</td>
</tr>
<tr>
<td>Full Scale Raw Score (Recreational + Academic)</td>
<td>69</td>
<td>71</td>
</tr>
<tr>
<td>%ile rank Recreational</td>
<td>75</td>
<td>94</td>
</tr>
<tr>
<td>%ile rank Academic</td>
<td>88</td>
<td>79</td>
</tr>
<tr>
<td>%ile rank full scale</td>
<td>84</td>
<td>89</td>
</tr>
</tbody>
</table>

Table 3.3 Garfield Survey results for Cindy

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Toward Recreational Reading Raw Score</td>
<td>31</td>
<td>34</td>
</tr>
<tr>
<td>Attitude Toward Academic Reading Raw Score</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Full Scale Raw Score (Recreational + Academic)</td>
<td>60</td>
<td>65</td>
</tr>
<tr>
<td>%ile rank Recreational</td>
<td>57</td>
<td>75</td>
</tr>
<tr>
<td>%ile rank Academic</td>
<td>58</td>
<td>69</td>
</tr>
<tr>
<td>%ile rank full scale</td>
<td>58</td>
<td>73</td>
</tr>
</tbody>
</table>
Table 3.4 Garfield Survey results for Katrina

<table>
<thead>
<tr>
<th>Katrina</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Toward Recreational Reading</td>
<td>33</td>
<td>36</td>
</tr>
<tr>
<td>Raw Score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude Toward Academic Reading</td>
<td>35</td>
<td>37</td>
</tr>
<tr>
<td>Raw Score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Scale Raw Score (Recreational + Academic)</td>
<td>68</td>
<td>73</td>
</tr>
<tr>
<td>%ile rank Recreational</td>
<td>69</td>
<td>87</td>
</tr>
<tr>
<td>%ile rank Academic</td>
<td>88</td>
<td>93</td>
</tr>
<tr>
<td>%ile rank full scale</td>
<td>81</td>
<td>92</td>
</tr>
</tbody>
</table>

Percentile ranks were used to compare the participant’s scores to other 3rd grade students who have previously taken the survey. Changes between each participant’s percentile ranks are displayed in Figures 3.1-3. The graphs show the difference of percentile ranks scores for questions categorized as belonging to recreational reading behaviors and to academic reading behaviors. Full-scale scores are the combined scores for recreational and academic questions.

Two participants experienced a decline in one set of reading behaviors reported. Robert’s recreational score declined between pre and post surveys, and Mylena’s academic score declined between surveys. In all other categories including recreational, academic, and full scale, participants’ scores either increased or were unchanged. Cindy experienced the greatest change in full-scale scores, rising 15 percentile points between pre and post conditions.
Figure 3.1 Garfield Survey recreational %ile rank

Figure 3.2 Garfield Survey academic %ile rank
Narrative Sample

The researcher transcribed the video narrative samples of Robert, Mylena, Katrina, and Cindy. To establish intra-rater reliability the videos were transcribed again after an interval of two months by the researcher. Two videos were transcribed by fellow graduate students in the Speech Language Pathology program. The formula used to establish inter-rater reliability was percentage agreement, defined as: \( \frac{\text{# of agreements}}{\text{# of agreements} + \text{# of disagreements}} \). The Intra-rater agreement range was between 95% and 100% for the pre and post video transcriptions. Using the same formula, inter-rater reliability was 94%. For Katrina’s pre and post videos, the researcher and a graduate student, who is a native Spanish speaker, transcribed jointly and then reached agreement on the transcripts.

Several measures were taken using the resulting data, including total word count, word frequency, type-token ratio, and number of adverbs. The total word count is presented in Table 3.5. Every participant’s total word count increased from the pre to post conditions. Cindy had the smallest increase from pre to post, from 50 words in the pre condition to 54 words in the post

Figure 3.3 Garfield Survey full-scale %ile rank
condition. Katrina, who had the highest total word count in the pre condition, increased slightly, from 147 to 169 words. Cindy more than doubled her word count, increasing from 83 in the pre condition to 193 post. Robert showed the greatest increase in total word count, from 99 words in the pre condition to 233 words in the post condition.

Table 3.5 Total word count of pre and post narrative samples

<table>
<thead>
<tr>
<th>Participant</th>
<th>Total Word Count-Pre</th>
<th>Total Word Count-Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert</td>
<td>99</td>
<td>233</td>
</tr>
<tr>
<td>Mylena</td>
<td>50</td>
<td>54</td>
</tr>
<tr>
<td>Cindy</td>
<td>83</td>
<td>193</td>
</tr>
<tr>
<td>Katrina</td>
<td>147</td>
<td>169</td>
</tr>
</tbody>
</table>

The word frequency lists were cross-referenced with Fry’s Instant Word List, and each word was ranked according to its frequency within the Instant Word List. See Table 3.6 for the results of the English-speaking participants. Katrina’s scores, which follow the wider frequency scale of A Frequency Dictionary of Spanish, can be seen in Table 3.7.

Table 3.6 English-speaking participants’ Instant Word List and adverb scores

<table>
<thead>
<tr>
<th>Participant</th>
<th>Mean Frequency Value</th>
<th>Type-Token Ratio</th>
<th>Highest Value Word</th>
<th># adverbs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre  Post</td>
<td>Pre  Post</td>
<td>Pre Post</td>
<td></td>
</tr>
<tr>
<td>Robert</td>
<td>67.0  75.9</td>
<td>.48  .38</td>
<td>something/233</td>
<td>0 0</td>
</tr>
<tr>
<td>Mylena</td>
<td>90.4  67.7</td>
<td>.52  .65</td>
<td>took/263</td>
<td>0 0</td>
</tr>
<tr>
<td>Cindy</td>
<td>74.2  87.6</td>
<td>.51  .36</td>
<td>second/273</td>
<td>0 2</td>
</tr>
</tbody>
</table>
Table 3.7 Spanish-speaking participant’s Word Frequency and adverb scores

<table>
<thead>
<tr>
<th>Participant</th>
<th>Mean Frequency Value</th>
<th>Type-Token Ratio</th>
<th>Highest Value Word</th>
<th># adverbs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Katrina</td>
<td>311</td>
<td>434.5</td>
<td>.46</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A descriptive assessment of the narrative samples was conducted. The transcripts can be viewed in figures 3.4-6. Any major differences between pre and post narratives are highlighted in yellow. These differences include: complex clauses or phrases, changes in cause in effect, and new or novel references to the setting, action, or characters.

**Robert Pre**

i think that the ants are taking food to their home and another bug is looking at them trying and he's thinking about doing something to them or stealing about their food he's thinking about stealing their food their food and right here one of them is crying and another one sees that unintelligible and another one is wondering where is where did all the food go i think that that the bug is hiding from them if not it will hide the food from them that they're all they are all worried where did all the food go

**Robert Post**

I think that the the ants are storing food for the winter or for something just in case if they if they are hungry moving or gonna running out of food and this one a fly is hiding from them cuz he's thinking about stealing their food so he's hiding behind the the hiding behind the tree so they won't see him and this one one of the ants wondered where did all the food go and one of them unintelligible one of them is looking at some footprints of the fly and one of them is looking at the tree cuz cuz it has some marks on it well well this one this this ant is putting all the food that they have onto the onto the piece of piece of paper so he could see what food they have left with the kind and he he could see what kind of food they have and this one the fly is hiding from them and the and the and then later he
went to steal the food cuz they were all happy and they didn't expect anything to happen to all the food and this one they were all more wondering where did all the food go and they were worried how they were worried about what would they eat for the for what would they eat for the winter or something

Figure 3.4 Robert’s pre and post transcript (major differences highlighted)

A comparison of Robert’s pre and post narrative shows few changes to the basic structure. As highlighted in his post narrative (see Figure 3.4), Robert has included new details that justify actions of character(s), e.g., He is hiding so they won’t see him; they are storing food for the winter. While examining the third panel of the pictures he mentions that the ants are looking at the fly’s footprints. In addition, the bug is given the more specific label of fly. Although his post narrative is longer than his pre narrative, much of the length is simply a recap of what he provided before, elicited as part of the narrative protocol, e.g., “is there anything else you can tell me about these pictures?”

Mylena Pre

in this one they found food and then the mosquito saw them and then it got hot they and then the food disappeared the mosquitoes took the food it’s a hot day and they’re asking who took all the food and then they saw they saw footprints they saw footprints

Mylena Post

they are putting all the food in the insides for the winter then on this one the mosquito saw that so they they took all the food and over here the the ants were asking what happened to the food and they saw they saw the footprints there was also unintelligible and that’s it

Figure 3.5 Mylena’s pre and post transcript (major differences highlighted)

Mylena’s narratives are rather short and sparse in comparison to those of her classmates. The details that changed between pre and post are: the omission of hot, characterizing the
atmosphere/setting of the pictures; the addition of a locative detail (food was stored *in the insides*), and the addition of a justification for food storage (*for the winter*).

Figure 3.6 Cindy’s pre and post transcript (major differences highlighted)

Cindy’s post narrative differs slightly in terms of narrative sophistication. The pre narrative is a dry account of the ants’ behaviors, without an explanation of the ants’ possible motivations. In the post narrative she has added information to justify the actions of the ants such as: they are looking at footprints *to see what animal took it*; and they are saving food to eat *when they have no more*. However, she includes additional details not mentioned in her pre narrative. These include: one ant *are writing* (sic); and two of the ants are *going to look for more food*. 
que fueron a a buscar con la unintelligible que y quega entre la a a dentro de la comida por aguardar aguardar con la comida y que el pusaban quien eran los que tras quien eran los que traigan la comida y ellos esos dos estan jugando pero ellos no sean cuenta de que el lo se esta mirando y quien es ese tiene calor y ese unintelligible viene por arriba y el hizo que y el dijo que donde esta toda la comida y que el estaba buscando comida y el fue a buscar comida arriba aver si la va a guardar una alguien va a llevar de la de guardaban que el le fue que el robo toda la comida porque miro que nadie estaban en la en cuidando la comida que ellos estaban jugando fue que el fue el que se a roba toda la comida

Translation:
That they went to go look with the unintelligible and that and that went into the in-inside of the food to put away to put away with the food and that he put who were the ones who behind who were the ones that brought the food and they them and who is that one? That one is hot and that unintelligible comes from the top and he made and he said that where is all the food and that he was looking for food and he went to look for food up there to see if he’s gonna put it away one someone is going to take of the of they had put away that he went and he stole all the food because he saw that noone was in the in watching the food that they were playing he was that he was that has stolen all the food.

Katrina Post

que que las hormigas estabamo haciendo comida y que había un mosquito y luego estaban las otras hormigas ahi jugando y luego le queria robar la comida porque ahi era donde guardaban la comida y es que se queria esconder para robarles la comida y luego el mosquito se robo toda la comida sin que los destos se dieran cuenta y esta el esta buscando las huellas del mosquito a ver si fue el el que les robo la comida y que y luego que la hormiga termino queriendo unintelligible la comida y luego que dijo y luego la otra que estaba jugando se puso esta a llorar porque le robaron toda la comida y no tenia nada que comer aqui en estaba el mosquito escondido enseguida de la pared y ellos todaví no miraban el mosquito que estaba escondido el mosquito ya se habia ido con toda la comida y que nadie de las hormigas se dio cuenta que se habia robado la comida el mosquito

Translation:
that that the ants we were making food and that there was a mosquito and then the other ants were there playing and then he wanted to steal their food because that was where they kept their food and it’s ‘cause he wanted to hide to steal their food and then and then the mosquito stole all of the food without the [what-do-you-call-them] noticing and he is he is looking for the mosquito’s footprints to see if it was him that stole their food and then that he said and then the other one that was playing this one started to cry because they stole all the food and she didn’t have anything to eat here in the mosquito was hidden next to the wall and they still hadn’t seen the mosquito who was hidden the mosquito had already left with
Katrina’s post narrative was more descriptive, and, compared to her classmates, more complex in form. She mentions character motivations, such as: les quería robar (it wanted to steal [from them]); and, se quería esconder (it wanted to hide). There is mention of internal states of characters: esta a llorar porque le robaron toda la comida y no tenía nada que comer (he is crying because he stole all the food and [now] they don’t have anything to eat); and, nadie de las hormigas se dio cuenta que se había robado (none of the ants realize it was stolen). Also, additional detail was added with the mention of las huellas del mosquito (the mosquito’s footprints).

Teacher Self-Assessment Results

All poetry lesson plans and teacher responses can be found in Appendix F. Of 11 poetry lessons provided to the teacher for her poetry module, six were used. The teacher’s responses are in italics. [No answer] indicates where no response was given.

The teacher provided the following responses for each lesson plan:

Haiku Lesson Plan 2
Did you use the exercise provided, or generate your own?
Yes, I did. At the beginning students were not stopping at the end of 5-7-5 syllables. When I told them to count silently, in their heads, they were able [to] stay with the 5-7-5 rhythm.

What was the response of your students to the movement exercise?
They totally loved it!!! They wanted to keep doing it... totally awesome.

If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:
I had students stand doing dance movements with each syllable sound. We followed with clapping of the hands.

Do you have any other suggestions or reflections about the experience?
Experience was wonderful. I would do this exercise with all grade levels K-12. This also releases stored up energy students always possess.

Alphabet Poetry Lesson Plan 1
What was the response of your students to the movement exercise?
Students enjoyed this exercise. Some students had difficulty trying to figure out a body shape for letter, but other students intervened & helped with a solution.

If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:
Only modification was ABC figures at the beginning. I did model first. Then they each came up with their “body design” of letter given.

Do you have any other suggestions or reflections about the experience?
Some letters were somewhat difficult to model, but students did enjoy. They were even on the floor designing with their bodies.

Alphabet Poetry Lesson Plan 2
Did you use the exercise provided, or generate your own?
Yes, I did.

What was the response of your students to the movement exercise?
This was a little more difficult for the 3rd grade class. Coming up with a poem with only 3 letters was a challenge. I know upper grade levels could do this task. Letters used were GDO.

If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:
Just told students to try & make a word with letters and then use the word for the theme of their poem. They came up with “DOG”... once they came up with DOG, they were able to make up phrases.

Do you have any other suggestions or reflections about the experience?
Great exercise... helps students work together and brainstorm ideas. Even my shy students participated.

Diamante Lesson Plan 1
Did you use the exercise provided, or generate your own?
Both.

What was the response of your students to the movement exercise?
Students enjoyed it... everyone wanted a turn.

If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:
We did the visual, two students made the diamond shape using feet & hands. Teacher outlined shape with hand. Then teacher used overhead, drew shape, students helped filling in. This poetry took two days because lesson had 2 types.

Do you have any other suggestions or reflections about the experience? Let students experiment with all two types of diamante poetry.

Limericks Lesson Plan 1
Did you use the exercise provided, or generate your own? Yes, we did.

What was the response of your students to the movement exercise? Students enjoyed this lesson. Students are always ready and anxious to have fun while learning. These lessons help bring students close together in a learning environment.

If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description: No answer

Do you have any other suggestions or reflections about the experience? Students enjoy learning when they are having fun.

Limericks Lesson Plan 2
Did you use the exercise provided, or generate your own? I used it same day. Pantomiming was a little difficult for my third graders.

What was the response of your students to the movement exercise? Because students aren’t exposed to this type of movement (pantomime) it was difficult. They had tendency to want to talk, and only stuck to one movement. I had to tell them they need to use more movement for clues.

If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description: No answer

Do you have any other suggestions or reflections about the experience? This is more for upper grades. Or maybe pantomiming needs to be exercised more in all grade levels.

Based on the responses provided by the teacher, we can see that she viewed some lessons as successful, and some lessons as more difficult for the children to follow. Difficulties mentioned by the teacher include:

- Students had trouble pantomiming; they had not been exposed to the concept of pantomiming
Children preferred verbal communication over movement communication in some lessons

In some lessons, children had difficulty generating poems as a group

In some lessons, children had difficulty generating appropriate body shapes

Some lessons were difficult for children of a 3rd grade level

The positive responses mentioned by the teacher include:

- Students loved it
- It released student’s pent up energy
- Students felt free to work on the floor
- Some exercises would work for all grades (K-12)
- Even shy students participated
- The class worked together to brainstorm
- Students were anxious to participate
- Brought the class together
- Students enjoy learning when they are having fun

Discussion

The questions this study sought to answer were:

1. Do kinesthetic teaching techniques, used in a primarily Hispanic 3rd grade classroom, affect the survey scores of literacy behaviors?
2. Do these kinesthetic teaching techniques affect narrative complexity?
3. Is there support for kinesthetic teaching techniques in the classroom?

Unfortunately, this study lacked the specificity required to isolate the influence of kinesthetic teaching techniques on literacy behaviors. It was, of course, reassuring that no student’s full-scale score on the survey decreased between the pre and post conditions, which should suggest that the
addition of movement in the poetry lesson plans may not be counteractive to students’ motivation to read. It should be stated, however, that Robert’s recreational score declined between pre and post surveys, and Mylena’s academic score declined between surveys. For each child, the decline was small, and, without additional surveys over time, cannot be regarded as being indicative as anything more than an acceptable variation in those behaviors. As a pilot study, the data provided by only a pre and post-test cannot go so far towards a strong argument for wider adoption of the use of movement as a teaching method for literacy.

In answer to the second question, the methods used to evaluate changes in narrative complexity may have been sensitive to the effects of kinesthetic instruction, but for reasons specified earlier, the subject matter included for this intervention was changed to a poetry module during this study. Knowledge of poetry concepts, of rhyme, rhythm, and cadence are best measured in tasks that involve expression of poetry. It would be a stretch to suggest that the relatively benign stimulus picture plates used for collecting narrative samples would evoke such expression in all but the most effusive students.

However, counts of adverbs may still be useful. Although not appearing in the transcripts in significant numbers, the participants whose transcripts contained them did show an increase between pre and post conditions. Katrina’s count of adverbs rose from three to five, and Cindy’s rose from no adverb use to two between narrative samples, which keeps open the possibility that some aspect of the intervention may have influenced their use of descriptive language. Perhaps an examination of adverb use would be more useful given longer narrative samples. Another possibility is the use of written narratives to assess change between treatment conditions, as written language may more closely reflect the descriptive language used in poetry.

For the third question, asking if there is support for kinesthetic teaching techniques in the classroom, the answer depends on the personality of the teacher as well as the dictates of curriculum and administration. The teacher who adopted use of LITMO methods in her classroom for the three
weeks of this study was as open and enthusiastic a teacher as can be found. In her responses to reflection questions she made suggestions about which lessons were successful and why, and made it clear to the researcher that properly executed movement lesson plans brought the class together, made shy students become involved, and made learning fun. If movement could be shown to be a more efficient instruction method, then would be more likely to be viewed as compatible with the curriculum.

Administrators who were in the audience at the LITMO concert, participated in the LITMO in-service, or had been informed of the aims of this study showed excitement. In interactions with them it became clear that increasing student literacy was a primary concern, and the prospect of a single literacy training program that could also address student activity levels and increase student engagement was especially intriguing to them.

In conversations with teachers, a frequent theme was of the difficulties they encountered attempting to serve a community that was not only distressed by poverty, but also in constant flux. As an elementary school near the border with Mexico, a substantial number of students may arrive with little English or Spanish language skills, or as in the case of many families of any nationality, may be registered in the fall but then vanish in the spring, when economic circumstances demand the family migrate elsewhere.

Given these circumstances, teachers understood the importance of each opportunity to advance a child’s literacy. Literacy through movement, then, may represent a chance for each literacy lesson to be more engaging and more relevant to some students’ way of learning than the traditional didactic literacy lesson. Although children may not have controls of the factors that keep them out of school, the time they do spend in school may be more engaging with the use of movement. Many educators lamented that due to poor funding of the arts in public schools, programs such as this one are not commonplace. Besides being entertaining for the students, this study revealed a satisfying reaction from the participating teacher, best captured in her reflection
after a lesson plan: “Students enjoy learning when they are having fun.”

Limitations

One major threat to the validity of this study was the effect of teacher expectancy. This effect may have been introduced during the teachers' in-service training, or after exposure to the LITMO dance concert. A study by Keinanen et al (2000) that evaluated four similar programs was unable to draw strong conclusions regarding the treatment's effectiveness for similar reasons. Alternative explanations could not be ruled out when examining the results of this study, because there was no control for participants' characteristics, test sensitivity, or maturation.

One reason for the relative increase in participants’ narrative word count may have been familiarity with the researcher. A participant who was reticent or fearful in the researcher’s presence during the first narrative assessment, may have been more at ease during the researcher’s subsequent visit. Alternatively, the participant may have performed better simply because it was a familiar task performed under the supervision of a familiar person.

Each assessment took place during the same span of time (morning), and day of week (Thursday), but was conducted in the classroom with other children present, and this may have affected participant performance on the narrative task. A related limitation to this study was the short span of time between pre and post narrative assessments, an interval of only three weeks. Participants would have been likely to remember the picture plates, as the plates did not change, and could comment in more depth after a second viewing.

In their narrative samples, the only child to experience a decline in word frequency rankings was Mylena. However, she also had the smallest total word count for both her narrative samples. Mylena’s variable narrative scores, when compared to the scores of her classmates suggests that longer narrative samples may be necessary to gain a more accurate picture of word frequency and/or adverb counts. In the same vein, the type-token ratios that were calculated for each participant are
not reliable indicators of narrative complexity, as they are too subject to variation depending upon the length of narrative being analyzed.

In Katrina’s case, the Garfield Survey results were based on a translated version of the survey. While this was done because the survey is relatively straightforward and free of items that could cause confusion in translation, it should be pointed out that her results cannot be strictly comparable to those of her English-speaking classmates.

Future research

As an experiment in providing an alternative delivery method for literacy lessons, as well as venturing different methods measurement of their effects, this pilot study can provide a foothold for future research. Although counts of adverbs do not appear to be sensitive to narrative behaviors in this study, they may still be a reliable measure for students in higher grade levels, when increased usage of adverbs would be expected. In future studies, assessment methods such as the ones used in this study may be more specific to movement lessons within a storytelling module, rather than the poetry module these students were exposed to.

At the root there are some overarching issues related to movement that will need to be addressed, such as: What is the mechanism by with kinesthetic movements are stored as knowledge, and, is there any difference between the retention of knowledge acquired using movement, and knowledge acquired with other senses? If movement finds acceptance in the classroom, further research will be needed to determine if is there a difference in efficiency between teaching a lesson traditionally, and teaching the same lesson using movement? In other words, can a class be taught a concept faster by moving than by just watching and listening? And, how could movement help teach other subjects in the curriculum? For example, could movement be used to teach the timeline of the Civil War in a History class?

Other more practical issues involve how a classroom might be organized around movement.
Considerations have to be given to performing space. For older students, feeling self-conscious about physical appearance or discomfort about interpersonal proximity are problems that may need to be addressed.

There may be an experimental design that can better measure the effects of movement on literacy. An alternating treatment design can compare the relative effectiveness of traditional instruction versus movement. Or, several different methods could be compared, including the traditional method, movement instruction, and perhaps, computer-based instruction such as literacy video games. In a large-scale experiment, the effectiveness of storing and sequencing basic discrete movements could be compared to the effectiveness of storing and sequencing the same information in the auditory and visual domains. The difficulty would lie in determining the equivalency of stimuli for each domain. In other words, would a movement gestures such as a wave of the hand be equivalent to the word “bye” when it is spoken, or “bye” when it is written? Each expression of “bye” involves a complex coordination of gross or fine motor patterns, making it much more difficult to isolate the pattern responsible for storage of information.

If such a measurement device can be constructed that is both sensitive and specific to the influence of movement on learning, one area of interest would be the role of movement or gestural expression in learning across cultures. Many cultures in the United States have forms of social dance that children experience as children, from dancing the polka at a community fair, to line-dancing at a hoedown, quinceañeras at a neighbor’s house, or salsa at local ferias. It is possible that these events, in addition to being a form of social communication, add strength to children’s ability to learn and process information. A well-constructed study may eventually address questions such as:

• What role does movement, such as social dance, play in literacy or learning outcomes?

• How does movement affect storage of abstract and concrete concepts in people from cultures known for florid gestural expression or dance, when compared to children coming from a
more restrained cultural background?

• What form of movement most benefits an individual’s ability to learn?

Conclusion

What the reader should take away from this study is that the Literacy Through Movement program has tremendous potential to engage students and teachers in the classroom. It has high face value for administrators, because of its purported ability to increase student’s physical activity as well as their engagement in class lessons. For teachers, LITMO’s value may be in reaching shy or struggling students, who may not otherwise be affected by the regular lessons. For students, LITMO may provide them with the opportunity to release nervous energy, and cooperate with classmates in a positive way. Teachers and students excitement about approaching reading as a multi-modal activity suggest that more can be done in the field of literacy to accommodate alternative learning styles. It is hoped that this pilot study can contribute to the literature of kinesiologic approaches to teaching and learning.
References


Appendices

Appendix A: LITMO Manual for Teacher In-service

By: Debra Knapp, Associate Professor, New Mexico State University
Contributors: Kirsten Avelar, Daniel Peregrino

Literacy Through Movement
In-Service Training Manual

By Dr. Debra Knapp

Contributors: Kirsten Avelar & Daniel Peregrino
INTRODUCTION

Based upon the article “Literacy Through Movement: An Organizational Approach” written by Betty A. Block in the January 2001 issue of *The Journal of Physical Education, Recreation & Dance*, Block touches upon many concepts and ideas that reinforce the validity of such an exciting and different approach to promoting literacy. “One well-accepted educational theory in both motor-learning and reading-process literature is the schema theory. ...Schema theory explains that we comprehend reading material by organizing information into interlocking knowledge networks and then relate that new information to old information. Reading comprehension depends on the concepts, topical knowledge, language, and life experiences brought to the text by the reader” (Block, 2001).

*Literacy Through Movement* attempts to broaden students’ schemata by building connections between the written word, the rhythm of speech, and physical interpretations of speech. The aim is to help children form new schemata associations that will be available to recall in the future. According to Block, there are three concepts concerning the social nature of reading:

1. Reading demonstrations emphasize the importance of reading and constructing linguistic connections while listening to language.

2. Some children are more engaged when reading is social.

3. Depending on the social context, a child may be open to reading, or extremely averse to reading.
Literacy Through Movement uses movement to tell the stories of children’s books and poems because:

1. Actively experiencing the rhythm of words and sentences helps children find the rhythm necessary for reading and writing.

2. When children demonstrate the meaning of words physically, their understanding of words is immediate and long-lasting.

3. Adverbs and adjectives become much more than abstract concepts.

4. When children perform a “slow walk” or “skip lightly”, they learn the meaning in both their bodies and their minds.

5. When children act out the words of a poem, the plot of a story, or the lyrics of a song, they must ponder the meanings of the words.

6. Students will develop the ability to imagine the story as they read, i.e. develop their “inner eye” to visualize written word into “imagery pictures” and this ability will increase comprehension, reduce inhibitors, and inspire them to read more.

Literacy through Movement supplements school curricula by addressing the following New Mexico Department of Education’s Benchmarks and Performance Standards:

Language Arts Content Standards
  Content Standard 1: Students will apply strategies and skills to comprehend information that is read, heard, and viewed
  Content Standard 3: Students will use literature and media to develop an understanding of people, societies, and the self

Dance, Music, Theatre and Visual Arts Content Standards
  Content Standard 2: Use dance, music, theatre/drama, and visual arts to express ideas
  Content Standard 3: Integrate understanding of visual and performing arts by seeking connections and parallels among arts disciplines as well as all other content areas
  Content Standard 4: Demonstrate an understanding of the dynamics of the creative process
  Content Standard 6: Show increased awareness of diverse peoples and cultures through visual and performing arts

Social Studies Content Standards
  Content Standard 2: Geography: Understand how physical, natural and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments
THE KINESTHETIC LEARNER

A kinesthetic learners needs to be in motion. This is not a learner with a behavior problem but a student with a different learning style. Keep a large animal in a small cage and this animal will try to get out. Keep a kinesthetic learner in their seat and this student will find a way to escape.

Most educators are familiar with the three types of learning styles: visual, auditory, and kinesthetic. But, there are many intelligence centers we work from, visual, verbal, kinesthetic, logical, musical, interpersonal, intrapersonal, and naturalistic. We use each of the styles of learning to some degree.

The students who are kinesthetic learners in your classroom might be labeled ‘hyperactive’, "ADD", or they may simply be children with behavioral problems. They may distract classroom activities by wiggling in their seat, tapping their toes, doodling on their paper, or talking loudly. They cannot sit still for long periods of time. Time moves too slowly for them. Stillness is deafening.

To renew their concentration many of these children need to move. Movement for them is calming. They need that mind/body interaction more than most. They need to access movement with gross and fine motor skills. If their muscles are not interpreting what they are hearing or reading, then the chances are their brain has not fully received the information.

The kinesthetic learner poses the greatest challenge to educators because little training has been given for this method of learning. Most educators use a visual or auditory approach. Kinesthetic teaching does not exclude these methods; it just adds another layer within the total picture of approaches to learning.

This is a starting point for educators who wish to incorporate movement into their teaching repertoire…
Method One: Body Writing
Alphabet/Spelling

Body writing is the method of using different body parts for invisible writing. A finger, shoulder, knee, toe, chin, nose, hips…becomes a pen or paintbrush. This method uses body movement and memory identification for integration of a specific task i.e. alphabet, spelling, etc.

Movements are first done in the space in front of the body. The size of the movement covers the space from the waist to the head (about 2 feet), depending on which body part you use. As the students become comfortable moving their bodies in this way, change the writing space to include other areas within their personal kinesphere (above the body, beside the body, under the body, behind the body). Include directions that allow the students to explore writing at low/high levels, in a circle, enlarging/decreasing the size of the writing, increasing/decreasing the speed in which the writing occurs. Keep having the students change body parts.

After exploring body writing in relation to the body, move to body writing that explores space around the classroom.

Example: Use a long red ribbon to trace the letter "G" in the air, or make big loops across space to illustrate a "boulder rolling down a hill".

Near the end of the lesson, have them move from writing with big strokes to writing with smaller strokes; from air writing to desk writing; until finally they pick up their writing instrument and write the lesson on paper.

Method Two: Body Sequencing
Pronunciation/Syllables

This method allows the student to create single movements that are then linked together to form movement phrases. Using syllables as a spring-board for the movement invention.

First, select a group of words in which to work. Have the student count the number of syllables of each word. Apply one movement per syllable. As the instructor, you can create the movement for the first lessons. Subsequent lessons can allow the students to create their own movement per syllable and sequence their own movement phrases.

Example: Choose the main character/s from the story. Joe and Mary. Joe would get one movement because his name is one syllable, and Mary would have two movements because her name has two syllables. Each time the characters’ names are read in the story the students will make the movement for that character.

Example: the word "Mississippi" has 4 syllables, therefore, 4 unique movements can be created and sequenced together to form the movement phrase for the state and capital.

This activity can be done as an individual or in groups. Movements should be simple and easily repeated. The movements can be whole body or with a body part.

“Where the Wild Things Are” by Maurice Sendak, Loma Linda Elementary
Method Three: Body Shaping
Alphabet/Prepositional Phrases/Spelling

In this method, the student creates a body shape that is representational of the task. The student can choose to make an ‘A’ with the hands, legs, or with the entire body. Using the body helps a student to understand prepositions, such as "above, below, under, on, near, far". This allows the student to appreciate the concept of prepositions on a very personal level before applying it to the world around them.

Working with a partner will also help them to understand these principles while learning to problem solve with another.

Example: Tracy is a monster who comes "near" James who is sitting "under" a tree, then Tracy raises her arms "above" her head and scares James, who jumps "up" in the air!

To explore spelling further, after the students have been able to create letters individually using their bodies, use groups of 3 or more and give them simple words to spell.

Example: Tracy, Jim, and Scott are in a group. Their word is "CAT". Tracy curves her arms in a "C", Jim puts his hands together over his head to make "A", and Scott sticks his arms out to make "T".

Working together they will also build teamwork skills, improve their problem solving abilities, and learn to work cooperatively with others.
Method Four: Body Language
Narratives/Punctuation

Body Language can include mime, drama, dance or sign language. Acting out a story for literature or history, or using the sign language alphabet for spelling will help the kinesthetic learner access their muscle memory, which increases the chances that the information will be stored in long term memory.

Sign language is also a great way to tell a story. Find a good Sign Language dictionary. Using the text of the story (literature/history), choose key nouns and verbs that describe the main events. Find the signs that represent these words. Create a movement sentence using sign language. Repetition is important.

Example: In the jungle there was a monkey that CLIMBED the tallest trees. The monkey would JUMP from the trees into puddles of water. He’d KICK the water until he was soaking wet! Then he would SHAKE off all the water until he was dry again. Sometimes he liked to BALANCE bananas, just because.

Writing is a kinesthetic activity but sometimes the learner needs to feel it as a gross motor movement before they can translate it to a fine motor movement.

Example: Using a short text, have small groups of students in charge of punctuating the phrase. When a comma is needed, the "comma" group makes a curvy movement. When a period is needed, the "full stop" group hops in the air and stomps.

Method Five: Whole Body Phrasing
Verbs/Adverbs/Adjectives

This method is more sophisticated than some of the previous methods. Now we are asking the students to produce more fluid movements that describe abstract concepts such as verbs, adverbs, and adjectives. Body phrasing is different from body shaping, where a student makes and holds a shape. Students must consider the quality of their movements, rather than just the shape.

Example: after reading, "the bird fluttered its wings softly", the teacher asks a student to demonstrate what that would look like. The student crouches, and moves his arms by his side softly.

Verbs (action words) are used to provide physical movement experiences of the story. By identifying the verbs/action words and allowing the students to physically experience them, they are able to explore how the story unfolds.

When practicing verbs, say the verb aloud and let the students perform that verb until a new verb is given. Watch and see how they produce the words in movement. For variety, add verbal directions to each verb that will let the students change their speed, their level and their size. Guide them by suggesting that they change body parts, change level, change direction, change size, and change speed.

Guide them to explore different movement choices by using the following prompts:

- **Body Parts**: Try to ‘reach’ using a different body part.
  - *Can you ‘count’ with your chin?*
- **Level**: Can you ‘sneak’ low to the ground?
- **Direction**: Try ‘bending’ backwards.
- **Speed**: Can you ‘grab’ slowly?
  - Try ‘twisting’ really fast.
- **Size**: How small can you ‘swing’ your wrists?
  - How large can you ‘slice’ with your arms?

From these beginnings, you can try ever more sophisticated approaches. A book reading can unfold like a play, with specific characters who act out predetermined movements. Or, it can be improvisatory, by asking students to make up their own movements for each word or concept in the story.

“Chicka Chicka Boom Boom” by Bill Martin Jr. & John Archambault, Chaparral Elementary
Method Six: Tactile Sensing  
Alphabet/Spelling/penmanship

This is a partnered activity. One student’s back becomes the blackboard and the other student becomes the writer on the blackboard. The partners are a team. No one is trying to trick the other person. The writer is given a letter or spelling word and they transfer it to their partner’s back. The partner tries to guess what is drawn. The writer takes special care so that their partner can understand. (It may take several tries before the student blackboard can guess correctly.) When spelling, do one letter at a time and allow the student blackboard to nod when they understand that letter. When the blackboard answers correctly, they switch places.

When spelling, upper case letters are easier to identify. Script letters should be tried after the students have mastered the skills of tactile identification.

This is a quiet activity for a kinesthetic learner. It is a calming technique. It also reinforces the concepts of trust and cooperation between students.

We believe incorporating these methods into your instruction will help engage students, increase their motivation to read, and make story-time more enjoyable for everyone. In addition, you can expect to see movement foster growth in individual expression and group cooperation. Above all, it is fun!

“Chicka Chicka Boom Boom” by Bill Martin Jr. & John Archambault, Chaparral Elementary
Lesson Plan 1

Suggested Grade Level: K-3rd

Academic Content: Language Arts – Nouns, Reading Comprehension, and Sequencing


Description of Activity: Student(s) will be asked to create movements with their bodies (or a long red ribbon) as the teacher directs. As the story progresses the students will need to follow closely so they can repeat the given movements at the appropriate time.

Objectives: To increase story comprehension and sequencing, recognize nouns, and develop call and response reactions.


SAMPLE LESSON PLAN:

Warm-Up – Mr. Rivera takes his students through the vocabulary list of nouns he would like his students to “move” from the book they are currently reading in class, “The Squiggle”. The list includes: dragon, wall, acrobat, fireworks, storm cloud, pool, and the moon. For each word the class follows Mr. Rivera’s lead as he creates an action that depicts the noun. Sometimes he would ask the class what type of movement could be used to represent the noun, and he would follow their lead and that would be the movement designated for the noun.

Activity – Once the class has had time to practice the nouns in order, Mr. Rivera reads “The Squiggle” aloud. The children listen attentively and wait for the noun to be called out. When the big scaly dragon is mentioned, the class raises their arms above their head and sway side to side. For the top of the long great wall, they extend their arms to the side and press their hands against their neighbors to create an angular group shape. Everyone stands to their feet and balances on one foot with their arms stretched outward for balance as the circus acrobat is read. The class then jumps up and down between their desks for the sky trail of popping fireworks. As the stormy thundercloud arises everyone quickly falls to the floor. Standing back up again the class slowly and quietly twists and twirls in circles for the deep still pool. As the full fat moon comes up the students take their seat and gracefully raise their arms in a large circle above their heads.

When the story repeats the nouns it is now back to back, with no words in between. The students are ready to quickly repeat, in the correct sequence, their embodied nouns.

Closure – As Mr. Rivera closes the book and the children are in their seats, he plays some music. He asks the students if they can repeat the movements in order without his prompting. In silence the children move, from one action to the next, until a small dance has been choreographed. After their movements have been completed Mr. Rivera asks them to close their eyes and go to their favorite part in the book. When they open them he asks them to each perform their favorite noun.
Lesson Plan 2

Suggested Grade Level: PreK-1st

Academic Content: Letters of the Alphabet and Spelling


Description of Activity: Student(s) will be asked to make the shape of a letter of the alphabet using their body. Then students will take turns making short words by combining letter shapes with their fellow classmates.

Objectives: To create a movement relationship with letters of the alphabet. This activity stresses collaborative effort, improvement in problem solving skills, spatial awareness, and creative imagery.

Materials Needed: Music is optional. Alphabet letters written or printed on large cards are optional.

SAMPLE LESSON PLAN:

Warm-Up – Ms. March asks the class to make various letters from the alphabet with their bodies. As she calls out the letter “C”, the students curve their arms in a "C". When she asks for an “A” the students put their hands together over their head to make the letter "A". Finally, Ms. March asks to see the letter “T”. The whole classroom makes the letter “T” by sticking their arms out to the side and sliding their legs together.

Activity – Since Ms. March's class was working on simple three-letter words she assigned the children in groups of three and gave them a specific three-letter spelling word. The first three children spelled the word B-E-E. After they spelled the word, Ms. March asked the children to make their "letters" buzz like a bee. The next group spelled the word D-O-G. Ms. March then asked the children to make their "letters" wag like a dog's tail. C-A-T was spelled by the following group, and the children arched and hissed like a cat.

Next, she asked if changing the first letter of a word changes the meaning of the word. Two students make the shape of A and T with their bodies, and other students come forward to change the word. A student becomes B, to make B-A-T. Another student takes her place, making R to spell R-A-T. The next child makes P to spell P-A-T.

Closure – Ms. March, checking for comprehension, gathers everyone in a circle and she asks again, “When we changed the first letter of the word, did the meaning of the word change as well?” Students have an opportunity to share what they think. Ms. March can also provide the child with a way to make meaning from their own experience by asking questions such as “What was your favorite word to spell?” or “What was your favorite letter that you made with your body?”
Lesson Plan 3

Suggested Grade Level: PreK-2nd

Academic Content: Letters of the Alphabet

Kinesthetic Method Used: Method 4/Body Language - Acting out the alphabet.

Description of Activity: Student(s) will be given a letter and will use their body to associate with an animal, object, or emotion that begins with that letter. Additionally, the teacher can give a student the word to perform, and the class must guess what animal, object, or action begins with that letter.

Objectives: To express movement/information clearly and promote letter-word associations. This activity stresses creativity and the development of the “inner eye” as children try and visualize the image with the associated letter.

Materials Needed: Music is optional.

SAMPLE LESSON PLAN:

Warm –up - Ms. Perez gave each student in the class a letter, and asked the students to come up with an animal, object, or action that begins with that letter. The children had a few minutes to think of their letter and create some movements that represented what they had.

Activity – When everyone in the class had come up with their movements, Ms. Perez asked them to form a line. As each student came to the front of the class, she indicated whether they were an animal, an object, or an action, and the student used their movements to imitate their word. She gave the class a few moments to guess. If the class was unable to guess, Ms. Perez asked what other ways could be used to demonstrate that animal, object, or action.

Closure – Once everyone had a turn, Ms. Perez asked the students to turn to their neighbor and give another example of an animal, object, or action that began with that same letter. Once the students had time to think of one and share with their classmate, she asked them to share with their neighbor how they felt becoming that animal, object, or action. Did they feel excited when they were the dragon breathing fire? Were they nervous when they were the clock keeping time for the race?

*This lesson plan meets the following NM Dept. of Education’s Benchmarks and Performance Standards: Language Arts Content Standard 1; Dance, Music, Theatre and Visual Arts Content Standard 2, 3, and 4, and is designed to improve the students’ affective, cognitive and psychomotor development.
Lesson Plan 4

Suggested Grade Level: PreK-3rd

Academic Content: Adverbs and Adjectives

Kinesthetic Method Used: Method 5/Whole Body Phrasing - Identifying adverbs or adjectives visually.

Description of Activity: Students will be divided into equal groups. Each group will be a different class of animals, e.g. lions, bears, etc. Each student in the group will be asked to play a slight variation of the animal based on the adjectives or adverbs the teacher provides (hungry lion, angry lion, lion walking softly). As each group performs their animal movements, the rest of the class is to identify which animal demonstrates the selected adverb or adjective.

Objectives: To increase the students’ adverbs and adjectives vocabulary, and broaden the meanings of existing vocabulary.

Materials Needed: Music is optional. Costumes are optional.

SAMPLE LESSON PLAN:

Warm-up - Today Mr. Smith's class was learning about ocean life. She asked the class, what kind of ocean creatures might wash up onto the beach? For each ocean creature that was called out, the students had to move like that creature.

Activity – Mr. Smith then divided the class into groups of three. The first group of three was made up of starfish. There was a proud starfish, a scared starfish, and a sad starfish. Everyone guessed which starfish was which. The next group was made up of sea lions. There was a lonely sea lion, a dizzy sea lion, and a clumsy sea lion. The class guessed which sea lion was which. Mr. Smith decided to make the task more difficult. The next group was made up of a homesick crab, a lonely crab, and a shy crab. When the class had difficulty identifying the qualities of each crab, she discussed what kind of movements could represent being lonely, or shy, or homesick.

Closure – Mr. Smith then asks the class if they’ve ever been lonely. What about shy? Who has been homesick before? By asking his students these questions as a closure, Mr. Smith is encouraging them to make personal meaning from their own experiences. This will create a chance for the students to learn about adjectives and adverbs at a deeper level, and have longer memory recollection.
Lesson Plan 5

Suggested Grade Level: 4th-6th

Academic Content: Language Arts – Poetry


Description of Activity: Students will read and interpret two poems with movement, and then compare and contrast the way each poem was expressed. The teacher will suggest movement ideas that delve into a poem's deeper meanings.

Objectives: To engage the senses, using movement as a way of exploring past the literal, surface meaning of a poem; to recognize the abstract intentions of adverbs, and their range of interpretive possibilities; and to discuss poetry as a communicative art form. This activity is designed to help the kinesthetic learner access their muscle memory, which increases the chances that the information will be stored in long term memory.

Materials Needed: Music is optional

SAMPLE LESSON PLAN:

Warm-up - Ms. Ingell presented two poems to the class, Edgar Allen Poe's "The Raven", and "The Spider and the Fly", by Mary Howitt.

Activity – She then divided the class into groups. Each group acted out a designated section of the poem. She had the class discuss the similarities and differences between each poem. After a discussion of the language use and deeper meanings of each poem, she had the groups perform another section of each poem, but this time asking for the students to demonstrate their insight of those deeper meanings.

Closure – After each group was finished demonstrating the deeper meanings she asked them to discuss in their groups how it felt different from the first time they demonstrated. Each person in the group shared what they experienced.
This lesson plan meets the following NM Dept. of Education’s Benchmarks and Performance Standards: Language Arts Content Standard 1; Dance, Music, Theatre and Visual Arts Content Standard 2, 3, and 4, and is designed to improve the students’ affective, cognitive and psychomotor development.

Resources

www.pecentral.org ~ This is a website for teachers of health and physical education, however it has many useful lesson plans that incorporate movement.

www.artsedge.kennedy-center.org ~ This site contains sample lesson plans and lets you combine searchable categories to discover lesson plans that combine dance and other academic subjects.

www.ndeo.org ~ The National Dance Education Organization (NDEO) is a non-profit organization dedicated to the advancement and promotion of high quality education in the art of dance. NDEO provides the dance artist, educator and administrator a network of resources and support.

www.arteducators.org ~ The mission of National Art Education Association (NAEA) is to promote art education through professional development, service, advancement of knowledge, and leadership.

A volume of the latest scientific research presented by neuroscientists, psychologists, cognitive researchers, choreographers, and dance teachers.

Teaching The Three Rs Through Movement by Anne Green Gilbert
This book includes hundreds of ideas for using movement as a tool to teach language arts, math, science, social studies, art and music for grades K-6th. It includes many fun and motivating kinesthetic activities that may be used to introduce, reinforce and review academic concepts. National Dance Education Organization, 296 pp.

Brain-Compatible Dance Education by Anne Green Gilbert
This reviews brain research and then describes how to effectively present holistic dance lessons, using a 5-part lesson plan, to engage learners "to think as well as to move." The five main chapters include complete information on the BrainDance; new conceptual explorations and improvisations; many movement combinations for all ages, circle dances and folk dances; choreographic springboards and tools; cooling down, reflection, and assessment ideas. Appendices include Assessment Rubrics, Brain Development, Patterns of Coordination, Motif Notation, Resources, and more. National Dance Association/AAHPERD in 2006, 360 pp.

BrainDance by Anne Green Gilbert
BrainDance is an exercise that moves through eight fundamental movement patterns that wire the central nervous system in the first year of life. The BrainDance offers benefits such as improved mood, reduced stress, increased alertness and concentration. It can be used at home, at school, or in the office, as well as in the dance studio. Use the BrainDance for brain reorganization, body connectivity/alignment, a centering body/brain warm-up or to wake-up or calm-down. Variations include rhymes with young children, standing, lying down, sitting in chairs, traveling, with partners, and integration with dance...
concepts. Includes written insert with detailed information about brain development and the rationale behind the BrainDance. Produced by Anne Green Gilbert in 2003


The Role of Discipline-Based Art Education in America's Schools by Elliot W. Eisner and Getty Center for Education in the Arts. Los Angeles, Calif.: Getty Center for Education in the Arts, 1988.


101 Dance Games for Children: Fun and Creativity with Movement by Paul Rooyackers (1996) This book is written for anyone interested in leading a group of children in one or more dance games and has great ideas that can stimulate ways for the academic classroom setting to become a kinesthetic arena for the students.
Appendix B: Garfield Motivation to Read Survey Instructions and Scoring

Elementary Reading Attitude Survey
Directions for use

The Elementary Reading Attitude Survey provides a quick indication of student attitudes toward reading. It consists of 20 items and can be administered to an entire classroom in about 10 minutes. Each item presents a brief, simply worded statement about reading, followed by four pictures of Garfield. Each pose is designed to depict a different emotional state, ranging from very positive to very negative.

Administration
Begin by telling students that you wish to find out how they feel about reading. Emphasize that this is not a test and that there are no “right” answers. Encourage sincerity.

Distribute the survey forms and, if you wish to monitor the attitudes of specific students, ask them to write their names in the space at the top. Hold up a copy of the survey so that the students can see the first page. Point to the picture of Garfield at the far left of the first item. Ask the students to look at this same picture on their own survey form. Discuss with them the mood Garfield seems to be in (very happy). Then move to the next picture and again discuss Garfield’s mood (this time, a little happy). In the same way, move to the third and fourth pictures and talk about Garfield’s moods—a little upset and very upset. It is helpful to point out the position of Garfield’s mouth, especially in the middle two figures.

Explain that together you will read some statements about reading and that the students should think about how they feel about each statement. They should then circle the picture of Garfield that is closest to their own feelings. (Emphasize that the students should respond according to their own feelings, not as Garfield might respond!) Read each item aloud slowly and distinctly; then read it a second time while students are thinking. Be sure to read the item number and to remind students of page numbers when new pages are reached.

Scoring
To score the survey, count four points for each leftmost (happiest) Garfield circled, three for each slightly smiling Garfield, two for each mildly upset Garfield, and one point for each very upset (rightmost) Garfield. Three scores for each student can be obtained: the total for the first 10 items, the total for the second 10, and a composite total. The first half of the survey relates to attitude toward recreational reading; the second half relates to attitude toward academic aspects of reading.

Interpretation
You can interpret scores in two ways. One is to note informally where the score falls in regard to the four nodes of the scale. A total score of 50, for example, would fall about mid-way on the scale, between the slightly happy and slightly upset figures, therefore indicating a relatively indifferent overall attitude toward reading. The other approach is more formal. It involves converting the raw scores into percentile ranks by means of Table 1. Be sure to use the norms for the right grade level and to note the column headings (Rec = recreational reading, Aca = academic reading, Tot = total score). If you wish to determine the average percentile rank for your class, average the raw scores first; then use the table to locate the percentile rank corresponding to the raw score mean. Percentile ranks cannot be averaged directly.

McKenna & Kear
# Elementary Reading Attitude Survey Scoring Sheet

Student Name___________________________________________

Teacher_________________________________________________

Grade_________________ Administration Date__________________

## Scoring Guide

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
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<tbody>
<tr>
<td>4</td>
<td>Happiest Garfield</td>
</tr>
<tr>
<td>3</td>
<td>Slightly smiling Garfield</td>
</tr>
<tr>
<td>2</td>
<td>Mildly upset Garfield</td>
</tr>
<tr>
<td>1</td>
<td>Very upset Garfield</td>
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### Recreational reading

1. ___
2. ___
3. ___
4. ___
5. ___
6. ___
7. ___
8. ___
9. ___
10. ___

### Academic reading

1. ___
2. ___
3. ___
4. ___
5. ___
6. ___
7. ___
8. ___
9. ___
10. ___

Raw Score: ___

Full scale raw score ............ (Recreational + Academic): ___

Percentile ranks: ............ Recreational

.............. Academic

.............. Full scale

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Survey designed by Dennis J. Kear, Wichita State University
Appendix

Technical Aspects of the Elementary Reading Attitude Survey

The norming project
To create norms for the interpretation of scores, a large-scale study was conducted in late January 1989, at which time the survey was administered to 18,138 students in Grades 1–6. A number of steps were taken to achieve a sample that was sufficiently stratified (i.e., reflective of the American population) to allow confident generalizations. Children were drawn from 95 school districts in 38 U.S. states. The number of girls exceeded by only 5 the number of boys. Ethnic distribution of the sample was also close to that of the U.S. population (Statistical abstract of the United States, 1989). The proportion of blacks (9.5%) was within 3% of the national proportion, while the proportion of Hispanics (6.2%) was within 2%.

Percentile ranks at each grade for both subscales and the full scale are presented in Table 1. These data can be used to compare individual students’ scores with the national sample and they can be interpreted like achievement-test percentile ranks.

Table 1
Mid-year percentile ranks by grade and scale

<table>
<thead>
<tr>
<th>Grade 1</th>
<th>Grade 2</th>
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</table>

Measuring Attitude Toward Reading

61
### Table 1
Mid-year percentile ranks by grade and scale (continued)

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<th>Raw Scr</th>
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</table>

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Appendix
Technical Aspects of the Elementary Reading Attitude Survey (continued)

Reliability
Cronbach’s alpha, a statistic developed primarily to measure the internal consistency of attitude scales (Cronbach, 1951), was calculated at each grade level for both subscales and for the composite score. These coefficients ranged from .74 to .89 and are presented in Table 2.

It is interesting that with only two exceptions, coefficients were .80 or higher. These were for the recreational subscale at Grades 1 and 2. It is possible that the stability of young children’s attitudes toward leisure reading grows with their decoding ability and familiarity with reading as a pastime.

Table 2
Descriptive statistics and internal consistency measures

<table>
<thead>
<tr>
<th>Grade</th>
<th>Reproductive Subscale</th>
<th>Academic Subscale</th>
<th>Full Scale (Total)</th>
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</thead>
<tbody>
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<td>N M SD S.M Alpha³</td>
<td>N M SD S.M Alpha³</td>
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<td>27.3 6.6 2.7 .83</td>
<td>56.8 11.3 3.7 .89</td>
</tr>
</tbody>
</table>

³ Cronbach’s alpha (Cronbach, 1951).

Validity
Evidence of construct validity was gathered by several means. For the recreational subscale, students in the national norming group were asked (a) whether a public library was available to them and (b) whether they currently had a library card. Those to whom libraries were available were separated into two groups (those with and without cards) and their recreational scores were compared. Cardholders had significantly higher (p < .001) recreational scores (M = 30.0) than noncardholders (M = 28.9), evidence of the subscale’s validity in that scores varied predictably with an outside criterion.

A second test compared students who presently had books checked out from their school library versus students who did not. The comparison was limited to children whose teachers reported not requiring them to check out books. The means of the two groups varied significantly (p < .001), and children with books checked out scored higher (M = 29.2) than those who had no books checked out (M = 27.3).

A further test of the recreational subscale compared students who reported watching an average of less than 1 hour of television per night with students who reported watching more than 2 hours per night. The recreational mean for the low televising group (31.5) significantly exceeded (p < .001) the mean of the heavy televising group (28.6). Thus, the amount of television watched varied inversely with children’s attitudes toward recreational reading.

The validity of the academic subscale was tested by examining the relationship of scores to reading ability. Teachers categorized norm-group children as having low, average, or high overall reading ability. Mean subscale scores of the high-ability readers (M = 27.7) significantly exceeded the mean of
Appendix

Technical Aspects of the Elementary Reading Attitude Survey (continued)

low-ability readers ($M = 27.0$, $p < .001$), evidence that scores were reflective of how the students truly felt about reading for academic purposes.

The relationship between the subscales was also investigated. It was hypothesized that children’s attitudes toward recreational and academic reading would be moderately but not highly correlated. Facility with reading is likely to affect these two areas similarly, resulting in similar attitude scores. Nevertheless, it is easy to imagine children prone to read for pleasure but disenchanted with assigned reading and children academically engaged but without interest in reading outside of school. The inter-subscale correlation coefficient was .64, which meant that just 41% of the variance in one set of scores could be accounted for by the other. It is reasonable to suggest that the two subscales, while related, also reflect dissimilar factors—a desired outcome.

To tell more precisely whether the traits measured by the survey corresponded to the two subscales, factor analyses were conducted. Both used the unweighted least squares method of extraction and a varimax rotation. The first analysis permitted factors to be identified liberally (using a limit equal to the smallest eigenvalue greater than 1). Three factors were identified. Of the 10 items comprising the academic subscale, 9 loaded predominantly on a single factor while the 10th (item 13) loaded nearly equally on all three factors. A second factor was dominated by 7 items of the recreational subscale, while 3 of the recreational items (6, 9, and 10) loaded principally on a third factor. These items did, however, load more heavily on the second (recreational) factor than on the first (academic). A second analysis constrained the identification of factors to two. This time, with one exception, all items loaded cleanly on factors associated with the two subscales. The exception was item 13, which could have been interpreted as a recreational item and thus apparently involved a slight ambiguity. Taken together, the factor analyses produced evidence extremely supportive of the claim that the survey’s two subscales reflect discrete aspects of reading attitude.

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Appendix C: Stimulus Picture Plates

Plate 1

Plate 2
Appendix D: Testing Protocols

Garfield Survey
Good Morning, I have a simple survey I would like you to fill out. This survey asks how you feel about reading. After every question (point to the question) there are four pictures of Garfield the Cat (point to each picture). All you have to do is circle the picture of Garfield that describes how you feel when you read a book. Do you have any questions? Ok, if you have run into a question you don’t understand, please let me know.

Narrative Sample
I have some pictures I would like you to look at. First, take a long look at each picture (point to each picture), and then tell me a story about what you think is happening in these pictures.

(If participant’s narrative is too brief, follow-up with this question)
Ok, what else do you think is happening?
(If participant’s narrative is still brief, follow-up with this question)
Is there anything else you can tell me about these pictures?

(thank the participant)
Appendix E: Sample Poetry Lesson Plan

Litmo Poetry Lesson Plans May 9-27, 2011

Haiku Lesson Plan 2

Purpose: develop a stronger inner representation of the 5-7-5 syllable “beats” of a haiku.

The teacher leads the classroom through a Red light/Green light activity

Example: The students assemble across from the teacher. She slowly reads the each line of the poem syllable by syllable. With each syllable, each student takes a large step towards her. At the end of every line the students have to freeze, if a student moves, he or she is out. Students can try reading their own poem while taking a step for every syllable.

Questions:

Did you use the exercise provided, or generate your own?

What was the response of your students to the movement exercise?

If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:

Do you have any other suggestions or reflections about the experience?
Appendix F: Lesson Plans and Teacher Responses

Haiku Lesson Plan 2
Purpose: develop a stronger inner representation of the 5-7-5 syllable “beats” of a haiku.
The teacher leads the classroom through a Red light/Green light activity
Example: The students assemble across from the teacher. She slowly reads the each line of the poem syllable by syllable. With each syllable, each student takes a large step towards her. At the end of every line the students have to freeze, if a student moves, he or she is out. Students can try reading their own poem while taking a step for every syllable.
Questions:
Did you use the exercise provided, or generate your own?
Yes, I did. At the beginning students were not stopping at the end of 5-7-5 syllables. When I told them to count silently, in their heads, they were able [to] stay with the 5-7-5 rhythm.
What was the response of your students to the movement exercise?
They totally loved it!!! They wanted to keep doing it... totally awesome.
If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:
I had students stand doing dance movements with each syllable sound. We followed with clapping of the hands.
Do you have any other suggestions or reflections about the experience?
Experience was wonderful. I would do this exercise with all grade levels K-12. This also releases stored up energy students always possess.

Alphabet Poetry Lesson Plan 1
Purpose: produce physical representations of letters; cooperate with classmates
Each child will make the shape (with arms or whole body) of the letter of the alphabet as they recite their poem. Or, group of children can spell out the word with their bodies, while a student reads each line of his poem as he passes by the student making the letter shape for that line.
Example: 6 students make the six letters of Daniel’s name: D-A-N-I-E-L. Daniel reads each line of the poem in front of the corresponding letter. “D, doesn’t like to eat broccoli; A, anytime it is raw; N, now I am hungry; I, I don’t know why... etc.”
Questions:
Did you use the exercise provided, or generate your own?
Yes, but first I gave each student a letter, then they came up with a figure of that letter using their body. [Investigator note: the alphabet was written in pencil at the top of the page, most letters are crossed out, except for W, X, Y.]
What was the response of your students to the movement exercise?
Students enjoyed this exercise. Some students had difficulty trying to figure out a body shape for letter, but other students intervened & helped with a solution.
If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:
Only modification was ABC figures at the beginning. I did model first. Then they each came up with their “body design” of letter given.
Do you have any other suggestions or reflections about the experience?
Some letters were somewhat difficult to model, but students did enjoy. They were even on the floor designing with their bodies.
Alphabet Poetry Lesson Plan 2
Purpose: produce physical representations of letters; cooperate and brainstorm with classmates; generate novel poems using letters provided by classmates
The class has to make a poem using the letter shapes made by a group of students.
Example: Group 1, has 3 students. They confer with each other, then make the letter shapes of X, Y, Z. Then the class has a few minutes to make a poem using those three letters. Group 2 has 4 students. They make the letter shape B, O, A, T. The class has a few minutes to make a poem using those letters. To make the exercise more difficult the teacher says, “this time, make your poem about boats”.
Questions:
Did you use the exercise provided, or generate your own?
Yes, I did.
What was the response of your students to the movement exercise?
This was a little more difficult for the 3rd grade class. Coming up with a poem with only 3 letters was a challenge. I know upper grade levels could do this task. Letters used were GDO.
If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:
Just told students to try & make a word with letters and then use the word for the theme of their poem. They came up with “DOG”… once they came up with DOG, they were able to make up phrases.
Do you have any other suggestions or reflections about the experience?
Great exercise… helps students work together and brainstorm ideas. Even my shy students participated.

Diamante Lesson Plan 1
Purpose: Use body shapes to create “negative space”, show how poetry can be arranged in shapes on paper.
When explaining the structure of the diamante poem, the teacher will ask students to find a partner and come up with different shapes that can be traced and used as a shape template for a poem.
Example: Two students act as a visual aid by making a diamond with their bodies (see illustration), while the teacher traces the negative space onto the board. Then she shows how the words of a poem fill the space in the diamond. She asks two other students to make a shape, traces it, and fills the shape with words from a poem. Next, students are asked to make a shape, and add their own words to it.
Requirement: Dry-Erase board, chalkboard, or butcher paper. Sidewalk chalk can work if students make shapes lying down on cement floor.
Questions:
Did you use the exercise provided, or generate your own?
Both.
What was the response of your students to the movement exercise?
Students enjoyed it... everyone wanted a turn.
If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:
We did the visual, two students made the diamond shape using feet & hands. Teacher outlined shape with hand. Then teacher used overhead, drew shape, students helped filling in. This poetry took two days because lesson had 2 types.
Do you have any other suggestions or reflections about the experience?
Let students experiment with all two types of diamante poetry.

Diamante Lesson Plan 2 DID NOT DO THIS LESSON
Purpose: Understand how poetic expression can be powerful, even when it seems to be limited by its presentation.
The teacher gives each student an action to show the class, but also gives them a barrier to that action. The class tries to guess what the student is showing them. The teacher then discusses how poems can be both limited to the space they are put into, but at the same time, can be strong if done correctly. Example: Kate has to communicate the word “flying” to her classmates. However, she is not allowed to use her arms. After the exercise, the teacher asks the class why it was difficult for Kate to communicate without moving her arms, and asks the class for movement ideas that may have better shown “flying”.

**Limericks Lesson Plan 1**

**Purpose:** Students will develop an internal representation of the prosody of limericks, so they can create better rhyming stanzas.

Students join hands, forming a circle. As the teacher reads the first line of the limerick, the students move to their right. With each new line, the students change direction.

Example: (->RIGHT)There once was a man named McCale, (<-LEFT) he lived by the sea in a pail, (->RIGHT) he jumped in my boat, (<-LEFT) I gave him my coat, (->RIGHT) and saved him that night from a whale.

**Questions:**

Did you use the exercise provided, or generate your own?

*Yes, we did.*

What was the response of your students to the movement exercise?

*Students enjoyed this lesson. Students are always ready and anxious to have fun while learning. These lessons help bring students close together in a learning environment.*

If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:

*NONE PROVIDED*

Do you have any other suggestions or reflections about the experience?

*Students enjoy learning when they are having fun.*

**Limericks Lesson Plan 2**

**Purpose:** Students will use their imaginations to decipher movement words from a poem.

The teacher gives each student a limerick with one word circled. The student has to act out, or pantomime the circled word so that his classmates can guess the word, completing the limerick.

Example: Manny gets the word “rocket”. The teacher reads the limerick: *There once was a man named Crocket, he searched everywhere for a socket, to plug in his lamp, because it was damp, and too dark to see his* (Manny acts out a rocket taking off).

**Questions:**

Did you use the exercise provided, or generate your own?

*I used it same day. Pantomiming was a little difficult for my third graders.*

What was the response of your students to the movement exercise?

*Because students aren’t exposed to this type of movement (pantomime) it was difficult. They had tendency to want to talk, and only stuck to one movement. I had to tell them they need to use more movement for clues.*

If you came up with your own unique movement exercise, or modified the one(s) provided, please provide a description:

*NONE PROVIDED*

Do you have any other suggestions or reflections about the experience?

*This is more for upper grades. Or maybe pantomiming needs to be exercised more in all grade levels.*

**Nonsense Poetry Lesson Plan 1**

DID NOT DO THIS LESSON
Purpose: Use imagination to invent movement descriptions for words that are novel or unfamiliar to the reader.

The teacher reads a nonsense poem and asks the students to use their bodies to describe a nonsense word in the poem.

Example: *The jabberwocky shook its muna skibbety skoo.* How would you shake your arms *skibbety skoo*? How would you shake your legs *skibbety skoo*? Ask the students to come up with their own movements for a nonsense word.

Nonsense Poetry Lesson Plan 2 DID NOT DO THIS LESSON

Purpose: Use imagination to explore our preconceptions when we encounter a new word.

Example: Have the students form a circle, and on the count of three, all turn around, pointing at their whatever they think is their *muna*. Ask the students to walk like how they think a *jabberwocky* might walk. Ask them, if *skibbety skoo* means “walking in slow motion”, what would zibbety zoo look like?

Movement Poetry Lesson Plan 1 DID NOT DO THIS LESSON

Purpose: Discover how words can be used to describe the movement of others.

The teacher asks the students to watch her move in a silly way, and write down a word describing her movements. Then, the class compares the words they wrote down.

Example: The teacher tiptoes across the room. Many students write down “quietly”, or “softly”. One student wrote “sneaky”. The class discusses what a sneaky movement would look like.

Movement Poetry Lesson Plan 2 DID NOT DO THIS LESSON

Purpose: Discover how words can be used to describe one’s own movement.

The teacher asks each student to use movement to describe one of the action words from a poem they wrote. The class has to guess what verb or adverb the student is describing.

Example: Paul wrote a poem about boiling eggs for Easter. He squats low, pretending to be a pot, and moves his fingers up and down to simulate boiling. Some students guess “monkey”, or “volcano”. Paul is allowed to let people know when they are “hot or cold” about their guesses.
Vita

Mr. Peregrino received a Bachelor of University Studies from the University of New Mexico with concentrations in Dance and English composition in 2004. He was a recipient of UNM’s four-year Regent’s Honor Scholarship, a two-time recipient of the Jimmie Vokes Bernard Scholarship, and was awarded the New Mexico Folk Arts Apprenticeship Grant. In 1998, Mr. Peregrino received an honorary diploma from Toyokawa High School, in Toyokawa Prefecture, Japan, as a Rotary Exchange Student. In 1996, he was honored to visit the White House to meet President William Jefferson Clinton as New Mexico’s representative to the 50th Anniversary American Legion’s Boy’s Nation. He is a former professional flamenco and Spanish dance artist and instructor who toured and performed throughout North America and the United States. Mr. Peregrino was a principal dancer for the Dallas Opera and has performed in the companies of Maria Benitez Teatro Flamenco, Dance España, and Desert Moon Entertainment.

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This thesis was typed by Daniel Peregrino