

How to Engage the Disengaged?

Identifying Student's Strengths, Weaknesses and Affinities in a Place-Based Curriculum

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Abstract

The positive effect of a differentiated instruction may sometimes be overlooked by educators. As a Kindergarten through Second Grade teacher I wanted to explore how I could differentiate my instruction in order to reengage students who were often disengaged. This study collected data through a series of questionnaires, observations, and interviews completed with three Kindergarten through Second Grade students who were identified as being disengaged on a regular basis. The evidence showed that by truly understanding an individual's strengths, weaknesses and affinities it is possible to use intentional instruction techniques to keep them better engaged, and to support their learning needs. In turn, this creates a better learning environment for all students and a more fulfilling teaching experience. This research resulted in changes in the way that I respond to disengaged students, and has made me reevaluate my teaching and how it affects each of my students. I now approach my teaching a mechanism of reaching each individual student, instead of a way to present information to a group.

Part 1: Introduction

I love teaching. For me teaching is a time to inspire others to become life learners. It is a time to encourage others to inquire, question and ultimately become more aware. I like to think that I am helping my students become better people by presenting them with opportunities to better their mind and their characters. This may sound idealistic; however I do believe that most teachers get into the field because of a similar idealism and/or passion. Unfortunately, this flame of idealism and passion can quickly be extinguished by external pressures such as large class size, standardized testing, set curriculums and lack of funding. The pressures that many teachers face on a daily basis are enough to diminish their passion and cause them to teach to the average. This can have a negative effect on those students who become lost amongst the lecture and memorization-based curriculum.

The educational community has been abuzz with a variety of concepts, including multiple intelligences and differentiation. “Howard Gardner’s work around multiple intelligences has had a profound impact on thinking and practice in education – especially in the United States.” (www.infed.org) It is now understood that each person learns and processes information differently. “At its most basic level, differentiation consists of the efforts of teachers to respond to variance among learners in the classroom. Whenever a teacher reaches out to an individual or small group in order to vary his or her teaching and to create the best learning experience possible, that teacher is differentiating instruction.” (Tomlinson, 2007) It is important that teachers find ways to redefine their teaching in order to meet the needs of their students. There are many philosophies out there, however these philosophies speak to me and how I choose to interact with my students.

For the last several years, I have been implementing strategies to reach out to the different types of learners, and different skill levels in my classes. However, despite my efforts

towards differentiation, there are still those students who are often disengaged, specifically in our science class. It is usually the same handful of students who are showing disengagement by lying down, talking out loud in a disruptive manner, looking in a different direction or fiddling with objects. These students often are at a loss when questioned about the information that was just presented, and they slowly fall behind by struggling in certain curricular areas. I realized that I needed to reach out to these students, to understand how they learn, and implement specific strategies that could encourage them to be successful in their school experience.

This action research project provided me with expertise in recognizing learning strengths and weaknesses and implementing strategies to encourage and reengage struggling students. With experience, it will get easier to recognize specific weaknesses and strengths in students and to accommodate their needs. Every teacher has struggled with engaging students; this study gave me insight into how I can implement specific teaching strategies in order to create a successful environment for individual students. I hope that this research will be helpful to other teachers when interacting with students who make them question their teaching style and abilities.

In addition, this project will be relevant to program development within my specific school system. The Journeys School is dedicated to supporting each of its students and each of their minds and learning styles. The school is committed to providing each of the faculty with Schools Attuned Training, in which teachers spend a year studying how to identify student's neuro-developmental strengths, weaknesses and affinities. Those of us who have undergone the training are trying to initiate a biyearly meeting to discuss how we are improving our schools educational opportunities through identifying our students learning profiles. This project gave me experience on how to recognize and accommodate or intervene upon differences in learning

in my classroom setting. It revealed pros and cons of initiating specific management strategies into the K-2 science class and community.

Statement of My Research Purpose

While teaching K-2 students, I find that each year I have at least two or three students who appear to be consistently distracted and disengaged during lessons. These students usually struggle with listening and/or completing specific projects. The energy spent redirecting these students takes precious time away from teaching other students in the class. In order to address this problem I realized that I needed: 1. to identify the learning strengths, weaknesses and affinities of the disengaged students in order to choose the appropriate teaching strategies to reengage them in science class. 2. To identify ways that I could further differentiate my teaching in order to keep as many students engaged as possible. These focus areas assisted me in designing my research question.

Research Question

In this action research project I will adjust my teaching to support the strengths and affinities and/or intervene upon the weaknesses of struggling students in my science class. Specifically, my questions are as follows:

1. By understanding a disengaged student's neuro-developmental breakdown, can I increase my ability to implement teaching strategies that will help her/him become better engaged during theme time?

AR Project Context

To understand why I teach where I do and how I do, I think it important to introduce myself. I grew up in Colorado and was fortunate in that I experienced a variety of different

learning opportunities in my youth. I attended a mix of private and public schools, however I thrived in a smaller classroom setting. I learned not only in a traditional classroom setting, but also gained experience through extensive backcountry excursions into the Colorado Mountains as well as in Baja, Mexico, Alaska, Chile, and Vermont. My high school learning experience was very hands on, and my explorations in my home state gave me a great sense of place and a drive to learn about the cultural and natural history of that place. It was these experiences that gave me the passion to want to teach others in an experiential and inquiry-based manner.

A majority of my teaching experience has been in environmental education amongst age groups ranging from 5th grade to high school. I have taught in a variety of programs ranging from residential environmental education programs, environmental classrooms in public schools, summer camps, and environmental outreach events. I believe that through these alternative programs I developed a great love for teaching life-sciences and natural history. I also have found a passion for encouraging students to find relevance and interest in the environment and to commit to learning as a process. I loved teaching in the field. I felt that by teaching in an outdoor, living classroom, it was easy to motivate and influence students. Eventually I became exhausted by the seasonal lifestyle, and yearned to have a longer term relationship with students. I believe I have found a perfect match by becoming a teacher at the Journeys School.

The Journeys School is a Pre-K – 12th grade school that cultivates life long learning through experiential and place-based education. The Journeys School was started by and is still part of the Teton Science School, a non-profit organization that conducts science and research based programming within Grand Teton National Park. The Teton Science School has historically, and continues to provide residential-education programs for school groups from

around the world. The Journeys School, which came into existence 6 years ago, is a full time school where students can benefit from the hands-on and place-based practice that has been so successful in the residential education program. I have now taught at the Journeys School for two years, and previously spent a graduate year conducting programming for the Teton Science School's residential education program. I am a strong believer in the Teton Science School and their vision and ability to connect students with the environment and the learning process. I believe the Journeys School has accomplished a beautiful balance by encouraging this connection at a full time school. Students of the Journeys School are residents of Jackson Hole, Wyoming. Most of them are from the towns of Jackson and Wilson. Since the Journey School is a private school, many of the students are from middle to upper class families. The Journeys School does have a significant financial aid program that assists nearly 40% of the student population. This does help to diversify the student population some. In addition, the financial aid program offers scholarships specifically for Hispanic families; however Hispanic students make up less than 10% of the schools population.

Through my experiences teaching at the Journeys school, I have found that the students are eager to please. For the most part they are ready to learn, and look forward to participating in different lessons and activities throughout the day. I mention this because each teacher is presented with a unique group of students and has to deal with a different classroom dynamic. I feel that the classroom situation can play an important role in an action research project, so painting a clear picture of the classroom situation is essential.

As a researcher, I am familiar with collecting quantitative data from situations in the natural world, for example analyzing forage from flatland transects, or observing and measuring temperature gradients in snow pack samples. I am also moderately experienced in using statistics to analyze data. Most of my undergraduate work was not science based, so my

research experience consisted of literature reviews and focused on social sciences and ethics. I have conducted a mini social science research project, and feel comfortable with some of the methodology, such as interviewing and surveying. However, I am still intimidated by non-numerical data analysis. Even with an effective methodology, I consider myself a novice at finding trends in written data and deciding upon legitimate groupings. I have completed two courses in Action Research, one during my studies as a graduate student at the Teton Science School and the second through the Masters of Science in Science Education at Montana State University. I gained confidence and knowledge through these courses, and continue to expand my confidence by conducting mini-action research projects in my classroom.

I have focused this particular action research project on an early elementary classroom. When I first taught in the kindergarten – second grade classroom, I was astounded by the obvious differences in learning styles and abilities in the younger ages. The spread of student development and understanding is very apparent in kindergarten and first grade, perhaps because development is so broad at this age. The cognitive ability between a 3 and a 5 year old or a 5 and a 7 year old is truly astounding. So much learning and dramatic development takes place in these early years. For this reason, and because of my teaching position within an early education classroom, I chose to focus my project on this age group.

Part 2: Conceptual Framework

While collecting information through literature, I focused my collection in three different areas: Action Research, Learning Styles and Differentiation. A majority of the information I collected was based on research by a handful of experts in educational fields relating to students learning styles, brain functions and differentiated instruction. The literature, and prior

research, gave me a platform for my research. It provided me with a framework in understanding how individual students learn differently, and how to reach out to each of these individual learners. This framework is discussed in the following sections and the referenced literature is presented as Cited Literature which is located in Appendix A.

1. Action Research

Action Research is a process in which a teacher can personally examine and improve their teaching methodology. The teacher is the researcher as well as the research subject. By inquiring into their teaching performance, the researcher can improve upon personal practice while, in turn, improving upon their students learning situation. McNiff (2003) says, “Action research has both a personal and a social aim. The personal aim is the improvement for your own learning, while the social aim is an improvement of your situation.” (p. 13) an educator initiates the action research process in order to answer questions about their teaching; however it is the process that gives a teacher insight into themselves. Even if the research does not come to a conclusive answer, the process may have made the teacher aware of other aspects of their teaching in which they question and would like to improve. In this way action research is a cycle. McNiff (2003) states, “It does not matter if the social situation does not reach successful closure; it probably will not because any solution allows new questions to emerge.” (p. 13)

Most importantly action research is created and rooted in the researcher’s values. McNiff (2003) claims, “Action research is more than problem solving, and involves identifying the reasons for the action which are related to the researcher’s values, and gathering and interpreting data to show that the reasons and values were justified and fulfilled.” (p. 13) Generally a teacher chooses to pursue action research as a means to improve upon something that he/she feels is inhibiting his/her teaching ability or degrading the situation of his/her students. Hence, their action research project is rooted in that value or feeling of “this needs to

change” or “how can I change this.” This puts action research into a class all its’ own. Not only is the researcher the subject, but they are also relying on their values to create an effective research project.

2. Learning Styles

Walk into a class of students, no matter what age, size or stature, each of those children has a unique mind. Not one of them thinks or processes information in the same way. As Mel Levine (2002) so eloquently put it, “Some minds are wired to create symphonies and sonnets, while others are fitted out to build bridges, highways, and computers; design airplanes and road systems; drive trucks and taxicabs’ or seek cures for breast cancer and hypertension.” (p. 1) Each student that we have in our classroom has his/her own way of retaining and processing what we teach. Diane Heacox (2002) claims, “all students have individual learning preferences, backgrounds and needs.” (p. 7) Diane lists factors that influence an individuals learning preference, such as cognitive abilities, readiness, learning pace, cultural/ethnic cognitive and learning style. For this project I find it important to expand upon students’ learning styles and cognitive preferences. For this I will refer to Howard Gardner’s theory of multiple intelligences.

Howard Gardner is a developmental psychologist who geared his life worked towards human cognition and neuropsychology. He coined the term “intelligence” to encompass a human’s potential skills and capacities. Gardner (1999) conceptualizes intelligence as, “a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture.” (p. 33). He determined eight different “intellects,” verbal/linguistic, logical/mathematical, visual/spatial, bodily/kinesthetic, musical, interpersonal, intrapersonal and naturalist. A human’s cognition may be rooted in

several of these intellects from the time they are born. “In the real world, specific intelligences operate in rich environments, typically in conjunction with several other intelligences. (p. 37) Depending on their intellects, a person will be motivated to learn by the according stimuli or situation. Gardner (1983) gives the example, “An individual with strong abilities in the spatial realm should learn to recognize target patterns quite quickly when exposed to them, to appreciate their identity even when their arrangement in space has been altered, and to notice slight deviations from them when they are presented on subsequent trials or subsequent days.” (p. 385)

Despite the fact that Gardner’s theory suggests that people think and learn differently, it is important to recognize that the contemporary school system that many of us teach in generally promotes only certain types of learning. The secular school model, which a majority of our school systems are based on, focus a majority of their curriculum on linguistic and logical intelligence and often neglect the interpersonal, spatial and bodily intelligences. For example, when learning about a water flow cycle, students are more commonly expected to listen or read about the cycle and then make interpretations instead of exploring an actual river system, to discover its’ intrinsic value. Gardner (1983) states that “...in the standard classroom, teachers talk, often presenting material in abstract symbolic form and relying on inanimate media such as books and diagrams in order to convey information.” (p. 357) Hence, our contemporary schooling style does not promote learning for all students. Ideally a teacher could individualize his/her teaching to engage students who are being overlooked. Gardner (1983) claims this is easier said than done. “Given a wide range of cultural goals, and an even greater variety of intellectual profiles, the challenge of obtaining a match between student and method may seem overwhelming.” (p. 389) This is why it is important to view your students as

individuals, and work on differentiating your curriculum in way that addresses the needs of the learners who are struggling.

In order to engage a student in a lesson, it may be helpful to understand a student's learning preference or "intelligence." Gardner (1999) verifies that we can assess student's intellectual profiles. "For analytic purposes, it is important to tease out capacities that seem central or "core" to the intelligence." (p. 37) Each intelligence manifests itself in preferred activities. Gardner (1999) explains "...linguistic intelligence, for instance, includes core operations of phonemic discrimination, command syntax, sensitivity to the pragmatic uses of language, and acquisition of word meanings...the sensitivity to large-scale, local, three-dimensional and two-dimensional spaces (spatial intelligence), or the aspects of musical processing that encompass pitch, rhythm, timbre, and harmony (musical intelligence.)" (p. 37) By observing a student with assessment tools that are specifically geared towards certain intelligence, we can determine a student's specific learning profile. Again, Gardner (1999) gives the example, "If one could watch a child as he learns to build various constructions out of blocks, one would receive insight into his skills in the areas of spatial and kinesthetic intelligence: similarly, the child's capacities to relate a set of stories would reveal facets of his linguistic promise, even as his capacity to operate a simple machine would illuminate kinesthetic and logical mathematical skills." (p. 386) If teachers could embrace the learning strengths of their students they could use them as engagement tools in their teaching. Carol Ann Tomlinson and Jane Jarvis (2006) claim that "Teachers who see the strengths in students teach positively." (p.17).

Mel Levine, a pediatrician from North Carolina, is dedicated to expanding our understanding of differences among learners. To truly understand how a student learns, Mel Levine and his All Kinds of Minds Institute have developed a method for learning about the neurodevelopmental breakdown of a student. This process is called the Attunement process,

and it reveals a student's strengths, affinities and weaknesses in learning. The purpose of the Schools Attuned Program is to equip teams of educators with new knowledge, skills, and strategies so that sound, defensible professional judgments can be made about instructional practices with struggling learners. (Schools Attuned, 2006) Educators learn about the neurodevelopmental make up of their students, and through questionnaires, they identify strengths and weaknesses in the following eight brain-function constructs: Attention, Temporal Sequential Ordering, Spatial Ordering, Memory, Language, Neuromotor Functions, Social Cognition, and Higher-Order Cognition. (Scherer, 2006, p11). The questionnaires gather information about the students preferred styles of learning, their interests and their dislikes. (Appendix B) Each question is connected to a neurodevelopmental function, and the answers are then consolidated into a profile summary, which identifies, the student's strengths and weakness in accordance to that function.

This information that I gathered about the individual students involved in this research project, through the attunement questionnaires was very helpful in creating effective management plans for each student. I became more aware of each of the students overall needs as a learner, and from there I was able to determine which teaching techniques would help to create the most successful learning scenario for each student. In order to select the appropriate teaching strategies for each student, I referred to the educational literature mentioned here and my prior experience observing other teachers. Ultimately the strategies that I chose worked to support the student's strengths, involve their affinities or to accommodate their weaknesses.

By understanding student's strengths weaknesses and affinities, we can develop more effective and relevant tools to help them learn. Doctor Levine (2006) states, "One of the ways we can leverage skills is by continually pegging them to a child's affinities." (pg 13) It is possible to reengage a disengaged student to a science lesson, by relating it to their interests.

Once a subject becomes relevant to a student they become more interested in participating and engaging. Diane Heacox (2002), claims that through differentiated instruction teachers can, “diagnose student needs and prescribe tasks that create better matches between students and their learning needs, styles and/or preferences.” (p. 17) My intention was to do just that through this project.

3. Differentiation

As an early elementary teacher, I faced students of variable ages and learning styles. I certainly am not the only teacher who has felt overwhelmed by this type of variability. Carol Ann Tomlinson and Jane Jarvis (2006) state, “Teaching is exhausting, it is easy to forget to ask ourselves whether we are teaching sparrows, ospreys, ducks or flamingos. Likely we are teaching all of them.” (p. 17) It is possible as a teacher to meet the needs of students who are at different cognitive levels, and who prefer different learning styles. This is the benefit of differentiating instruction.

Differentiating instruction as defined by Diane Heacox (2002) means to “change the pace, level, or kind of instruction you provide in response to individual learners’ needs, styles or interests.” (p. 5) The ideal situation would be to meet the individual needs of each and every student, however in a real world teaching environment this could be close to impossible. In a differentiated classroom, the teacher does not aspire to establish a separate learning plan for each student, but instead implement a variety of activities and lessons, that encourages students of different learning types to be engaged. Tomlinson (2001) states, “The teacher assumes that different learners have differing needs. Therefore, the teacher proactively plans a variety of ways to “get at” and express learning. He/she still needs to tailor or fine-tune instruction for individual learners, but because different learning options are available based on his knowledge

of varied learner needs, the chances are greater that the learning experiences will provide an appropriate fit for many learners.” (p. 3).

In order to start the process of differentiating a classroom, it is important to understand what differentiation is not. It is not a pattern of assigning a remedial assignments to some student and more challenging assignments to others. Tomlinson (2001) explains that, “Differentiated instruction is not simply giving a “normal” assignment to most students and “different” assignments to students who are struggling or advanced.” (p. 1). Achieving differentiation is the ability to continuously change your teaching process to meet your individual student’s needs. Sometimes students may be completing assignments in small groups, other times they may be in large groups. Sometimes assignments will be set, other times, students may create their own expectations for an assignments. It is a constantly changing collaborative process. Tomlinson (2001) states, “The teacher thinks and plans in terms of ‘multiple avenues to learning’ for varied needs, rather than in terms of” normal” and “different.” (p. 15).

In this research project I addressed how I asked my students to learn. I explored new ways to present information and offered multiple options for class learning activities. For example, I diversified lecture-based strategies with artistic, experiential and group learning projects. I encouraged students to work in groups, testing each other and supporting each others learning needs. Diane Heacox (2002) recommends modifying content, process, and product in order to differentiate in the classroom. To differentiate content you must, “pre-assess students’ skills and knowledge, then match learners with appropriate activities according to readiness; give students choices about topics to explore in greater depth; and provide students with basic and advanced resources that match their current levels of understanding.” (p. 10). The process in which I teach should reflect the learning styles and preferences of my students.

For example, if I knew that I had visual, kinesthetic, and auditory learners, I would want to group my students into learning pods, and assign students a practice that would reinforce their learning style.

For kinesthetic learners, they may be asked to reenact the curriculum that they are trying to learn, while auditory learners may be asked to discuss the curriculum. Heacox (2002) reminds us “That while the content is the same, the ways that students are able to learn or process the information is different.” (p. 11). Students can also be asked to present what they learned in a certain way, hence differentiating the product that is expected. Instead of assigning a specific presentation, I may allow students to have creative freedom for their final product. They can show their learning in a manner that matches their learning strengths. Tomlinson (2001) claims that students can add to and help the teacher modify the core requirements to address individual readiness, interests and learning needs, but is the teachers job to know and communicate indicators of quality.” (p. 86). A teacher needs to be willing to compromise expectations that they may have about how a student should learn.. With flexibility and understanding driving a student/teacher relationship, a student can express their learning needs and a teacher can create a successful learning palate for the student to develop and show their knowledge.

Part 3: Methods

It is often the same students who have difficulty paying attention, following directions, listening, and remaining engaged. As a teacher, it is my responsibility to try to understand these students’ needs and give them tools and stimuli to engage them and encourage learning. This lead me to the development of my research question: By understanding a disengaged student’s

neuro-developmental breakdown, can I increase my ability to implement teaching strategies that will help her/him become better engaged during Theme Time?

In order to answer this question, I identified three students to research. I used the Attunement Process, observational data and interviews to gain further insight into their learning needs, so that I could identify how I needed to improve upon my teaching practice to better engage them. Due to the young age of my students and the nature of my project, my data collection techniques consisted mostly of observations and interviews. This is simply because my students are of the age that they are just learning to write and to think critically about their learning process, hence much of the information that I gathered was through observing their learning experience. These data collection techniques, along with the prior experience that I had with these students, provided a good mix of perspectives and provided adequate information to give insight into my question. The following matrix reveals the data collection techniques selected for this project:

Table 1: Data Collection Matrix

Research Question	Conceptual Framework	Interviews	Classroom Observations	Attunement Process- Questionnaires & Analysis
1 By understanding a disengaged student's neuro-developmental breakdown, can I increase my ability to implement teaching strategies that will help her/him become better engaged during science class?	X	X	X	X

I discuss each of these techniques respectively under the following headings in this section: the Attunement Process, Observations and Interviews. Finally, I describe the methods I

used for my Data Analysis Process. First, I will explain the flow of my project so that the context is fully understood.

I identified three students' who showed regular signs of disengagement. I explored their learning needs and elected and implemented specific teaching strategies in response to those needs. Through observations and interviews, I identified if these strategies were successful for each of these students. The three students were chosen because of their process of learning, which included becoming disengaged. I elected these strategies in response to a management guide that I developed for each student through the Attunement Process that I will describe below. I observed each of these students in their learning environment during three different theme lessons prior to implementing the chosen strategies that I had included in their management plan. This allowed me to focus on the students and how they were responding to their environment, content and specific activities. I conducted a base interview of each of these students which include questions about their likes and dislikes in school and their preferred ways of learning. I then observed each of the students during lessons where I was consciously trying to implement strategies that I thought would encourage engagement. Lastly, I interviewed each of the students again, asking updated questions that referred to the second set of lesson observations, but continuing the focus of gaining information about specific situations that seem to help students learn. I will further explain the methodology behind each of these data collection techniques during the sections below.

The Attunement Process:

The official process of learning about three of my students occurred in the summer and fall of 2006. These students, known in this paper as Jill, Jack and Jenny were respectively in Second Grade, 1st Grade and Kindergarten. I chose these three students to include in my

research because of their unique learning styles, and their tendencies to be disengaged from their learning during different times and activities. I had prior knowledge of and experience with each of these students. This allowed me to have a good platform in which to conduct the Attunement process, a systematic process whereby I used neurodevelopmentally-based observation instruments to understand students' learning profiles and eliminate the mystery of the learning process. (Schools Attuned Program Overview, 2006 para 2). Upon this platform, I was able to determine and outline when each of the students were engaged and when they were not. I defined engagement as the student's obvious interest and/or focus on a subject. In each student's Profile of Engagement, which is located in the Data and Interpretation Section of this paper, I described how each of these students appear and act when they are engaged and on-task, and when they are not.

The Attunement Process, which Jill, Jack and Jenny underwent, was developed by the All Kinds of Minds Institute and includes a series of questionnaires that are answered by the teacher, student and parent. I have included sample questionnaires as Appendix B. The answers to these questionnaires are then analyzed through a process also developed by the All Kinds of Minds Institute which ultimately identifies the student's affinities and their strengths and weaknesses in specific areas of neurodevelopment function. The eight different areas of function that are associated with this process are:

1. Attention (Mental Energy, Processing, Production)
2. Memory: (Short Term, Active Working, Long Term)
3. Language: (Receptive, Expressive)
4. Temporal-Sequential Ordering
5. Spatial Ordering
6. Nueromotor: (Gross-Motor, Fine-Motor, Graphomotor)

7. Higher Order Cognition
8. Social Cognition (Verbal Pragmatics, Social Behaviors)

By identifying a student's strengths, weaknesses and affinities, I was able to develop a management plan for each of the students, that would better engage them through supporting their strengths, relating to their affinities and accommodating their weaknesses. Their management plan listed each student's strengths, areas of weakness, and specific accommodations (strategies for bypassing weak functions) and interventions (strategies for strengthening weak functions). I have included the specific management strategies chosen for each student in Table 2, located in the Data and Interpretation section of this paper.

The management plan developed for each of these students during the Attunement Process gave me specific teaching strategies that I could implement during my research. In selecting the appropriate strategies, I referred to educational literature and my prior experience observing other teachers. Specifically, I recalled observations from faculty that participated in the Schools Attuned Training Session that I attended during the Summer of 2006. In addition, I referred to the Schools Attuned Management Resource Guide that lists management strategies, accommodations and interventions by neurodevelopment construct. (All Kinds of Minds, 2000). I filled out a management plan for each of these students and connected the chosen strategies with specific areas of the individuals learning profile. (Appendix C). The strategies selected were matched with individual learning weaknesses and strengths an example of this matching process is listed in a table in my Data and Interpretation section.

The Observation Process:

In order to gain insight on my teaching and the learning needs of these individual students, I observed them during six different thematic lessons. Each week we dedicate the

entire morning to learning about our theme. The lessons taught were based in social studies and science and were usually experiential and hands on. This year, our theme was Explorations. We broke this broad theme into three subcategories. This year we chose to focus on Naturalist Explorations (included learning about the Muries), Navigation (included learning about astronomy, the snow cycle, tracking and space exploration) and Westward Expansion (included learning about Lewis and Clark and the Oregon Trail).

Each week we had a different essential question that helped guide our curriculum goals. I have attached our essential question guides for our Winter and Spring Trimesters as Appendix D. The purpose of this curriculum is to really immerse students in their learning about subjects that affects them in some way on a local/relevant level. We try and bring each topic back home to a place they can identify with and relate to. For example, when teaching about naturalists, we chose to study Olas and Mardy Murie, famous naturalists who lived here in Jackson Hole; while teaching about the Oregon Trail, we conducted a series of simulations to help students identify with what a journey on the Oregon Trail might be like, and what Jackson Hole was like during that time.

The first three observations were conducted during the dates of January 9th, January 30th and February 6th, of this year. These observations took place during our winter trimester's Navigation theme. Respectively, the lessons had the following titles:

1. Navigation Scavenger Hunt
2. How explorers use compasses?
3. Space Navigation: Where do I live?

I have included each of these lesson plans in Appendix E. My goal during these initial observations was to observe the students and determine when they appeared to be engaged and when they seemed to struggle with engagement. In addition to the data that I collected through

the attunement process, this would help deepen my understanding of what engaged them and what did not. I made these initial observations while one of my team teachers was teaching. This gave me the opportunity to really watch the students in their environment of learning.

My second set of observations was made after I had done my initial interview with each of the students. These three observations were made on February 14 and February 15. This second phase of observations was in conjunction with the following three lessons:

1. The Phases of the Moon
2. Creating a Constellation
3. Navigating the Town Square

These lessons were different than the first set of lessons observed, because the intentional teaching strategies were used to better engaging the study students. I taught, and in some instances co-taught, each of these lessons so that I could implement specific strategies to reach out to and hopefully affect the study students in some way. I did not however design each of these lessons. My team members who did most of the theme curriculum design in the winter constructed the Constellation Lesson and the Navigation of Town Square Scavenger Hunt. I did design the Phases of the Moon lesson plan and consciously chose to co-teach the other two lessons because of their content and creative make up. I thought that these lessons had attributes that matched the teaching strategies that I had chosen.

I originally had planned on videotaping these sessions, so that I could check back in with what had happened with the students. At the last minute, I decided not to videotape the sessions due to their active manner. I instead took quick notes throughout the session and then at the end of the day, went in and typed up all that I recalled from the lesson regarding the students and their engagement.

Each of the lessons were created with different projects and teaching techniques in mind, with the hopes of gauging which strategies seemed to have affect on the students and which did not. The following table describes the strategies that were intentionally implemented into each lesson.

Table 2: Engagement Strategy Implementation

Student	Lesson	Implemented Strategies	How it was Implemented
Jill	Phases of the Moon	- Art-based activities - Promote affinities/passions	- Creation of Moon Phase Calendar - Encouraged students to choose the topic/character of their constellation.
Jill	Constellation Creation	-Art-based activities	-Creation of Constellation Poster
Jill	Navigation Town Square	-Movement-based Activity -Leadership/Social	-Scavenger Hunt from place to place - Different roles to take on – Navigator, Reader, etc.
Jack	Phases of the Moon	-Art-based activity -Performance -based demonstration	- Creation of moon phase calendar -Students demonstrated the cycle of the moon around the earth with their bodies and a flash light.
Jack	Constellation Creation	- Art-based project -Promote affinities/passions	- Creation of constellation poster - Encouraged students to choose the topic/character of their constellation.
Jack	Navigating Town Square	- Movement-based activity - Leadership, social, Performance oriented	- Scavenger hunt from place to place -Different roles to take on- Navigator, Reader, etc.
Jenny	Phases of the Moon	- Art-based activity - Varying learning opportunities, changing often.	- Creation of moon phase calendar - Included a read aloud, physical demonstration, discussion and art project.
Jenny	Constellation Creation	- Art-based activity - Affinity-based creation	- Creation of Constellation Poster
Jenny	Navigating Town Square	- Movement-based activity - variability to promote engagement	- Scavenger Hunt from place to place - Different information being presented in different places and different roles being assigned during each leg of the hunt.

The Interview Process:

I conducted two interviews of each student. The first interview was conducted after my initial observation, and the second interview was conducted after my second observation. The

interview questions were different between the two interviews, but had the same purpose of learning about what was engaging and interesting to the students in school and what was not. Initially, I spoke to the students about lessons that they had recently been taught, while the second interview focused on the three lessons that included intentional strategies for engagement. The interview questions used are listed in Appendix F.

The purpose of the initial interview was to gain insight further into the learning preferences, affinities and even fears of the students. The following questions addressed the student's passions and affinities:

- 1. What are your favorite hobbies or activities? What do you enjoy doing at home?*
- 2. What is your favorite thing to do in school?*

Other questions delved into the activities and topics that most engaged the students. These also gave insight into their preferences in learning. Examples of these questions are:

- 4. Not including Recess or Lunch, what is your favorite subject in school?*
Why? PROBE: What subject do you think you learn the most from, and why
- 6. During our science class this year, what activities have you enjoyed the most?*
- 7. What is the most exciting thing that you have learned about in science this year?*
Probe: Why do you think this is the most exciting thing?
Why do you think you remembered this thing so well?
- 8. Is there anything that you wish your teachers could do more of to help you learn?*
Probe: If I asked you the number one thing I might do to help you learn, what might that be?

One of the questions asked was intended to bring out information about student's weaknesses, challenges or fears. It was stated as follows:

- 3. What is it in school that is the most challenging for you?*

Why? PROBE: Has it always been this way for you?

The answers to these questions gave me first hand information about the student's neurodevelopmental breakdown in the form of specific preferences in learning, likes, dislikes and passions in and out of the classroom. This information is priceless in teaching and in determining the strategies to use when teaching to a specific student. The school-based questions were supplemented with probes to try and make the questions more relevant to the student. For example when asking the student about their science lesson, I would ask the question and if there was a pause, I would remind them what we were doing in science. It is often difficult for students of this age to recall what is happening in different curriculum times, so little reminders seem to help get their train of thought started.

The second interviews were conducted on March 9th. The purpose of the second interview was to check back in with students and see if their likes, dislikes about activities and learning had changed with the implementation of the last three lessons. The questions of this interview were geared towards the last three lessons that were intentionally planned and observed, however interview had the same intentions as the first. The following questions addressed the student's passions and affinities as well as the activities and topics that seemed to most engage the students. In school, engagement and affinities or likes seem to go hand and hand.

- 1. What is your favorite memory from the journey?*
- 2. What do you remember learning when during our Moon Calendar project?*
- 3. What do you remember learning during the constellation project?*
- 4. What do you remember learning about the Scavenger hunt?*
- 5. Which of these activities did you like the best? Why?*
- 6. In which one did you think that you learned the most?*

7. *During which of these activities do you think you had the easiest time paying attention?
(When were the most interested?)Why?*

9.*If you could tell us to teach on of these lesson over which would it be? Why?*

One of the questions asked was intended to bring out information about student's weaknesses, challenges or fears. It was stated as follows:

8. *During which of these activities do you think you had the hardest time paying attention
(bored?)Why? Were there any activities that you disliked?*

From these interview questions I was able to gauge what students were enjoying and maintaining interest in school. They also gave me interest in to specific passions and affinities of these students in and out of school.

Methods for Analyzing Data:

The data I collected exists as questionnaires, management plans, interview recordings (transcribed into word documents) and observation write-ups. The data that I collected for the Attunement Processes was analyzed through an online analysis program that was created for The Schools Attuned Program, (Schools Attuned Online Teachers View Key, Retrived May 20, 2007) as well as through Consolidation Forms also created by the Program which I have included as Appendix G. As for the additional data collected, I used a quantitative data analysis procedure compiled and outlined by Dr. Bill Hug (Hug, retrieved May 5, 2007) to identify trends and relevant information in the data. I will describe the steps that I took in the subsections below.

1. Understanding the Research Question

The first step of my qualitative data analysis was to fully understand what it was that I wanted to discover by asking the question, "By understanding a disengaged student's neuro-

developmental breakdown, can I increase my ability to engage students by implementing teaching strategies that support their strengths or accommodate/intervene upon their weakness?" I realized that by attempting to answer this question, I would discover techniques on how to engage individual students in my class. By understanding a student's learning needs, I would gain insight into which teaching tools and techniques were successful and unsuccessful for not only that individual, but potentially for other students who had similar learning needs. To answer this research question, I would need to identify learning trends for each individual student and the management strategies that worked best to engage that individual student.

2. Understanding the Conceptual Framework

The second step of my qualitative data analysis was to root myself in a cohesive conceptual framework. By understanding what others have done, and how they have done it, I was able to develop a project that made sense, and use others knowledge to support and challenge my actions. I chose to focus my conceptual framework into three main categories: Action Research, Learning Styles and Differentiation. Essentially, my action research project attempts to understand individual student's learning styles in order to choose the appropriate differentiation techniques that will engage those individual students. By understanding the framework of what has been done in the realm of researching learning styles and differentiation, I was able to effectively look through my data and find information that seemed to relay a students learning style and then match it with an affective teaching method.

3. Reading and Labeling the Data

After I had a clear idea of why I was conducting this data and the background information on my data topics, I embarked upon this third step of my qualitative data analysis.

It began with me transcribing the recorded interviews into word documents. Once all of the data was put into readable format, I just started reading. I made notes in the margins of each of the observations and interviews. I had no stipulations at this point of when I made notes or why. I just simply made notes of whatever came to my head. Many of my notes were theme oriented, while others were relevant comments from prior knowledge or experience that I had with a student. It was during this step that many of my assertions developed. I began to see themes and to realize my main findings.

4. Unitizing the Data

I began this step of the analysis process by physically cutting pieces of data out and making theme-based piles. I soon realized that this confused me more than helped me, so I decided to change my method all together. Instead, I compiled all of the data that I had for each student into individual piles. I then reread the data that I had for each student, as well as the notes that I made in the margins, and on a side piece of paper, I wrote down the themes that emerged. I also noted where I had seen evidence for that theme, if it be “Jill’s 1st Interview” or “Jack’s 3rd Observation.” I then had a list of themes for each student. I was able then to realize the correlation of the themes between students. I did not compare students to each other, but instead recognized that some students responded or acted similarly to another student in certain instances.

5. Establishment of Categories and Assertions

Once the themes that developed out of step 4 were apparent, I was able to develop specific assertions. I put all of the data for each individual student into a folder. This included data from their interviews and observations, along with their management plan and the list of

themes that came from unitizing their data. By then went through and reread their data and made additional notes on the theme sheet that I had created for the individual student. I was then able to develop specific assertions that were relevant for that specific student. I found that, just like the themes, the assertions often were relevant between students. These assertions became the backbone to my data interpretation. Each assertion was applicable to one, two or all of the students and could be supported by a variety of examples from the data.

Data & Analysis

The data that I gathered during my interviews and observations with these three kindergarten through 2nd grade students led me to the following expected and unexpected discoveries. These discoveries give me a better understanding of how to engage these individual students and how to alter my teaching practices to engage general learners with varying engagement needs. By expected discoveries, I mean discoveries that were expected and encouraged through the management strategies that I, and my colleagues had chosen. By unexpected discoveries, I mean additional patterns that emerged that will affect my teaching practices. I believe strongly that each individual student is a unique learner. No student seems to learn or succeed exactly like another student. For applicability, I have chosen to present my assertions in a general manner, and use examples from these specific case studies to support my assertions. By generalizing these assertions I will be able to use them as possible strategies for other students with similar learning needs. It is not guaranteed that the affects will be the same, but it will give me potential strategies to use within my greater classroom. These assertions give insight into how these individual students learn and strategies that worked and didn't work to engage these students. Below I have listed four different assertions as Expected Discoveries

and two assertion as unexpected discoveries. I support each assertion with evidence from my research, from the applicable case studies.

Expected Discoveries:

Assertion I. Since each student learns differently, it is important to identify each student's Profile of Engagement in order to be able to determine when they are engaged in a lesson and when they are not.

A Profile of Engagement paints a picture of who a student is and how they appear when they are engaged. The information for this profile is derived from spending time with a student and experiencing their actions and performance in a classroom setting.

Profile of Engagement for Jill:

Jill is a second grader whom I have known and taught the longest. Her profile of engagement has changed dramatically over the last couple of years. I identify her disengagement by looking around, fiddling with a friend's hair or looking to others for guidance. She has a difficult time following through with instructions; however she is resourceful and is able to follow her peers lead. When she is engaged, she looks at the person giving instruction, and raises her hand to answer questions or share. Two years ago, Jill had a very difficult time staying engaged during verbal dialogue and during product based activities. She also had a difficult time starting and finishing activities, unless they were self-directed and art based. She has matured in the last two years, and she is now on-task and takes great care with product-based projects. She has shown great growth in her engagement levels during verbal sections of a lesson. She has struggled with reading and remembering site words, however this year, her development has sky-

rocketed, along with her confidence. With this confidence, her engagement during verbal dialogue and read aloud times have improved.

Profile of Engagement for Jack:

Jack is a first grader and who has a very unique profile of engagement. He is outspoken when he is engaged and when he is disengaged. When he is engaged, he is very obviously excited by and passionate about the topic, saying “yes!” and putting in his two cents regularly. He wants to share his thoughts and ideas that are relevant to the topic at hand. He often moves his body and lies down, however he continues to look at the person giving instruction. This impulsive behavior is also apparent when he is disengaged. He often lies down and moves around, however he is not looking at the person who is talking, and he talks out about things that are irrelevant to the topic being discussed. He often can’t remember the directions that were just given because his mind is thinking about something totally off topic. In general, Jack has a difficult time getting started on activities that he is disinterested in. Once started, he will finish quickly without much care. On the other hand, if he is engaged in project, he will work on it constantly, through free choice time, and immediately when he gets to school. He is very passionate and affinity driven. If a project has something to do with one of his interests, such as acting or pirates, he will take it on full force. He is very creative, and loves to make up his own stories, books and pictures. He also loves to perform.

Profile of Engagement for Jenny:

Jenny also has interesting engagement tendencies. She needs to be moving. And although she may appear to be disengaged as she stands up and starts to fiddle with something behind her, she can still be listening and interested in the topic. It is difficult to gauge when she is truly

engaged and when she is not. I have found that if she checks in with the teacher, either by looking at them and/or turning her body back in their direction on a regular basis, then she is engaged. In general, her disengagement is apparent during instructions and verbally presented information. She is very engaged when working on activities that she likes. Specifically, she is very artistic and takes great care in using color and creating beautiful products. She enjoys singing and using songs during lesson time. Her confidence in math, specifically in counting and remembering numbers has been apparent throughout the year. Early in the year, she was very withdrawn in math, however her confidence has improved along with her number recognition and counting abilities. She now claims that Math is her favorite subject.

Assertion II. By understanding a student’s strengths, affinities and weaknesses, it is possible to determine teaching strategies that will better engage a student in a lesson.

By accompanying each student through the Attunement process, I was able to officially determine each of the students areas of strength, weakness and discover some of their affinities. By understanding their learning needs, I was able to develop strategies that I thought would encourage engagement within a lesson plan or project. Each student’s learning needs were very different, hence the strategies that I chose to encourage engagement varied from student to student.

Table 3: Student’s Profiles and Selected Teaching Techniques

Student	Strength, Affinites and Weaknesses <i>(nueromotor function)</i>	Teaching techniques to encourage engagement:
Jill	<u>Strengths and Affinities:</u> - Artistic (<i>Spatial Ordering</i>) - Strong Social Behavior (<i>Social function</i>) - Gymnastics	<u>Priority:</u> - Incorporate art into lessons and products. - Allow for a manipulative (such as a squishy ball) during verbal instruction.

	<p>- Writing – phonemically correct</p> <p><u>Weaknesses:</u></p> <p>- Appears disengaged- Moving around, focused on others, difficulty recalling instructions. (<i>Attention: Active Working</i>)</p> <p>- Reading: jumps to the first word that comes to mind, instead of sounding word out. (<i>Attention, Memory</i>)</p>	<p>- Encourage students to focus on an aspect of the discussion that they could share afterwards. (Jill enjoys sharing.)</p> <p>- Plan for frequent short breaks, brain gyms and sensory activities.</p> <p>- Repeat Directions: Tell in steps and have student retell sequence of directions.</p> <p>- Give student opportunities to tell personal experience stories.</p> <p><u>Secondary:</u></p> <p>- Encourage art development.</p> <p>- Encourage creative writing, without spelling pressure</p> <p>- Encourage Jill to be aware of her focus, and disengagement. Have her tally mark how many times she is losing attention.</p>
Jack	<p><u>Strengths and Affinities:</u></p> <ul style="list-style-type: none"> ▪ Creative: loves creating stories, building, experiments, performing. ▪ Passionate ▪ Pirates, spaceships ... many other things as well. <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> ▪ Attention Production Control ▪ Attention Processing Control 	<p><u>Priority:</u></p> <p>- Give student opportunities to tell personal experience stories.</p> <p>- Encourage student to demonstrate and share his passions through stories and projects.</p> <p>- Plan for frequent short breaks, brain gyms and sensory activities.</p> <p><u>Secondary:</u></p> <p>- Encourage student to keep count of how many times he interrupts teacher or peers: create a signal to visually remind him to control his body and his voice.</p>
Jenny	<p><u>Strengths and Affinities:</u></p> <ul style="list-style-type: none"> ▪ Language ▪ Spatial Ordering ▪ Higher Order Thinking ▪ Family ▪ Swimming <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> ▪ Attention Production Control ▪ Attention: Mental Energy Control 	<p><u>Priority:</u></p> <p>- Allow for a manipulative (such as a squishy ball) during verbal instruction.</p> <p>-Plan for frequent short breaks, brain gyms and sensory activities during verbal based lessons</p> <p>- Encourage student to use props, and or art to express or remember something.</p> <p>- Give student opportunities to tell personal experience stories.</p> <p><u>Secondary:</u></p> <p>- Use stories and pictures to help student to visualize instruction.</p>

I selected priority strategies to use for each of the three students. Not all strategies were used in every lesson; at least one strategy per student was implemented into the second theme lessons that were observed. The strategy selected was dependent on the behavior of the student and the specific lesson being taught that day.

Assertion III. When a student who is regularly disengaged is strong in social cognition and enjoys sharing, she or he may become better engaged when encouraged to participate through sharing their thoughts, or taking on a leadership task.

Students who are strong in Social Cognition can act very different from case to case. Strength in Social Cognition is defined as the ability to succeed in social relationships with peers, parents, and teachers. (Schools Attuned, May 20, 2007) This is a very influential construct as it can drive a student's behavior and focus within the classroom. Even in early elementary, you see students looking around to gain peer approval and acceptance. Jill and Jack both are driven by social motivation. They are very different students; however they both are socially oriented.

Jill

Jill is very close with her group of friends, and enjoys being with them as much as she can. She is well accepted among the K-2 community and enjoys sharing her thoughts, ideas and affinities aloud. She is engaged during moments of sharing. Even if she doesn't have the answer to a question, she will raise her hand just so that she is outwardly participating. During my third observation of Jill, she had lost interest in a book that was being read aloud. She was laying her head down and looking away. As soon as questions began she immediately reengaged and raised her hand. When called on she was asked the name of the continent, a

subject that had been discussed in the book, she said “earth?” She was unfazed by answering incorrectly and stayed engaged for the next question. Later during that same observation time, while she was working on a space timeline activity, a yes or no question was asked to the group. It appeared that Jill’s hand went up in response to other student’s hands going up. She was called on and she uncertainly nodded yes. She answered incorrectly, but again seemed unfazed.

Jill also enjoys sharing moments with her peers, as a friend or even as a leader. If an activity is one that she can share excitement over, she tends to go into the activity with full engagement. For example, during the Create a Constellation activity (observation #5), Jill and her friend exhibited outward enthusiasm during the demonstration. They were giggling and clapping and looking at each other and smiling as each piece of the activity unfolded itself. Jill accomplished this activity with full focus and created a beautiful final product. She also becomes fully engaged when she is in a leadership position. During Observation 1, she was selected to be one of the readers of her team. At first she appeared nervous about the role, explaining to everyone that “2nd graders don’t always know the words, so don’t always just ask us because we are 2nd graders.” She appeared afraid of the expectation by her peers that she would know all of the words. Her friend, who is a strong reader, was selected to co-read with her; Jill suddenly became super excited to take on the role. She embraced this leadership role, and began answering questions about the instructions for the other students, showing superb engagement. During our Navigation of Town Square (Observation #6), Jill had a difficult time engaging during the initial instructions. She was looking around and chatting with peers until she was given the task as reader. She perked up and immediately reengaged, taking her role seriously. By being given a role she becomes engaged in the activity at hand.

Jill's engagement can also be tested by her social needs. In the first interview I had with her, she claimed her favorite time in school was Capstone. Capstone is a short, once a week experience for the 2nd graders. This year we have been in a pen pal, educational triangle with students in Rhode Island and Terra Prometida, Brazil. It gives the 2nd graders a chance to learn about these other communities and to teach others about our community. Jill is very activity involved in this experience. She loves sharing about her community, friends, family and school. She also loves spending time with those friends who are also 2nd graders. Engagement in the lesson at hand is certainly not an issue during capstone, but she at times disengages from the lesson to focus on her friends. This is easily resolved when her friends refocus and are engaged.

Jack

Jack is a very different than Jill in his Social Cognition profile. He loves to be heard and to share his thoughts and ideas. He enjoys acting and performing. His personality is magnetic. People like to be around him. Because of his weaknesses in Production Control, an Attention sub-construct, he has a difficult time regulating his academic and behavioral output. (Schools Attuned, May 20, 2007). He often speaks out, without raising his hand and even when someone else is speaking. Although he understands that this is not appropriate behavior, he impulsively acts out of emotional feelings of excitement or disappointment. This causes him to miss out on important information, and in addition, creates a disrupted environment in the classroom for teachers and students. By reminding him to raise his hand and redirecting him when he is speaking out and then allowing him to share when he initiates the task in an appropriate manner, he gets his fill, but is reminded how to behave. This is a difficult task when he is speaking out due to excitement, for I love to see his enthusiasm around learning. However, I have found that by encouraging him by creating roles or tasks for him that he can focus on or

by redirecting him in a positive manner he maintains his enthusiasm in a way that is less distracting to the other students. My positive redirection usually sounds like, “Jack, I can’t wait to hear what you have to share, but right now I am listening to Cindy, so why don’t you raise your hand, and when she is finished I will call on you.”

We saw Jack’s impulsive need to share and speak out in Observation 3, when he raised his hand to answer a question and was saying out loud, “Ooooh, Ooooh, Ooooh,” and waving his hand. During that same observation, we I saw Jack yawning, moaning and rolling around on his side during the read aloud, and then as soon as questions started being asked and sharing opportunities were offered, he popped up and was reengaged. During the second interview, when he was asked “During which of these activities do you think you had the easiest time paying attention?” Jack responded with, “The Scavenger Hunt, because I didn’t say a word.” He associates paying attention with not saying a word, however ironically he seems to be paying better attention when he knows that he soon will be able to speak to his community and share.

By encouraging Jack to share his thoughts, it makes him connect to the information at hand so that he can cohesively share with his peers, which he loves to do. During the 2nd Observation, students were standing around the room on X’s and were being given directions on an orienteering activity. Jack was lying on the floor, with a shoe off, making growling noises. The teacher asked him “Jack, how will you find your way?” Jack answered, “What?” when asked again he had a round about story that ended in, “I will follow my tracks back. Yeah, that’s what I am talking about.” Although this was a longer unnecessary way to share his thought, which we will discuss further in response to Assertion III, he became reengaged in the task at hand. During our Moon Phase Demonstration, I chose Jack to help in the demonstration, he had been talking aloud during the read aloud and I felt as though he needed a task. I assigned

him the task of being the moon which was revolving around the earth. He was excited about the task and just started moving quickly in circles. I encouraged him with my voice and by physically slowing him down to find an appropriate speed so that others could understand the demonstration. Once he got it, he embraced his role and seemed engaged. Jack's enthusiasm is exciting and unique. By channeling his enthusiasm into an appropriate task, he is able to gain focus and to be engaged in the lesson at hand.

Both of these students showed disengagement in different ways, Jack is more boisterous, while Jill will subtly lose eye contact and look around. However by giving them tasks that call upon their strengths in social cognition, I am able to encourage their engagement in learning.

Assertion IV. A student who is often disengaged and who shows strong Spatial Ordering or Temporal-Sequential Ordering tendencies or has an affinity for art maybe reengaged through art-based activities.

Students who are strong in their Spatial Output create products that have spatial characteristics. Students who are strong in Temporal-Sequential Output create products in which the content is arranged in an optimal order. Although a student's artistic talent does not necessarily depend on these constructs, I am assuming that for a student to have an affinity towards artistic creation they must be fairly efficient in at least one of these constructs. I connect these products to these constructs, so that I can create a larger student population to which I can potentially relate my findings. Creating artistic products seems to be an expression that is embraced by many early elementary students. Students who have a difficult time in other aspects of language, like reading or math, may become fully engaged when they are given the

chance to express themselves in an artistic manner. By using art projects as a mode of learning, students who are often disengaged, may become and engaged and be encouraged to retain the information being presented.

Jenny

It is very difficult to determine when Jenny is engaged and when she is not, except when she is participating in an art project. She loves art and it shows. Jenny is quickly developing her skills as a language arts student as well as a math student, however at the beginning of the year, she had many hesitations about math and her self confidence was low in that subject. Despite the challenge surrounding numbers in math, she has no problem creating patterns and groups, by color shape, size etc. This strength in sequencing and spatial awareness is obvious and it translates well into her art ability. When Jenny is disengaged she is usually up and moving around, facing the other way, chatting with peers. She is a mover and it is very normal to see her walking or crawling around when verbal instruction is given. However, even if she appears out of the loop and not engaged, she could very well be listening. I will discuss this further in Assertion V. It does appear that Jenny is almost always engaged, sitting still and focused, when she is participating in a creative-based project. Specifically, she likes painting, drawing and coloring. During theme time, I saw great success with Jenny engaging in a topic through art. During Observation 3 (Feb 6, 2007), Jenny had placed herself in the middle of the pack of students to listen to a read aloud. Shortly after the read aloud began, Jenny appeared distracted. Soon she was laying on her stomach and kicking her feet. Then she was looking away, and eventually up and walking around, checking back into the book every-so-often. She then left the room to retrieve her water bottle, and when she returned, she dragged her pillow to the back of the room. She became completely disengaged at the back of the room, as she

focused on other students and some notebooks that were on the ground behind her. After the read aloud, students were split into groups and Jenny went in to participate in map making activity. She was the first to be seated and engaged immediately on the teacher who was giving instructions of how they were going to color in maps from the book, to create a book of their own. She sat quietly and remained focused throughout the activity. She created a beautiful product.

During Observation 4 (February 14, 2005 pg. 2), Jenny again had two very different learning experiences during one lesson. The beginning of this lesson on Moon Phases was made up of a read aloud, demonstration and discussion, while the second half of the lesson was focused on creating a Moon Phase Calendar. Jenny sat still during the short read aloud, and remained seated for the first part of the demonstration. When Jack began talking aloud, she seemed to lose interest and she swiveled around in her chair and began playing with something on the back of her chair. Her disengagement was obvious. As soon as we moved over the tables with the art supplies laid out, she seemed focused. After she had oriented herself with her art materials, she looked at the whiteboard, interested in the Moon calendar Samples. Jenny did a nice job completing the moon phases on her project and then worked on framing in the calendar with bright colors. Later in Interview 2 (May 7, 2007, Question 6), Jenny claimed that the Moon Calendar was her favorite activity from the three observation days. She said, “The moon. Because you got to color your own colors on it. On all those different days of the week.” I have found that students are engaged in an activity or topic when they enjoy an activity or a topic.

Jill

During Interview 1 (February 12, 2007, Question 6), Jill claimed that her favorite activity during their time was when we made dog sleds out of clay. During Interview 2 (date, question 10), I asked Jill which of the lessons that she would like us to teach again. She said, “Constellations. Cause we could make up our own instead of finding another constellation.” (page 3) It is obvious that Jill enjoys creative activities. She takes an enormous amount of care and interest in her artwork. During the Constellation Activity, (Observation 5, February 15) Jill was very excited about the activity. She was giggling and clapping in excitement as the teacher demonstrated how to create a constellation. After the constellation, she immediately got to work. She came up with a great plan on how to put together her constellation, and then lost confidence when she got to the glue. She said, “I can’t do this correctly.” She seemed concerned that she was going to make a mistake on her art work. While she was waiting for help, she decided to go for it and she finished the product herself. It was a beautiful picture of her dog. Jill takes great pride and care in her art work, to the point where she is very worried about messing up.

During other theme activities, I didn’t see the same level of engagement that I did during the art activities. During discussions and demonstrations, Jill has shown disengagement by laying on the floor, chatting with friends (Timeline Activity, Observation 3, February 6, 2007), fidgeting and switching weight and not maintaining eye contact (Orienteering Activity, Observation 2, January 30, 2007). Although, overall Jill is good about reengaging herself during times of disengagement, it seems as though she just remains engaged when working on something creative and artistic. This focused engagement that she finds during her artistic times I have also found to have an affect on her retention of the information at hand. I will discuss this further in Assertion IV.

Assertion V. When a student who appears engaged has a difficult time remembering what is taught in a lesson, or following directions that were just given, they may have a weakness in their Active Working Memory or their Attention Processing Controls. By creating relevance to a topic by relating it to an affinity or interest, it encourages focus and information retention.

Early elementary students love talking about their passions. It may be their dog, a sport, a character; Whatever it may be, it is something that they can relate to and that keeps their interest for a long period of time. By bringing these items of great interest into the academic setting it can help students to relate to a topic at hand, engage and retain information about that topic. All students have affinities; however some are more driven by them than others. If a student brings their affinity into the classroom, either by talking about it, dressing up, drawing pictures, it is very likely that they are affinity driven. Affinities may be as obvious as a character, or as inconspicuous as an action, such as creating things, making art, singing or performing.

A student with a weakness in Active Working Memory is challenged by mentally suspending information so that they can manipulate it and put it in memory or keep available to use it quickly. Students who have a difficult time following directions may need to see directions written on the board, or to have them given in steps, so that they can focus and decode the information to put into their short term memory. Students with a weakness in Attention Processing Controls have a difficult time regulating the use of incoming information. (Schools Attuned, May 20, 2007) Students are exposed to huge amounts of information each day; they have to take the information, sort it and put it into their short term memory or long term memory and be able to recall the information when needed. A weakness in Processing

Controls and/or Active Working Memory makes this task difficult. In order to determine if there might be a weakness in these areas, a student must have the chance to take in the information by being engaged. If a student is disengaged and not listening, they have not been exposed to the information, so recalling it later would be impossible.

Jack

Jack is a passionate person. He is driven by his affinities. Most people are more engaged when they are focused on something that they are passionate about, but for Jack, relating to his affinities actually affects his production in school. By encouraging Jack to pursue activities or ideas that are affinity based, he puts thought and time into the product he is working on. We often see Jack not putting thought and time into his work. If he isn't interested in a subject he will not spend the time working on it. During Observation 3 (February 6, 2007), Jack was participating in a timeline activity. The students were expected to come up with their own timeline, including important times in their life and development. After a few minutes of looking at his paper and looking around, he started to change "I am all done, I am all done..." even though he hadn't even started. His disinterest puts a barrier between him and his work. We saw this again during Observation 3 (Orientation Activity, January 30, 2007) when Jack was participating in an Orientation Activity, he attempted to find North and after just a moment he stated, "I'm done," even though he had not even started. His disinterest in a topic creates a barrier between him and his learning. However, by implementing activities that connect to or that he can connect to affinities, the barrier can be broken down.

During the February 6th lesson (Navigation Timeline, Observation 2), students were given the opportunity to build spaceships out of legos, he was very excited about this and he reengaged with full force. During Interview 1 (February 12, 2007, Question 6), I asked about

what activities he had enjoyed the most during theme time. Jack mentioned “Well we like study space and I like space ships and planets.” His interest in spaceship allowed him to engage in the spaceship building activity, even though he was disengaged just minutes before.

This strong connection between engagement and interests was scene many times over. During our Constellation Activity (Observation 5, February 15, 2007) Lucas was very distracted during the directions, when he sat down to begin his own constellation, he seemed more excited and focused. I wondered what change had been between the directions and the project. At first I assumed it was because of the project itself, I questioned if it was because it was an art project that he liked it. This may have had some influence on the change in engagement, however when he was finished, I saw that he had created a constellation of a pirates hat. From prior knowledge, I am well aware of Jacks passion for pirates. He talks about them often, and during the previous school year, he dressed like a pirate on several occasions. While I observed Jack during the beginning of the Compass Rose activity (Observation 2, January 30, 2007), he was fidgety and talking to himself. When he was given the compass rose, to decorate and complete with directions and all, he worked diligently until he finished it. He referred to the compass rose on the board, checking in to make sure he did the directions correctly. His engagement was outstanding, and his product was beautiful. Later he declared this as his favorite theme activity. When I asked him why, he stated, “Cause pirates use compasses and I like pirates.” (Interview 1, February 12, 2007). His affinity for pirates engaged Jack in his learning situation during both of these instances.

Jack also has a passion for creating things, either through performing, writing or art. During Interview 1 (February 12, 2007, Question 1), Jack said that his favorite hobbies or activities are “trying stuff and making things.” From prior knowledge, I know that Jack has participated in several plays and performances in town. He loves talking about his roles, and

performing for others. Just this year, Jack has become very interested in creative writing. After Interview 1 (February 12, 2007), he came back in to tell me the favorite thing that he does in school. He said “The favorite thing that I do, is to make our sled dogs in literacy and our Balto stories. We made a little story and repeated it. We like writted these stories about Balto.” This activity took place during literacy time, but stemmed from a study we did on Dog Sledding during our Theme Time. For a student who was not interested in engaged during literacy, this creative writing piece shifted his thought. This project really resonated with Jack and since then, he as embraced creative writing and literacy time as a whole. He is often found adding to books that he has created at home and he is proud to show his work to his teachers. Generally, these books are about things that he is passionate about, some correlate to what we are learning in school.

Although I did not include creative writing projects in any of my observations, students were asked to complement their constellation activity (Observation 5, February 15, 2007) with a piece of creative writing. Jack embraced this and created a thoughtful story about his pirate’s hat. This information is important to understand because it was either the creative writing about or the artistic creation of the Pirate’s Hat Constellation that helped him retain information about the hat. In Interview 2 (March 7, 2007, Question 2), Jack was able to recall what a constellation was. I asked him, “What was something that he learned about during our Journey.” He answered, “About the night sky. There are different stars and it makes Orion and all those things.” When I asked him what those things were he said, “Constellations.” If Jack had been disinterested in this topic, and had no way to connect to it via an affinity, he would not be able to engage in what was being taught. Hence he would have not retained any information about the topic.

I assumed that Jack would love to act out things and since this was an interest of his, I applied this assumption to the Moon Phase Lesson, (Observation 4, February 14, 2007) and chose Jack to help demonstrate how the moon revolved around the earth. I assumed that by including him in this demonstration and encouraging him to perform, it would help him to remember the concept being taught. During Interview 2 (March 7, 2007, Question 3), I asked him “What do you remember learning from our Moon Phase Project?” He remembered, “That moons aren’t always the same.” But he could not remember why it changed. This demonstration was meant to encourage understanding of this topic, but it obviously did not. Although Jack does have a connection to performing, I now believe that it is more of a connection to the creative or affinity-based side of performing, not just the movement.

Jill

Even if Jill is participating and appears engaged, she may still have a difficult time recalling information from a lesson. At times she does not remember what was taught in a lesson and sometimes it is difficult for her to remember directions shortly after they are given. She seems to find success recalling information when it is presented in a way that is related to an affinity, and when she is able to express what she has just learned in an artistic manner. I discussed Jill’s engagement during the Moon Phase Project (Observation 4, February 14, 2007) under Assertion II. She appeared mostly engaged during the demonstration, however she was unable to answer a simple question about the demonstration after it was over. When asked about this lesson in Interview 2 (March 7, 2007, Question 3), She was unable to remember why the moon’s appearance changed from day to day, which was based on the demonstration. Yet she was able to recall three of the four phases of the moon that we focused on. “The moon can be a quarter moon, a half moon, a full moon and I think that is all, I think there are more,

but I forgot those.” By translating this discussion based knowledge into an art-based Moon Phase Calendar, Jill was able to retain this information about the moon.

Jill showed similar material retention from the Compass Rose Activity (Observation 2, January 30, 2007). During this activity, the teacher was giving directions of how to color in the compass and how to include the directions. She referred to the actual directions, and then this was later revisited during the Orientation Activity (Observation 2, January 30, 2007). Jill listened closely and added the directions and colors carefully. She was then able to finish coloring in the compass role in her own way. During the Orientation Activity, Jill was given a compass and could apply the information that she just learned, by finding the four directions. She also was required to help Jenny find the directions. They succeeded in finding North and with a little faculty help they found South. During Interview 1 (February 12, 2007, Question 7) Jill revealed that Navigation was the most exciting thing that she had learned about during Theme Time. She explained that it was because, “We got to use compasses and we got to learn North, South East and West.” She pointed to the correlating directions as she said them. When I asked her “Which activity that we did with compasses did you like best?” She claimed, “When we got to make the compass roses.” Since she did not orient herself to East or West, I assume that she retained what she learned about directions through the Compass Rose Art Activity.

Jenny

Jenny seems to become better engaged and retain information when a curriculum involves an art project or a direct connection to an affinity. In Assertion II, I gave examples of how Jenny engaged well during Art Lessons. In this section I would like to introduce you to some of Jenny’s affinities, as they relate to school, and to how they encourage her retention of information. I spoke of the Moon Phase Project (Observation 4, February 14, 2007) during

Jenny's section under Assertion II. Her engagement during the art section of this project was outstanding. I was curious to see if she had retained information that was taught during that day. The art project was focused on documenting the different types of moons that appear throughout the month, while the demonstration done earlier in the class period focused on the rotation of the earth and moon, and how that affected the earth's appearance. While answering question 3 during Interview 2 (March 7, 2007), Jenny remembered that the moon changes from a black moon a half moon and a whole moon. Although these were not the exact terms used for those moons during the lesson, she remembered three of the four types that we had discussed. When I asked her, "Do you remember why it changes its appearance everyday?" She answered that she did not know. From this evidence I gather that she gained more understanding from the art project then from the demonstration and discussion.

An Affinity of Jenny's that she connects with her school work is her Family. Jenny has a very tight family unit. They spend a ton of time together, and she talks about them often. During Interview 1 (February 12, 2007, Question 1) I asked Jenny what her favorite hobbies or activities were. She said "Being with my family." I saw Jenny connect back to her family during the Constellation Project (February 15, 2007), in which she was highly engaged. She created a constellation of a ballerina. She took great care and was very focused. Later, during the second interview (March 7, 2007, Question 4) Jenny revealed that the ballerina that she created was for her sister. She said "Yeah, I don't like ballerinas, but my sister does and this is for her." Her focus during that activity was outstanding; she was focused on it as a present for her sister. Her answer to Question 10, in that same interview, concluded that she would like teachers to teach that lesson over. When I asked why, she was unable to tell me, but she obviously felt connected to that project, perhaps because it was an art project, which she enjoys, that allowed her to connect the curriculum to one of her family members.

Unexpected Discoveries

Assertion VI.

Some students can be over engaged mentally on one topic either to the point that it creates a barrier for them to continue taking in new information that is being presented or becomes a new affinity. This can mean a weakness in their Attention Processing Control and can be overcome consistently checking in, redirecting and encouraging that student to reengage through other strategies that work for that student.

As I stated under Assertion III, a student with a weakness in Attention Processing has a difficult time regulating incoming information. (Schools Attuned, May 20, 2007) Some students have a hard time sorting information and storing it in the correct place in their brain so that they can access it, as I discussed above. Others have a hard time processing it so that they can move on the next item of information so that they can move on the deal with the next tidbit of information. This is what seems to happen to Jack.

Jack

As I mentioned above, Jack is a very passionate person. He becomes over engaged in information that resonates with him His creativity makes him latch on to things and really think about them. Jack is a unique example of how his weakness in Attention Production Control can cause a student to become super engaged on one piece of information, to the point they get stuck on that piece of information and can't focus on the additional information that is being presented.

It is obvious to tell when Lucas has become focused on a piece of information that was presented to him, or at thought that he conjured up on his own, because he will often talk about it, or appear as though he is creating a story in his head. For example, during the Navigation

Lesson Read Aloud (Observation 3, February 6, 2007) Lucas was focused on the book. He was laying down in front and watching the book from phase to phase. Every so often he would changes his facial expression and become deep in thought, mouthing words to himself. During these moments, it seemed as though he was really exploring a concept that was just presented in the book, it would take a page or two, to relax his expression and go back to watching the book.

Earlier in Assertion 1, I mentioned a situation about Jack during the Orientation Lesson (Observation 2, January 30, 2007) when he was laying on the ground looking up at the sky during directions. The teacher was giving an intro about how they were lost in the woods and they would have to find their way with a compass. She looked at jack and said, “How will you find your way?” He answered with a drawn out , “What?” He said this in a manner that made me feel as though his mind was somewhere else. When asked again, he went into this long round about story that ended with, “I will follow my tracks back. Yeah, that’s what I am talking about.” Now, during Assertion 1, I proclaimed that potentially this could have been about social reasons, Jack does like to be in the spotlight, and I am sure that that has something to do with it. However, it did seem as though Jack was thinking about something else when the question was asked. When he answered the question, he had to bring himself back into the moment at hand. The story being told before his relevant answer, was definitely could have been connected to whatever thought it was that he had become engaged in minutes before.

This is a very interesting scenario because Jacks passions can not only be used to encourage his learning, but they can also put a barrier on his ability to take in all the information at hand. In order to assist Jack through this, I discovered that by checking in with him, when he obviously is thinking about something else, brings him back to the subject at hand. This scenario can look very different from situation to situation. During the Moon Phase

Activity (Observation 4, February 14, 2007), as I finished my directions and displayed the sample Moon Phase Calendars, Jack shouted out “Can we start?” He was very excited about creating his own. This brought to my attention, that his mind was rolling with an idea and so I stopped talking and let the students begin. His product was beautiful and he even took it to the next level by additional moon phases. If I had continued with my directions, I would imagine that he would have missed most of them because his mind would have been developing whatever it was that he so eagerly needed to put on paper. By recognizing his passions and impulsiveness, it is possible to channel Jack’s energy in a manner that helps him learn and careful products.

Assertion VII: A student who has a weakness in his/her Attention Production Control, may find that he/she has a difficult time sitting down during read alouds, stories or verbal instruction. However, despite their apparent disengagement, they are still retaining and learning about what is being presented.

I did not expect to develop this assertion. This is a very interesting aspect of disengagement. Even if a student appears disengaged and unfocused, some students are actually fully focused and retaining information.

Jenny

Jenny is a very interesting student. She is very movement oriented and during read alouds, stories or verbal instruction she is often seen walking around, turning around, fiddling with things, and looking away. She does however, often check back in by looking over, or sitting back down. A perfect example is from Observation 3 (Space Navigation, February 6, 2007) when a large group of students were expected to listen to a long read aloud about place

and space. If you recall from Assertion II, I explained her behavior as walking around, fiddling with notebooks, moving her pillow, leaving to get her water bottle and watching her peers. She would check back in on a regular basis, reseating herself, or just looking over. From prior knowledge, I can say that this is common behavior during read alouds, however usually she is checking back in. This is important to understand as I go on to discuss the following data.

Through out the interviews Jenny referenced stories several times. During Interview 2, (March 7, 2007, Question 1) Jenny claimed that her favorite memory from the Journey was when one of her teachers told a story. In Question 4, (Interview 2, March 7, 2007) I asked “What do you remember learning during the constellation project?” She stated “Remember that guy came in and told us about the constellations? He put the blanket up and the hummingbird started poking holes in it.” Jenny was refereeing to a constellation story that was told during an additional lesson that I did not include in my observational data. She then went on to discuss her own constellation. When I asked her about what she had created she said, “A ballerina. I could have made a scorpion.” I said, “Where did you learn about the scorpion?” She couldn’t remember, however it was information that was presented in another constellation story that was told. In Question 7, (Interview 2, March 7, 2007) I asked, “In which [activity] did you learn the most?” Jenny stated “The constellation activity, cause we remembered all the stuff before the people were not there. Like the kid that went around shooting all the animals.” Again this information was presented in a constellation story. She retained many of the topics that were presented in the constellation stories and she was well aware that she had listened well during the stories. In question 8, (Interview 2, March 7, 2007) I asked “During which of these activities do you think you had the easiest time paying attention?” She claimed “The constellations, because I listened to the teachers.” She did indeed listen to the teacher and retained the story lines, despite her tendency to move around during stories and read alouds.

To make this even more interesting, Jenny confessed in Interview 1 (February 12, 2007, Question 3) that she has a difficult time staying awake during stories. I asked, “When is it the hardest for you to try and stay awake? During which subjects?” She responded, “Um, to stay awake at like during stories.” I then inquired, “Why do you think it is so hard to stay awake during that time?” She said “It is just really tiring.” I asked, “Is it because we aren’t moving and we are just sitting?” Jenny responded “Yes.” It was when I reread this sequence of questioning that I realized that perhaps Jenny’s movement during stories and read aloud, are necessarily a sign of disengagement, but instead a strategy that she imposes to help her stay awake. I don’t believe that this strategy is consciously used, however I do think that she realizes how tired she gets, yet I have never seen her fall asleep or closer her eyes because she is usually moving around. For Jenny, this is a tool that she administers to help her stay engaged.

This discovery really made me realize that as teachers we can not assume anything about our students. I will discuss this further as I enter the value section of this project.

Value

My expectation for this research project was to discover successful methods to engage three of my students who are often disengaged. That expectation was greatly exceeded. Looking back on this experience I realize that I have learned so much more about my students, my teaching team, and myself as a teacher than I had ever expected. I stumbled upon many unexpected discoveries that both gave me pride in being a teacher, and made me question my techniques and assumptions as a teacher. Within this section, I will discuss my discoveries in three different sections: Personal Value, Student Value, The Journeys School Value, and Value to other Educators.

Personal Value

As an educator I find self fulfillment in bringing awareness to students and guiding them through new discoveries. It is easy for me to idealize my job and to paint a beautiful picture of my ability to influence young minds and help them blossom into individual thinkers and explorers. However, I realize that much of my teaching career is filled with frustration. This frustration often stems from working with students who have a hard time staying on-task or engaged during a lesson.

Coming into this project I had chosen three students because of their tendency to be off-task throughout the day. I knew each of these students from years before and had selected them with an assumption of their learning styles and needs. As I explored each of these students neurodevelopmental profiles, through the Attachment Process, I continued to accept and deny the presented information depending on my assumptions and prior experience with each student. Having the opportunity to observe and interview each of these student's, broke down many of my assumptions. For example, I had taught Jill two years earlier as a Kindergartener. At that time, she had a very difficult time paying attention during verbal instruction. She would often talk to a friend, or look around, and was unable to follow directions after they were given, because her thoughts had been somewhere else. As a 2nd grader, she made huge steps in her maturity and development. At this point, her learning profile seems to have changed. She rarely struggles with paying attention and following directions at this point. I now realize that despite my prior knowledge of a student, I can not assume I know students learning needs from year to year. They are growing developing beings, and their knowledge and maturity can change in just a few months.

Jill taught me a great lesson in the inaccuracy of assumptions during this research project. Jill's Profile of Engagement described her as being disengaged during verbal instruction and read aloud time. I assumed that she was disengagement because she was

moving around, looking away and fiddling with things. Through this research I discovered that her movement actually was a stimulus to stay engaged. Jill explained to me that she often felt tired during read aloud time and felt as though she was going to fall asleep. Her movement was a way for her to enhance her mental energy. Much of her retention of information seemed to stem from the story times, the times that I was assuming she was disengaged and not listening. It is amazing how we as teachers can think that we know what is best for our students. We encourage them to sit down and “listen”. However, we can not assume that a method that works for one student is going to work for another student.

As a teacher, I also made assumptions about myself. I assumed that I was differentiating my curriculum in an effective manner. I realize that indeed I was differentiating my curriculum; however I was doing it in a way that was not necessarily meeting the needs of those students who were having issues with being disengaged. Differentiation is a way to reach out to as many learning styles as possible, but if you still aren't reaching the students who are disengaged, then the differentiation needs to be more specified. The reality of it is that if I truly want to teach a differentiated curriculum I need to be aware of how it is affecting my students. I need to be constantly checking in with my students to see if I am losing anyone. It is impossible as a teacher to have a successfully differentiated curriculum if I am thinking of my students as a mass, instead of individuals.

The most valuable aspect of this project for me is the learning about how to view my students as individuals. It has given me tools for learning specifics about how each of my students learns and what they need to be successful. I feel as though it has opened a door for me to find empathy in each of my students situations, and they ability to teach them about how they learn and becoming aware of what they may need to become a successful student. I feel as

though I have become a totally different teaching, with a willingness to take the time to work with students as individuals instead of addressing a class as a whole.

Student Value

By questioning and observing my students, I was able to discover their true needs, instead of those that I assumed for them. With this knowledge, I was able to discuss learning with my students, and encourage them to become aware of their own needs as a learner.

Although my student's age and development level inhibited me from encouraging them to think critically about their learning, I was able to help them identify strengths within their learning. I realized how important it is to have students take ownership over how they learn, and what interests them. By bringing awareness to this, students can be more involved and confident as they grow as a student.

Although I only worked with three students during this project, I feel as though it gave me insight into the learning styles of other students as well. I began to see trends in student learning, and am now able to identify other student's learning characteristics through informal observation on a daily basis. These observations allow me as a teacher to then implement specified teaching techniques, that had relevant success during my research project, to reach out to other students with similar learning characteristics. This awareness creates a more open, empathetic and productive learning environment for my other students.

Value for the Journeys School

When I designed this project I expected there to be a very obvious difference between the initial student observations and the secondary observations. The initial observations were of students during Theme-based lessons that were developed by two of my co-teachers. The

secondary observations were of students during lessons that I designed that incorporated specific strategies to better engage the case study students. What I found was that my team teachers were designing curriculum that was very highly differentiated and very well planned out. Many of the strategies that I had included in the Jack, Jill and Jenny's management plans were already being implemented by my team members and me.

This research project encouraged me to spend time observing my team members while teaching, and watching the affect that their teaching strategies had on the students. I was amazed at the talent of my co-teachers and the amount that I learned as a teacher, just watching them. I feel as though this is practice of team teaching and team member observation is a truly valuable process. The Journeys School has been working on establishing a school wide observation schedule, so that teachers can spend one day a year observing among the different levels. I realize that this should not just be a school wide effort, but should also be encouraged on a team level. It was inspiring to see my co-teachers in action, and it gave me great pride to be a part of such a talented team, and progressive school.

In addition, I realized how valuable action research can be in to a teacher's practice. I became more aware of my own practice and the affect that I could have on my students as individuals. It made me more aware of my lesson plans and techniques, and made me more empathetic to my individual students needs. This spring the Journeys School received a federal grant to encourage action research projects among it's teachers. This grant was applied for this winter, and I had the opportunity to discuss my research project with the woman writing the grant proposal. I was ecstatic to hear about the potential opportunity and have now realized through this process the affect of completing an action research project. By promoting action research at a faculty wide level, the school will gain teachers who are more aware of their actions, and more connected to their students.

Value for Other Educators

I conducted this project in a unique setting. The Journeys School is a small, private school that is rooted in a place-based and multiage curriculum. Although we do follow state and national standards, we often have more flexibility as teachers to design our own curriculum. In addition, we teach in a team environment, so our student to teacher ratio is lower than some schools. Because of this, I believe that differentiating my classroom was a logical endeavor. For teachers who work in a school setting where there is a higher teacher to student ratio differentiation may be an overwhelming concept.

Every teacher's situation is different; and usually teachers find that there are not enough hours in the day to finish all of their planning, grading, etc. Although my situation is unique, I do feel this Action Research Project gives applicable information to all teachers. The main value that I would like to highlight is that it is possible to assist those students who seem regularly off-task or disengaged. Every teacher deals with students who regularly "misbehave" or "don't listen". Ultimately, I now realize, that all students want to be successful in learning, it is just taking the time to realize what they need in order to be successful. It may be just presenting information in a different way, or encouraging projects that depend upon their strengths or affinities. By being empathetic to these students, and taking the time to decipher their learning style and needs, as teacher has the opportunity to create a more productive environment for the student, and the overall class. In addition, it will answer many questions about the student and decrease the level of frustration, if there was any, for the teacher.

All in all, this project gave me a new found understanding of how I can encourage and support my students. In addition, it gave me the tools to recognize different learning styles, and the strategies to address different student's needs. I feel as though I have become more aware in

my ability to affect, support and inspire students. I have become more proud of my role as an educator.

APPENDIX A

Literature Cited

Literature Cited

Schools Attuned Program Overview (n.d). Retrieved December 10, 2006 from

http://www.allkindsofminds.org/sa/schoolsAttuned_ProgramFeatures.aspx

Schools Attuned Program (n.d). Retrieved May 20, 2007 from

<http://www.schoolsattuned.org/Educators/EdExt/exploreneuroframework.aspx#attention>

Schools Attuned Online Teachers View Key (n.d.) Retrieved May 20, 2007

http://www.schoolsattuned.org/saonline/content/teachersview/standard_listing.aspx

Howard Gardner, Multiple Intelligences and Education. Retrieved May 15, 2007 from

<http://www.infed.org/thinkers/gardner.htm>

Bloom, Benjamin. (1984). Taxonomy of Educational Objectives. Boston, MA : Allyn and Bacon.

Carrol, Anne Welch. (1975). Personalizing Education in the Classroom. Denver: Love Publishing.

Cotton, Kathleen. (May 1998). “Classroom Questioning.” Northwest Regional Educational Laboratory. Retrieved Oct. 21, 2005 from <http://eric.ed.gov>.

Gardner, Howard. (1983). Frames of Mind: The Theory of Multiple Intelligences. New York, NY: Basic Books.

Gardner, Howard. (1999) Intelligence Reframed: Multiple Intelligences for the 21st Century.
New York, NY: Basic Books.

Heacox Ed. D., Diane. (2002) Differentiating Instruction in the Regular Classroom.
Free Spirit Publishing Inc.

Hug, J. William. Qualitative Text-based Data Analysis Procedure. Montana State University.
Retrieved May 5, 2007 from

<http://www.montana.edu/billhug/teaching/ARreportoutline.php#dataanalysis>

Keefe, James W. and John M. Jenkins, (2000) Personalized Instruction: Changing Classroom Practice. Eye on Education, Inc.

Levine M.D., Mel. (2002) A Mind at a Time. New York, NY: Simon & Schuster.

Mills, Geoffrey E. (2003) Action Research: A Guide for the Teacher Researcher. Upper Saddle River New Jersey: Pearson Education, Inc.

McNiff, Jean, Lomax, Pamela, Whitehead, Jack. (2004) You and Your Action Research Project. London: RoutledgeFalmer.

Ramsey, I., Gabbard, C., Clawson, K., Lee, L. and Henson, K. (1990) *Questioning: An Effective Teaching Method.* The Clearing House. 63 (9). 420-422.

Scherer, Marge. (September, 2006) Celebrate Strengths, Nurture Affinities. *Educational Leadership*. Vol. 64 NO.1, 8-15

The Schools Attuned Program. (2000) Management Resources Manual. Chapel Hill, NC: All Kinds of Minds.

Tomlinson, Carol Ann and Jarvis, Jane. (September, 2006) Teaching Beyond the Book. *Educational Leadership*. Vol. 64 NO.1, 16-21

Tomlinson, Carol Ann (Retrieved May 15, 2007) Differentiation of Instruction in the Elementary Grades. *ERIC Digest*. <http://www.ericdigests.org/2001-2/elementary.html>

Supon, Viola and Wolf, Pat. (July, 1994) “*Eight Questions Frequently Asked about Questioning*.” Retrieved October 21, 2005 from <http://eric.ed.gov>

Tomlinson, Carol Ann. (2001) How to Differentiate Instruction in Mixed Ability Classrooms. Association for Supervision and Curriculum Development.

Woolfold, A.E. and McCune-Nicolich. (1984). Educational Psychology for Teachers. 2nd ed. Englewood Cluffs, N.J.: Prentice-Hall

Washburne, C.W. & Marland, S.P. (1963). Winnetka: The History and significance of an educational experiment. Englewood Cliffs, NJ: Prentice-Hall.

APPENDIX B

Attunement Questionnaires
As developed by
The All Kinds of Minds Institute

APPENDIX C

Student Management Plans

APPENDIX D

Theme-Based Essential Questions

APPENDIX E

Lesson Plans of Observed Lessons

Appendix F

Interview Formats

Interview 1 Format:

Hi _____, Thank you for meeting with me. The reason I called you in here is because I am interested in learning about how you like to learn. As a teacher, I want to know what kind of things I can do or that we can do in class that will help you learn.

(In my actual research interviews I will include an intro that reminds students of the work we have been doing to learn about how they learn. Each of the students will have answered questionnaires during the attunement process, so they will understand why I am interviewing them.)

1. What are your favorite hobbies or activities? What do you enjoy doing at home?

(warm up question)

2. What is your favorite thing to do in school?

(warm up question)

3. What is it in school that is the most challenging for you?

Why?

PROBE: Has it always been this way for you?

4. Not including Recess or Lunch, what is your favorite subject in school?

Why?

PROBE: What subject do you think you learn the most from, and Why?

5. During what subject do you have the easiest time paying attention?

When are you the most Alert?

(we recently had a lesson on being alert, so that the students could be aware of their level of mental energy.)

6. During our science class this year, what activities have you enjoyed the most?

7. What is the most exciting thing that you have learned about in science this year?

Probe: Why do you think this is the most exciting thing?

Why do you think you remembered this thing so well?

8. Is there anything that you wish your teachers could do more of to help you learn?

Probe: If I asked you the number one thing I might do to help you learn, what might that be?

Thank you for taking the time to answer these questions.

Interview 2 Format

Hi _____,

Thanks for meeting with me. So I just wanted to ask you about the Journey that we took before Feb. Break. Do you remember what activities we did over the Journey?

1. Moon Phase lesson :

In the classroom- creation of the moon orbit, and why it looks different throughout the month. Demonstration with a basketball, and a lamp, and a student being the earth.

Then creation of the moon phase calendar.

2. Creating Personal Constellations:

This to consider – Had prior knowledge of constellations, and revisited constellations later in the day. Students were asked to create a constellation of their own choice. It had to be something that had meaning to them. On Black construction paper they were asked to put stars (stickers) and then connect the stars with glue, and then glitter. They splatter painted the back ground with gold and silver paints.

3. Scavenger Hunt- In town, constantly moving, less structure, more distractions.

1. What is your favorite memory from the journey?
2. What was something that you learned during the journey?
3. What do you remember learning when during our Moon Calendar project?
4. What do you remember learning during the constellation project?
5. What do you remember learning about the Scavenger hunt?
6. Which of these activities did you like the best? Why?
7. In which one did you think that you learned the most?
8. During which of these activities do you think you had the easiest time paying attention? (When were you most interested?)Why?
9. During which of these activities do you think you had the hardest time paying attention (bored?)Why?
10. I you could tell us to teach one of these lessons over which would it be? Why?

Appendix G

Schools Attuned Consolidation Form Sample