

ORIGINAL MINDS



DISCUSSION GUIDE

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INTRODUCTION

DISCUSSION IN THE MEDIA about learning disabilities features educators, authors, and educational specialists talking about symptoms and treatments for an array of “disorders” that are used to classify what is wrong with you or your child. Attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD), dyslexia, nonverbal learning disorder, auditory processing disorder, dyscalculia and dysgraphia are just a few. These diagnostic labels are useful when it comes to securing special accommodations, tutoring, and other facilities for children who need them. They are also a double-edged sword. Labels can stigmatize children, and well-meaning adults can sometimes focus on the diagnosis at the expense of the child. “My child has ADHD” can easily become a mantra that is used to explain, excuse, or dismiss all unwanted or unfocused behavior without looking into the wide range of factors that can contribute to it. A diagnosis can be comforting, but it is also limiting.

ORIGINAL MINDS was conceived as an antidote to our national obsession with diagnosis. I did not want to make another film featuring expert talking heads and illustrated by video clips of little Jane or John acting out in the classroom as “Exhibit A” and “Exhibit B.” I wanted to avoid the way the media tends to dehumanize its subjects in the service of providing “useful information.” Accordingly I chose a format in which the subjects, in this case five high school students, are the experts. In the film Kerrigan, Nattie, Marshall, DeAndré, and Nee Nee work very hard to understand how they learn and then articulate to you, the viewer, how their brains work, and what they perceive their strengths and weaknesses are when it comes to learning. Parents, teachers, and therapists appear as a supporting cast of characters.

Our framework for working together was simple but labor intensive. Two San Francisco Bay Area schools, one public, Berkeley High School, and one private, the Bayhill School in Oakland, agreed to let me teach a special semester-long class called “Ways of Learning,” in which students would earn an elective work-study credit. The course requirements were that students had to attend a three-hour class, off campus, every week, complete video diary homework assignments, and tolerate my crew and me as we filmed them in their daily lives, at school and at home. The first three weeks of the class were all about learning how to use the small, high-definition video camera and outboard microphone that was given to each student for the semester. The next 16 weeks were about learning the art of *metacognition*. Metacognition is just a fancy word that means thinking about how your mind works.

For our work we needed a common vocabulary or model that we could use for expressing to each other, and ultimately to the viewer, how we experienced the learning process. I chose a model developed by Dr. Mel Levine and laid out in his book, *A Mind at a Time* (Simon & Schuster, 2002), because it studiously avoids categorizing what is normal or abnormal in describing to how people learn. In this model every person possesses a unique blend of learning strengths and weaknesses. Understanding what they are, and taking action based on this understanding, is the key to living a successful and fulfilling life.

Levine's model describes eight areas of brain function that must work together, like the instruments in an orchestra, to make learning possible. Here are broad descriptions of those eight areas.

ATTENTION

We can think of attention as the manager of the brain. As such it is involved in everything we do. Every task we can think of requires our attention. It keeps us focused. It allows us to be alert, to decide what's really important and what isn't and to filter out unwanted distractions. Attention enables us to slow down and think before we do something. As such it enables us to have good judgment and make good decisions.

SEQUENTIAL ORDERING

All day long we are barraged by sequences: bits of information that come in a particular order, where the order is absolutely crucial. Multi-step directions are a sequence. If you don't preserve the order of the steps, you won't arrive at the intended destination or result. Examples of such sequences include the days of the week, the months of the year, the steps involved in reducing a fraction or balancing an equation, or the events leading up to World War II. The most important sequence of all is time. Managing your time, knowing how long it will take to do something and planning accordingly all require sequential ordering.

SPATIAL ORDERING

In many ways spatial ordering is the opposite of sequential ordering, because all the information comes into your mind at the same time. When you are engaged in spatial ordering you are taking in the features of a face, a scene, a map, or a painting. You are creating a snapshot in your mind of what you see. Spatial ordering involves spatial relationships, like the relative position of the nose to the eyes on a face, symmetry versus asymmetry, left versus right, foreground versus background. People who are good at spatial ordering are good at finding their way and navigating in space. They may excel as artists, graphic designers, mechanics, carpenters, or in any trade or profession in which perceiving how things fit together, the physical relationship of things in space, is important.

MEMORY

Memory is divided into three areas. The first is short-term memory, which is your mind's ability to grasp information that it has just been exposed to. It only lasts a moment, during which you stabilize it and decide what to do with the information; forget it, use it, or send it to long-term memory. The second component of memory is active working memory. This is your ability to hold several different things in your mind at once while you're using them; so you don't lose track of one part of something while you're engaged with some other part of it. For example, active working memory allows you to stop and figure out where to put a comma in a sentence without forgetting how to spell the next word. You might think of active working memory as the computer desktop of your mind, the place where you keep information that you are currently working with. Finally there is long-term memory,

a repository where you store information so that it can be retrieved later. It is possible to have really good long-term memory and be weak in active working memory or vice versa.

Memory plays a big role in the learning process during the school years, and a lot of accommodations for students with learning differences involve strategies and exercises to strengthen or reinforce it. It is worth noting that many professional careers make far fewer demands on the memory than getting through high school does.

LANGUAGE

You can be very good with certain aspects of language and not so good with others, so some distinctions are helpful. Expressive language is your ability to put your own thoughts into language when you speak or write. Receptive language is your ability to interpret what you read or hear. One person can be much better at understanding than at talking or writing, or the reverse. Some other components of language include the ability to recognize and reproduce the 44 sounds that make up the English language, and semantics, which involves your grasp of word meanings, sentence structure, and grammar. For parents and teachers working with students who have difficulty with language, it is important to identify which components of language the student needs help with.

NEUROMOTOR FUNCTIONS

Neuromotor is the word used to describe connections between your brain and different muscle systems in your body. As with language and memory, neuromotor functions break down into sub-categories. Gross motor function engages your large muscles, most conspicuously needed to play sports. Fine motor function mostly concerns your hands, or manual dexterity. Finally there is another function, known as graphomotor function, which specifically describes the fingers' ability to form letters with a writing implement. Interestingly, it is possible for someone to be very good at drawing (fine motor function) and yet have difficulty writing (graphomotor function).

SOCIAL COGNITION

Social cognition refers to the brain functions that we need to relate well to other people, in other words, our "people skills". These functions include the ability to communicate verbally in social settings and the ability to read and respond to nonverbal social cues, such as body language and facial expressions. Finally there is what might be described as political skill, or the ability to adapt to different social groups and situations. For example, teenagers interact very differently with their peers than with adults in a position of authority. Sometimes this is referred to as "code switching," and it's a natural social adaptation.

HIGHER-ORDER COGNITION

Higher-order cognition covers a lot of ground. It includes abstract thinking, the ability to conceptualize, evaluate, solve problems, and make creative linkages and analogies between different topics and ideas. Higher-order cognition allows you to grasp and express a concept such as "liberalism" or "conservatism" or the concept of place value in math. Concepts

are a way of grouping together a whole host of phenomena in your mind. For example you could say that “furniture” is a concept because it covers a whole range of different but related things. A more abstract concept would be the idea of “due process” or “democracy.” Concepts are vital to learning because they provide the learner with a shortcut for comprehending a whole range of experiences or phenomena.

Higher-order cognition also includes critical or evaluative thinking. This means being able to judge the relative value, usefulness, or other characteristics of people, objects, ideas, and opportunities.

Creativity falls largely within the realm of higher-order cognition. It involves the ability to create and express a mental representation of something and translate it into something tangible like an image, a dance, a poem, or a painting.

Working with the Metacognition Model

MUCH OF THE TIME WE SPENT in the “Ways of Learning” class was devoted to talking about and formulating examples of the eight neurodevelopmental constructs previously described. How did we perceive our own strengths and weaknesses in these areas?

At the beginning of the film and throughout the program, you see the students interviewing each other. Nattie reads to Nee Nee: “It is hard for me to understand what I read.” Nee Nee chooses one of the following five multiple-choice answers.

- A. Very often
- B. A lot of the time
- C. Sometimes
- D. Hardly ever
- E. Never.

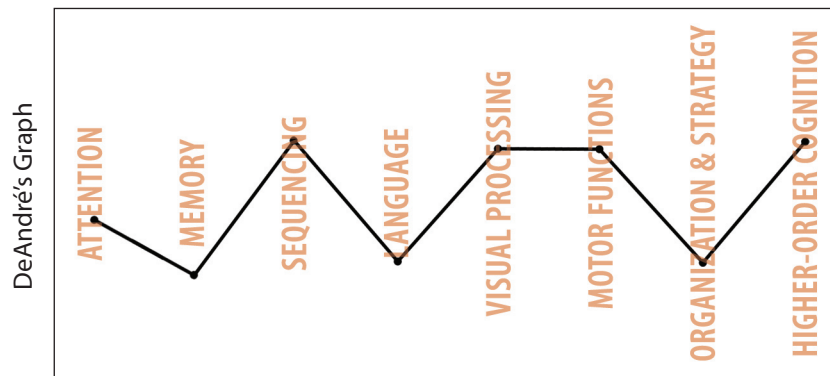
She responds with “C. Sometimes.”

The question is one of twenty about language. Altogether there are 128 questions that the students ask each other. They roughly cover the eight neurodevelopmental constructs, and they provide a tool with which students can assess strengths and weaknesses in their own learning processes.*

For example: Kerrigan reads to Marshall: “I have trouble remembering where I left things.” Marshall answers, “A. Very true.” His answer indicates that he has difficulty with long-term memory.

Nattie reads to DeAndré: “I can listen well in school without moving around and fidgeting.” DeAndré answers: “E. Never true.” His answer indicates that he has a problem with attention.

Later in the film Nee Nee reads to Deandré: “I can write a new song.” He replies, “A. Very easily.” This indicates a strength in the area of creative, higher-order cognition.



* This interview, developed by the Clinical Center for the Study of Development and Learning at the University of North Carolina School of Medicine, is called the STRANDS survey, or Survey of Teenage Readiness and Neurodevelopmental Status.

The end result of taking the STRANDS questionnaire is a simple bar graph, which shows the areas of neurodevelopmental strengths and weaknesses of the person responding to the questions.

This questionnaire is only a rough tool. The respondent could over-emphasize negatives or positives, especially if he or she feels the questionnaire is a test that will result in some form of judgment. But the students in *ORIGINAL MINDS* felt empowered by being able to put the questions to each other and ultimately assess themselves, rather than be subjected to diagnostic tests administered by adult professionals. Some even commented to me that they enrolled in the program in order to “set the record straight” vis-à-vis the battery of tests and diagnoses they had experienced during their years in special education. It didn’t matter that what they discovered about themselves often confirmed the assessments of their therapists, teachers, and parents. For once, they were consciously engaged in their own growth and self-knowledge.

The remainder of this guide is divided into five chapters, one for each person in the film. Each chapter starts with a narrative profile of the student. What made them to want to participate? How did they feel about having a learning difference? What did they learn about *how* they learn, based not only on STRANDS, but on the weeks we worked together? What strategies did we identify to help them achieve at school as well as in the wider world?

The issues that Kerrigan, Nattie, Marshall, DeAndré, and Nee Nee deal with will be familiar to many students and parents, and we hope that the hard work they put into getting to know themselves better can be an inspiration to others. It is important to keep in mind that these five protagonists are not personifications of learning differences. They are simply five courageous individuals telling us something about their lives and about how they learn.

KERRIGAN



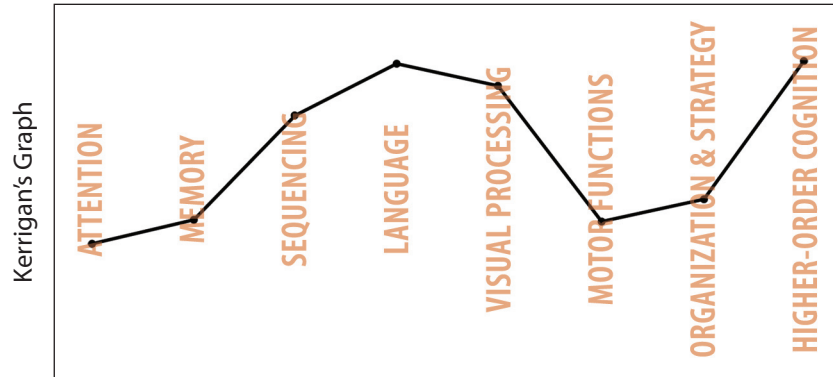
KERRIGAN told me he was miserable during the last years of middle school and his freshman year at high school. When I asked for details, he just gave a huge sigh and said: “You have no idea!” His teachers believed he simply wasn’t trying hard enough. After all, Kerrigan loved words (especially long, obscure ones) and he had a vocabulary that surpassed that of many college students. He was also a creative thinker, good with metaphors and concepts. But he had great difficulty finishing homework assignments or even remembering to turn them in, and he would often space out in his classes. In the film he says: “I would try to do something just as I was certain I was supposed to, and many times after doing that, everything would just fall apart. I feel like trying is just not useful when that happens.”

Kerrigan withdrew from school life, both academically and socially. He found solace in the dark lyrics and outrageous performances of the Goth rock star Marilyn Manson. He spent hours perfecting his skill at makeup, creating a Goth persona for himself. He says: “I did this to make myself look completely different from the person that I really was, so I could hide myself from people when I was like, really depressed about something.”

Fortunately both Kerrigan and his mother realized that he needed to get out of the school he was in and, by his sophomore year, he was enrolled in Bayhill, a new private school for students with unique approaches to learning. It was at Bayhill that I first met Kerrigan. He wore a suit and tie to his audition and chose his words very carefully. But I was struck by how open he was with me, a complete stranger, and how eager he was to explore his approach to learning.

This positive first impression wore off, however, when Kerrigan failed to show up at our class for two weeks in a row and my e-mails and phone calls to him went unanswered. I finally reached his mother and told her that I was dropping Kerrigan from the class. To my amazement he showed up at the next class and begged to be allowed to continue. It turned out he’d been out of town for a family gathering and had simply forgotten to tell me. I understood that this was part of his pattern: spacing out, not showing up, and having adults get angry with him. Showing up with headphones permanently glued to his ears and his eyes rimmed with black greasepaint only reinforced that impression.

The fact is that Kerrigan was absolutely true to his word when he said he was going to recommit to our project. He kept showing up. He still spaced out but, sometimes when I least expected it, he would come up with amazing analyses of something we had been reading or talking about.



The bar graph resulting from Kerrigan's answers in the STRANDS interview shows that he struggles with Attention, Memory, and Organizational Skills. But he's quite strong when it comes to Sequencing, Language, Visual Processing, and Higher-Order Cognition.

With an understanding of his particular strengths, Kerrigan was better able to find ways to cope with his weaknesses. He knows that he has a hard time paying attention in class. He has learned to use tricks to stay focused. Something physical, like drumming on his legs, can keep him present. His teachers came to accept his wearing of headphones, because for Kerrigan, music (perhaps because it segments and organizes time) actually helps him to focus. The same was true for doodling in his sketchbook. Of course doodling and headphones are not necessarily the cure for everyone who is having a hard time staying focused, but at Bayhill the teachers took enough time to learn about how Kerrigan's brain is wired to know that for him, they can be helpful.

One day when Kerrigan and I were talking, I asked him what his hardest daily task was. Without hesitation, he said it was getting up and getting to school on time. I asked him how he managed, and he described an elaborate ritual, which became the basis for a scene in the film. The ritual of packing his school bag the night before, keeping a cold cup of coffee by his bedside, getting up, choosing the right clothes, having breakfast, and checking to make sure he has everything before going out the door is actually a *sequence* of tasks that Kerrigan has trained himself to follow every day. One could say that Kerrigan is using his strength in sequencing to compensate for his weaknesses in attention and memory. It works.

Ariana Ward, Kerrigan's art teacher, says near the end of the film, "When you have a learning difference, it's so easy to be silenced." That seems to be what happened to Kerrigan before he had the good fortune to get into Bayhill. Like a square peg in a round hole, he didn't fit the standard expectations for academic achievement, despite the fact that he has an intelligent and creative mind. Failure to meet expectations led to low self-esteem. Kerrigan started going down an emotional black hole, his eyes receding behind heavier and heavier rings of greasepaint.

At Bayhill, Kerrigan's teachers noted and nurtured his creativity, which shows up on his STRANDS profile as very strong higher-order cognition. The confidence that Kerrigan gained from the appreciation of this side of him gave him the strength to push on in other areas. As the film was being completed, he graduated from Bayhill with high grades and was honored by being chosen as the student speaker at commencement ceremonies.

Discussion Questions

Do you or anyone you know have trouble paying attention? In what ways is this manifested? Are there particular situations where it is harder for you to stay focused than in others? What particular strategies or tricks could you use to help keep focused?

In the film Kerrigan uses a fixed sequence of actions, a ritual, to help him get to school on time every day. Come up with some other examples of sequences or narratives that might help you or other people to stay focused and on track.

Do you sometimes have difficulty remembering things? What strategies or coping mechanisms might be useful to help you remember?

Watch the deleted scenes of Kerrigan in the "Extras" section of the DVD. Do the additional clips change your perception of Kerrigan or the characteristics of his learning? If so, in what way?

NATTIE



THE FIRST THING YOU NOTICE ABOUT NATTIE is that she is quite small and that she walks with an uneven gait. The second thing you realize, after talking with her for just a few moments, is that this is a girl without an ounce of self-pity, despite her obvious physical disability, caused by Noonan Syndrome, which is also the cause of her learning differences.

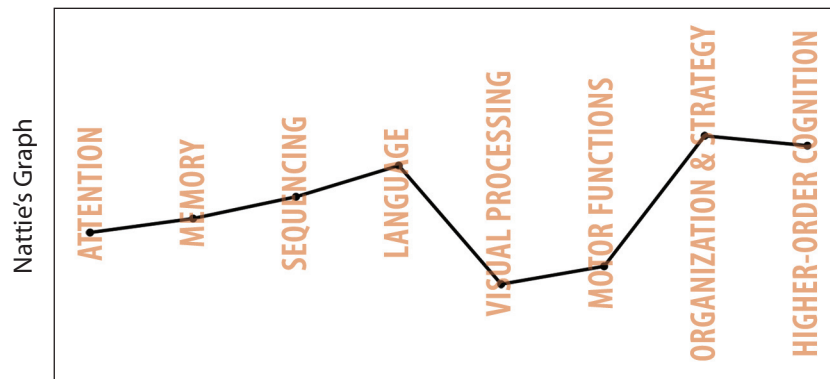
With the support of her parents, Nattie learned at an early age how to advocate for herself and, by extension, for anyone with a physical or learning disability. Her strong convictions led her to volunteer for our project. Almost the first thing she said the day that I met her, and the last thing that you hear her say in the film, was: “The first step that we need to go through as a human race is to realize that people who are in special education classes, kids with LDs (learning differences), are not stupid. They can be the best people in the world!”

As an advocate for herself Nattie is able to articulate the difficulties she encounters. The thing she struggles with the most is what some therapists call a nonverbal learning disability. This means that she has a hard time reading people’s faces and body language. In human interactions 80 percent of the information that we rely on to tell us how a person is feeling emotionally comes from visual cues, subtle and rapid changes in facial muscles, postures, and gestures. Most of us pick up on these cues instinctively, but for some people, like Nattie, they have to be laboriously identified and remembered, in the way you might study the grammar of a foreign language.

There’s a saying that faces never lie. That’s the premise of the TV murder mystery series “Lie to Me,” in which the protagonist, Dr. Cal Lightman, has an uncanny ability to see when someone is lying by observing the most minute “tells,” fleeting expressions or gestures that betray the words coming out of a person’s mouth. Lightman’s team usually doesn’t see what he sees because the giveaways are so subtle. It’s only when he records and freezes the image of a suspect at a critical moment that others can see it.

Educational therapists use video footage of people’s faces slowed way down so that expressions of annoyance, pleasure, anger, fear, frustration, or bewilderment can be clearly seen and identified. We did this in a scene in the film, as Nattie is describing her difficulty picking up visual cues.

Not being able to read people visually can cause a great deal of anxiety for those who suffer from it, especially in group settings. From an early age Nattie dealt with this problem by becoming the class clown. She'd act goofy, tell a joke, and kid around in awkward social situations. If other kids were laughing at her, at least she knew what they were laughing about. But this coping strategy only worked up to a point. Nattie wouldn't know when to stop, and she'd continue with her kidding and banter long after everyone got the joke and had finished laughing. Then they'd get annoyed with her. That's what happens in the film when one of Nattie's classmates, Dylan, says: "Nattie, stop! Respect other people!" Nattie doesn't mean to be disrespectful, she just hasn't picked up on the nonverbal visual cues.



We can see by looking at Nattie's STRANDS profile that, by her own assessment, she is weakest in visual processing, which makes sense, given the difficulty she has in reading faces. This weakness in visual processing is also manifested in other ways. For example, Nattie can easily get lost. Finding her way to a new address or location can be challenging for her. She also has what her teacher, Scott Defalco, calls "math phobia." Math, especially algebra and geometry, require an ability to visualize and organize numbers and equations in a kind of virtual space: in other words, it requires visual processing. It's not surprising that math presents one of Nattie's biggest academic challenges.

Fortunately Nattie is pretty strong in the areas of Language and Organization and Strategies, so she has learned, over time, to use these strengths to compensate for her weakness in visual processing. When she has to go to a new address in the city she uses maps and bus schedules to pre-plan her route (using her organizational skills) and she often talks through the different steps she needs to take to get to where she is going. In the film Nattie's father observes that Nattie can often be heard around the house speaking out loud to herself. She is not dotty, she's just using words as a tool to organize in her head what she needs to do. In the film we can see her doing the same thing while she is painting a landscape. Words are the tools she uses to form an image.

When it comes to math, the solution that Scott Defalco offers to Nattie is to break down a math problem into its component parts, digestible, bite-sized pieces or steps that can be negotiated one at a time. This is a form of sequencing, which Nattie is also pretty good at, and although she's never really come to love math, it makes it a lot less daunting.

Nattie is currently in her second year of college, living independently thousands of miles from her home. She is doing very well, largely because she addressed her challenges directly at a younger age and continues to do so.

Discussion Questions

Think of and describe ways in which people communicate nonverbally both intentionally and unintentionally. Are some types of cues easier to pick up on than others? What would it be like if you couldn't read this language?

Nattie discovered that talking to herself about what she was doing really helped. Do you know other people who do this? Give some examples. In what kind of situations do you find that talking things through is especially helpful?

Nattie's math teacher advocates breaking down complex math problems into small, manageable steps or components. What other kinds of tasks or problems, in school or in everyday life, could benefit from this approach?

Watch the deleted scenes of Nattie in the "Extras" section of the DVD. Do the additional clips change your perception of Nattie or of how she learns? If so, in what way?

MARSHALL



MARSHALL'S ENGLISH AND ALGEBRA TEACHERS described him as a good student. His coach told me that he was a considerate team member, always calling when he couldn't get to practice on time. I was curious as to why he would want to volunteer for a project that asked for students "who have difficulties learning or adapting to school and who want to share their experiences with others." Marshall was not a special education student and seemed to be doing fine in his senior year. Then he told me that there was a long period in grade school where both he and his parents feared he might never learn to read. He had been given batteries of tests, sent to therapists, prescribed drugs, and had tutors for most of his life. He told me he wanted to be a part of *ORIGINAL MINDS* to "set the record straight" and express in his own way what it is was like to have a learning disability. I accepted him on the spot.

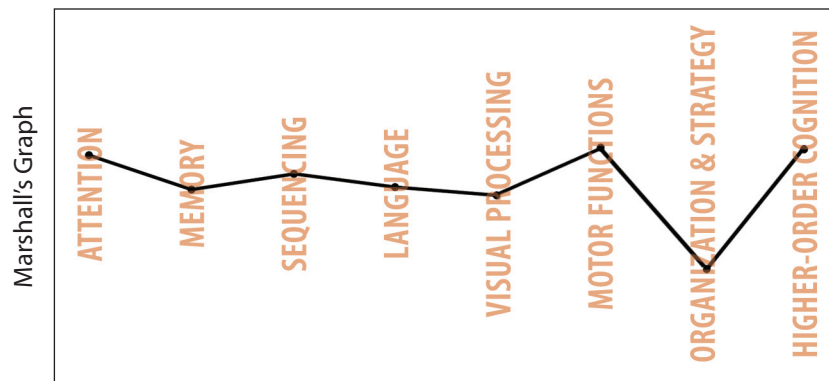
Later, with a flair for the dramatic, Marshall told me "the drugs turned me into a zombie, tutors are torturers, and sixth grade was a nuclear bomb." The last bit was confirmed by his parents, who recalled that in sixth grade Marshall did six hours of homework every night and barely made passing grades. Yet while he struggled with schoolwork, he was always gregarious and outgoing, excelled as a long-distance runner, and took lead roles in several school plays. He was (and is) an extremely empathetic person. In one of the first assignments in our class the students were asked to write a description of someone they knew well. Marshall chose DeAndré, who also appears in the film. His portrait of DeAndré was deeply insightful.

During his first years of high school many of Marshall's friends were in AP (Advanced Placement) classes, but Marshall increasingly felt inadequate in their company. They teased him about "not being the sharpest tool in the shed." He looked for peers who would be less likely to judge him and fell in with a crowd that, as he describes it, "did drugs and alcohol all the time and who despised academics." There were predictable consequences. Fortunately Marshall's parents never gave up on him. Perhaps because of this Marshall never completely gave up on himself, even though life looked pretty bleak during this period.

Slowly, painstakingly, he learned to read. It was determined that he was a "kinesthetic learner." A kinesthetic learner learns best in situations that include some kind of physical

action or activity. Doing lab experiments, making models and acting out scenarios work well for kinesthetic learners. Kinesthetic learners typically have good hand-eye coordination, so they perform well in interactive games and simulations. People with kinesthetic intelligence usually succeed in careers that involve physical movement, such as surgeons, athletes, architects, gardeners, and actors.

There's a scene that I filmed for the documentary that did not make it into the final cut, in which we see Marshall cooking a stir-fry dinner for his parents (it is included as an "extra" in the DVD). There is something wonderfully graceful and skillful about the way he chops and combines ingredients and moves around the kitchen, creating a delicious meal from scratch, without a recipe. He seems totally in his element.



You can see in Marshall's STRANDS's profile that he has good motor function, which fits the profile of a kinesthetic learner. He also has good Higher-Order Cognition, which, in the STRANDS framework, includes social skills, or what Marshall calls "my people skills."

The low point on the graph is Organization and Strategies. You get this from watching Marshall in the film. He's always losing his homework assignments, and if there is a slight variation in his daily routine, everything falls apart, like chess pieces jolted off their board. (Some educational therapists call this "weak executive function.")

The main job of Marshall's tutor, Rozie, is to help him stay organized and keep on track. Rozie and his parents constantly encourage him to do things systematically, step by step. Marshall has a school planner in which he is expected to write down homework assignments and appointments, but he hates doing this because it feels constricting and regimented. Striving to become his own, self-regulated, independent person, he sometimes rebels and omits tasks from his school planner so that neither his tutor nor his parents can remind him of what he needs to do.

I sensed that Marshall's planner was a necessary, but imperfect tool. It really did help him keep organized, but it was not something he ever came to fully embrace.

By contrast, joining the crew team was entirely Marshall's own choice. It's clear in the film that he loves the experience. The physical, kinesthetic involvement, combined with the social aspect of being part of a team (two aspects that tap into Marshall's strengths), made it possible for him to embrace the rigorous scheduling and organizational commitments

that crew required. In the film Marshall's tutor, Rozie, observes that being on crew helped Marshall become more focused in his academic studies, as if the structure he encountered in crew was transferrable to other areas of his life.

When Marshall started at college his worst fears were realized. Without the external control from his parents and tutor Marshall bombed out in his first semester. For Marshall the experience reinforces that "I am not good sitting at a desk, writing stuff. I am good with things that are physical; that I can feel. That I can work with." He enlists in the Navy, hoping that the discipline of military service will give him the direction he needs.

One characteristic that remains a constant with Marshall is his dogged determination. He doesn't give up, and deep down I sensed that he really believes in himself. I am sure that one day he will find his calling in life.

Discussion Questions

A kinesthetic learner learns best when learning is accompanied by some kind of physical action or activity. Brainstorm about all the different approaches to learning that might be helpful to a kinesthetic learner. How many of these are available in your school or learning environment?

For most of his life Marshall has depended on others (parents and tutors) to provide the organization and structure that he needs to do well in school. What tools, routines or strategies do you use to organize and structure your life? How can they be internalized so they become a natural process?

When Marshall joined crew everyone noticed that his organization and his ability to complete schoolwork improved. What do you think explains this?

Are there professions or situations in life where a lot of organization is provided externally and within which one might lead a perfectly contented and productive life? Is this a viable option for someone who has poor executive function?

Watch the deleted scenes of Marshall in the "Extras" section of the DVD. Do the additional clips change your perception of Marshall or the characteristics of his learning style? If so, in what way?

DEANDRÉ



A TEACHER WHO KNEW DEANDRÉ in his sophomore and junior years of high school described him to me: He always wore dark glasses, ear buds, and a hoodie, with the hood pulled up. He seemed to have built a protective wall around himself.

In one of the first video diary homework assignments, the students were asked to make a self-portrait. DeAndré surrounded himself with objects that are important to him: his computer, his PlayStation, and a small safe in which he kept his valuables. He explained that the safe was also a metaphor for the place he kept his emotions, securely locked up.

There is no question that DeAndré had to learn how to protect and defend himself at an early age. He grew up mostly without a father. His mother died of cancer when he was eight. He did not feel loved or supported by the relatives who took custody of him after his mother's death. By the time he was sixteen he was expected to earn money to buy his own clothes and food. Given the odds stacked against him, it was amazing that he had not dropped out of high school by the time I met him. He was eighteen and struggling through his senior year at Berkeley High.

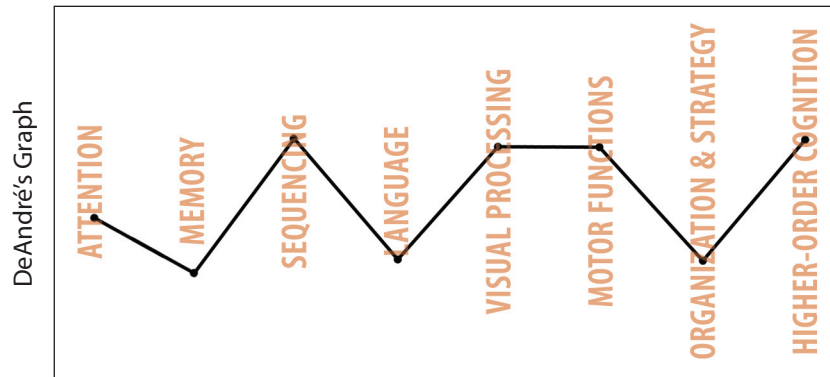
Even more amazing was the fact that he wanted to be a part of *ORIGINAL MINDS*. Like Marshall, he saw the project as a chance to speak for himself. He wanted to set the record straight about how he learned. He felt deeply stigmatized by being placed in special education classes, starting in the third grade, after his mother died.

Yet participating in *ORIGINAL MINDS* meant having to open up his emotional safe to tell his story. Just showing up in class was a brave thing to do. For a long time he didn't say much. He just sat back and watched. Gradually, the openness of some of the other students in talking about their learning differences led him to feel safe enough to begin to explore his. He still kept a low profile in his regular classes at Berkeley High, where he took every possible precaution to keep other students from identifying and singling him out as a special education student. (Berkeley High has a policy of "mainstreaming" special education students by putting them in regular class, but supporting them with special accommodations.)

Madeleine Clarke, who introduces herself in the film as DeAndré's godmother, was his strongest advocate. She worked with him to help him realize his dream of getting into college. This meant applying for special aid available to students who, in high school, are diag-

nosed with learning disabilities and are therefore eligible for such aid under the Americans With Disabilities Act. To do this DeAndré would have to acknowledge the fact that he did, indeed have a learning disability. This was hard to do, because in DeAndré's world, having a LD was akin to being labeled as stupid.

A major breakthrough came when DeAndré met with Dr. Joan Wenters, who talked to him about the results of tests that she gave him. The tests reveal that he has strengths as well as weaknesses, but that his weaknesses are not a life sentence; they do not predetermine failure and marginalization. They are just something that needs to be acknowledged and worked with.



In the film we actually see DeAndré working on his difficulty with writing by utilizing two of his strengths. He composes music and writes poetry, in the form of rap lyrics, as a way of accessing language. The metaphors and analogies that he creates in his lyrics are a manifestation of higher-order cognition. His talent for music engages a strength in sequencing (if one thinks of music as a sequence of tones or notes, organized in time), which can also be applied to telling a story and writing.

DeAndré's English teacher explains that she works with him by getting him to write his first drafts of essays as poetry. Once the ideas are down on paper it's easier to expand them into the longer, essay format. Similarly, we see Andrew helping DeAndré with his "I-search" senior research term paper. Writing an outline gives DeAndré a structure within which to formulate his ideas.

I asked DeAndré what kind of books he liked to read. He told me he didn't much care for books except for technical manuals, "things that tell you how to build or work something." That seemed to make sense, considering that he has pretty good skills in the area of spatial or visual cognition and is very good with his hands.

The story of DeAndré's participation in *ORIGINAL MINDS* has a happy ending. For several months after the film was completed he would not look at it. He was afraid of how he would look in the film. Perhaps it would turn out to be just another in a long line of humiliations. I was astonished when he showed up at the Bay Area premiere of *ORIGINAL MINDS* and watched the film for the first time with an audience of 350 people. After the screening he stood up and talked about his role in the film. He was proud of what he had done. We were all proud of him.

Discussion Questions

Imagine making a self-portrait of yourself, in which you create a tableau, surrounding yourself with objects that are meaningful to you. Including objects that represent or are metaphors for ways that you learn or things that you enjoy learning about. What might you deduce about your neurodevelopmental strengths and weakness based on the objects you have assembled?

People with learning differences often feel that they are inadequate or stupid, even though they may be quite brilliant and capable in certain areas of brain function. What prevailing prejudices about the nature of intelligence contribute to this? What conditions in schools contribute to these prejudices?

What do you perceive as your strengths when it comes to learning, and how might they be used to address or mitigate your weaknesses?

Watch the deleted scenes of DeAndré in the “Extras” section of the DVD. Do the additional clips change your perception of DeAndré or the characteristics of his learning? If so, in what way?

NEE NEE



WHEN NEE NEE WAS IN THIRD GRADE one of her teachers typed up a statement she made about herself and paired it with a photograph of her eight-year-old self. It read: “The most important thing people should know about me is that I’m not like anyone else. I think different.” Even as a young child, Nee Nee understood that she grasped information in a different way from her schoolmates. She was able to learn and remember facts that were communicated orally, but it was hard for her to make sense out of written language.

The act of writing was and still is painful for Nee Nee. Writing requires several different brain functions to operate together, in sync. To get words, sentences, and paragraphs onto paper or a computer screen you have to:

- a) keep in your mind the thing that you want to say,
- b) retrieve from memory the words you need to say it,
- c) visualize the letters needed to make up the words,
- d) organize the words into a meaningful sequence that conforms to the rules of grammar and spelling, and
- e) coordinate your hand, which is grasping a pencil or typing on a keyboard, to create the letters.

If you have difficulty in any one of these areas the whole process gets bogged down.

At one point Nee Nee told me that she felt her hand could not keep up with her mind when she was writing with a pen or pencil. This was especially problematic when it came to taking notes in history class. Nee Nee observed that she can’t “listen, think, and write at the same time.”

We gave her a laptop computer to write with, and she found that this helped. A keyboard is an accommodation for someone who has poor graphomotor function, which simply means difficulty writing by hand.

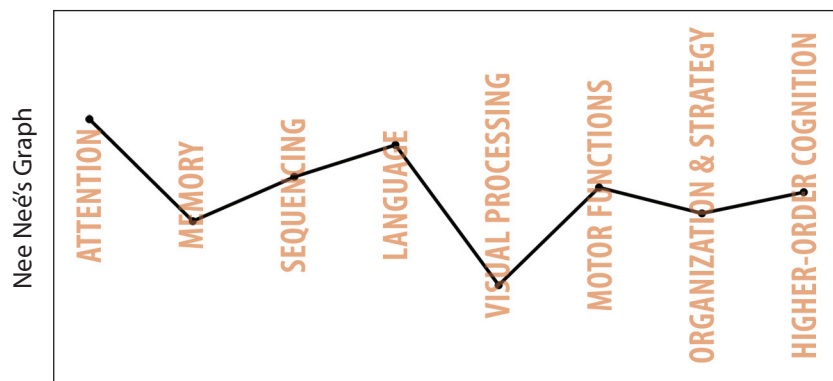
For kids who have difficulty reading, listening to an audio recording of a book, or using a computer text-to-speech translation program while following the written text, can be of great help. Hearing the sound of the words while looking at their visual representation is an excellent learning reinforcement.

Using an audio recorder to record a class can also be helpful. It frees the student to listen without having to write at the same time, and assuages the anxiety of not getting everything because the recording can be played back in your own time.

At one point in the film Nee Nee's special education caseworker, Leah Katz, tells her that it is fairly common for students to comprehend material but have a hard time demonstrating that comprehension on a test. Katz tells Nee Nee that when it comes to testing, special accommodations can be made for her. "If you are having problems with memory you can take open-note tests. If it's an issue of stress and anxiety, sometimes extra time helps." (Such accommodations are often made for students who have been diagnosed with a learning difference and have received an individually tailored I.E.P., or Independent Education Program.)

Sometimes I had the sense that Nee Nee was two different people. She was absolutely terrified of reading aloud in class, but in regular conversation she was funny, intelligent, and expressive. One of her dance teachers described her as fearless. She missed a lot of days at school but she never missed a dance rehearsal or performance.

In the film Katz asks how Nee Nee's strong commitment to dance can somehow be accessed to help her get through high school. An answer comes when Nee Nee's friends and adult mentors attend her troupe's dance performance and shower her with praise and appreciation. Being respected and appreciated for something that she is really good at gives Nee Nee the self-esteem to commit to going to school on a regular basis. This echoes what Kerrigan's art teacher says near the end of the film: "Art is really essential in keeping these students open, so that they are also open in their other classes and have a stronger sense of who they are and how they express themselves."



One of the conundrums I wrestled with when working with DeAndré and Nee Nee in this film was the question: If a student is having a hard time in school, how much of this is caused by a "learning difference" and how much is the result of other factors, like lack of family support, poverty, poor diet, sleep patterns, and a host of other social and environmental influences? *ORIGINAL MINDS* was originally meant to be a film about learning disabilities. But if I had stuck to that mandate, I could not have included information about Nee Nee's struggles in the other areas of her life. Clearly Nee Nee does not have an easy life. In many ways she functions as the parent in her household, cooking and taking care of

her ailing mother, and handling their meager finances. The burden of adult responsibilities sometimes makes getting through high school seem like only one of the many things she has to deal with.

There is a danger that some clinicians and educators may see only what can be measured and verified through testing and miss seeing or acknowledging the whole person. Tending to the needs of a whole person is quite different from addressing a specific deficiency that shows up on a test. That's the challenge we all face, whether we are parents, teachers, or individuals coming to terms with our own "learning difference."

Discussion Questions

What sorts of things besides learning differences might affect a student's ability to succeed?

Can you think of someone who may have a learning difference as well as other stresses and disadvantages in his or her life? Can there be a relationship between learning differences and social, economic, and psychological factors? How would you help such a person?

Nee Nee is very articulate, considerate, and easy-going in her interactions with most people in her life, but when she gets called on to read or speak in class she completely freezes up. Why is this? What about her neurodevelopmental profile explains this? Do you know other people like this?

In the "Extras" section of the *ORIGINAL MINDS* DVD there are several deleted scenes from Nee Nee's life at home, as well as more footage of an autobiographical dance portrait in which she performs "My Life as an Obstacle Course." How would you rank the obstacles in Nee Nee's life?

RESOURCE ORGANIZATIONS

The first three organizations on this list are concerned with the entire range of learning disabilities. They are followed, in alphabetical order, by groups with a more specific focus.

Learning Disabilities Association of America

4156 Library Road

Pittsburgh, PA 15234-1349

Phone: (412) 341-1515

Fax: (412) 344-0224

www.ldanatl.org

Andrea Turkheimer

Director of Resource Referral & Education

aturkheimer@ldaamerica.org

Phone: (412) 341-1515, ext. 203

The association offers National and State Conferences.

Publication: *Learning Disabilities: A Multidisciplinary Journal*

National Center for Learning Disabilities (NCLD)

381 Park Avenue South, Suite 1401

New York, NY 10016

Phone: (212) 545-7510

Fax: (212) 545-9665

Toll-free: (888) 575-7373

www.nclد.org

NCLD provides essential information to parents, professionals, and individuals with learning disabilities, promotes research and programs to foster effective learning, and advocates for policies to protect and strengthen educational rights and opportunities. Since its beginning, NCLD has been led by passionate and devoted parents committed to creating better outcomes for children, adolescents and adults with learning disabilities. Founded in 1977 by Pete and Carrie Rozelle as the Foundation for Children with Learning Disabilities, the organization provided leadership, public awareness, and grants to support research and innovative practices in learning disabilities. In 1989 the organization changed its name to the National Center for Learning Disabilities and expanded its mission and the scope of its work. Anne Ford assumed the role of Chairman of the Board at the time and led the organization for 12 years.

LD OnLine

WETA Public Television

2775 South Quincy St.

Arlington, VA 22206

Phone: (703) 998-2899

Fax: (703) 998-2060

Laurie Fry, publicist for LD OnLine, (503) 399-7999

www.ldonline.org/about/weta

LD OnLine.org is the world's leading website on learning disabilities and ADHD, serving more than 200,000 parents, teachers, and other professionals each month. LD OnLine seeks to help children and adults reach their full potential by providing accurate and up-to-date information and advice about learning disabilities and ADHD. The site features hundreds of helpful articles, multimedia, monthly columns by noted experts, first-person essays, children's writing and artwork, a comprehensive resource guide, active forums, and a Yellow Pages referral directory of professionals, schools, and products. LD OnLine is a national educational service of WETA-TV, the PBS station in Washington, DC. WETA also offers three other comprehensive educational sites:

ReadingRockets.org, ColorinColorado.org, and AdLit.org.

Association on Higher Education and Disability (AHEAD)

P.O. Box 540666

Waltham, MA 02454

Phone: (781) 788-0003 voice and TTY

Fax: (781) 788-0033

ahead@ahead.org

www.ahead.org

AHEAD seeks full participation in higher education for persons with disabilities and promotes excellence through education, communication, and training.

Principal publications: *Journal of Post-secondary Education and Disability*.

ALERT Newsletter, bimonthly, online.

AVKO Dyslexia and Spelling Research Foundation, Inc.

3084 West Willard Road, Suite W

Clio, MI 48420

Phone: (866) 285-6612

Fax: (810) 686-1101

www.avko.org

The foundation promotes an audio, visual, kinesthetic, and oral (AVKO) multi-sensory approach to dyslexia. Studies the spelling patterns of the English language to determine what makes the language especially difficult to understand for people with dyslexia. Advises parents and teachers about materials that will best help people with dyslexia to spell and read competently.

Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD)

8181 Professional Place, Suite 150

Landover, MD 20785

Phones: (301) 306-7070, (800) 233-4050

Fax: (301) 306-7090

www.chadd.org

www.chadd.org (Spanish)

CHADD works to improve the lives of people affected by AD/HD through collaborative leadership, advocacy, research, education, and support. Serves as a national resource center on AD/HD. Offers health information specialists who are available to members, professionals, and the general public to answer questions about AD/HD and to provide referrals to local chapters and other community resources.

Principal publication: *ATTENTION!* bimonthly.

Council for Exceptional Children (CEC)

1110 North Glebe Road, Suite 300

Arlington, VA 22201

Phone: (703) 620-3660

(888) 232-7733

(866) 915-5000 TTY

Fax: (703) 264-9494

www.cec.sped.org

CEC focuses on the educational success of children with disabilities and children who are gifted and talented and supports the professionals who serve them. Conducts conferences and programs on special and gifted education, publishes journals and newsletters on current research and special education topics, develops and implements standards for special education and gifted programs, and advocates for effective policies and legislation for special and gifted education.

Principal publications: *Exceptional Children*, quarterly,
Teaching Exceptional Children, bimonthly.

Council for Learning Disabilities (CLD)

P.O. Box 4014

Leesburg, VA 20177

Phone: (571) 258-1010

Fax: (571) 258-1011

www.cldinternational.org

CLD promotes effective teaching and research to enhance the education and lifespan development of individuals with learning disabilities. Establishes standards of excellence and promotes strategies for research and practice through interdisciplinary collegiality, collaboration, and advocacy.

Principal publications: *Learning Disability Quarterly*, quarterly,
LD Forum Newsletter, bimonthly, print and online.

The International Dyslexia Association

(formerly the Orton Dyslexia Society)

8600 LaSalle Road

Chester Building, Suite 382

Baltimore, MD 21286

Phone: (410) 296-0232

(800) 222-3123

Fax: (410) 321-5069

www.interdys.org

Operates a free information and referral service. Includes a membership of a variety of professionals in partnership with individuals with dyslexia and their families. Actively promotes effective teaching approaches and related clinical educational intervention strategies for individuals with dyslexia. Facilitates the exploration of the causes and early identification of dyslexia.

Principal publication: *Perspectives*, quarterly.

National Association for Adults with Special Learning Needs

c/o Correctional Education Association

4380 Forbes Boulevard

Lanham, MD 20706

Phone: (800) 496-9222

www.naasln.org

The association advocates for national policy, legislation, and funding to support adults with special learning needs. Provides professional development and technical assistance and disseminates information and research. Works to increase awareness of holistic services and best practices for serving adults with special learning needs.

**National Association for the Education of African American Children
with Learning Disabilities**

P.O. Box 09521
Columbus, OH 43209
Phone: (614) 237-6021
Fax: (614) 238-0929
info@aaclld.org
www.aaclld.org

The association seeks to improve the quality of education for African American children by raising the level of awareness in their communities about learning differences. Promotes an understanding among parents, educators, and others of the culturally sensitive issues facing minority children with learning disabilities as defined by federal law. Provides a clearinghouse of information and resources for parents, African American educators, and others responsible for providing an appropriate education for students.

Principal publication: *American Families with Children Who Learn Differently*, updated as necessary.

The Center: A Resource for Women and Girls with AD/HD

3268 Arcadia Place NW
Washington, DC 20015
Phone: (888) 238-8588
Fax: (202) 966-1561
contact@ncgiadd.org
www.ncgiadd.org

The center provides information and support to women and girls with attention deficit/hyperactivity disorder. Maintains its ADDvance web site, www.addvance.com, with resources that can be downloaded and books that can be purchased.

ADDITIONAL INTERNET RESOURCES

American Academy of Pediatrics. National Center of Medical Home Initiatives.
www.medicalhomeinfo.org/about/cocwd/policy.aspx

LDOnline

www.ldonline.org

Federal agencies:

www.loc.gov/nls/reference/circulars/learning.html#orgs

LD Resources

www.ldresources.com

MedlinePlus—Learning Disorders

www.nlm.nih.gov/medlineplus/learningdisorders.html

National Center for Learning Disabilities—Get Ready to Read

www.getreadytoread.org/index.php

National Dissemination Center for Children with Disabilities (NICHCY) Publications

www.nichcy.org/InformationResources/Pages/NICHCYPublications.aspx

National Institute of Neurological Disorders and Stroke (NINDS) Dyslexia Information Page

www.ninds.nih.gov/disorders/dyslexia/dyslexia.htm

National Institute of Neurological Disorders and Stroke (NINDS) Learning Disabilities Information Page

www.ninds.nih.gov/health_and_medical/disorders/learningdisabilities_doc.htm

Nemours Center for Children’s Health, Nemours Foundation

www.kidshealth.org/kid/health_problems/learning_problem/

Note: Health-related articles for educational purposes for children.

The site is not intended to provide medical care information.

SchwabLearning.org: A parent’s guide to helping kids with learning difficulties.

www.schwablearning.org