UNIVERSITY OF MASSACHUSETTS BOSTON

ASSESSING NEURODIVERSITY IN THE SECONDARY CLASSROOM:

CREATING A SUSTAINABILITY MODEL THAT INCORPORATES METACOGNITION AND CRITICAL THINKING SKILLS INTO CONTENT AREA DISCIPLINES

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Introduction

Picture a student sitting in the middle of a classroom, nibbling on his fingernail. This student--Kevin, let's call him-- appears, for all intents and purposes, quite disheveled. His dirty blonde hair looks greasy, he is wearing a pair of shorts even though it is snowing out, and his backpack bulges with heavy textbooks, random scraps of paper, and the detritus of a shredded pencil eraser. Kevin is anxious because he did not do his English homework. He is surrounded by twenty-eight of his third-grade peers, and his teacher is quickly approaching him as she checks off the homework of each student sitting in the row ahead of him. He has an instinctual urge to escape; at this moment, he would rather be anywhere than sitting in his cold, metal desk that he's carved his name into over the course of his semester as he tries, repeatedly, to understand the words in the pages of his book and becomes increasingly frustrated at his inability to make sense of the patterns that he glimpses.

Kevin does not know that he is Dyslexic, nor that he has an executive functioning disorder. He believes that he cannot read because he is not trying hard enough, since for two years his teachers have told him that he is not working to his full potential. His parents do not necessarily agree with his teachers because they so often see Kevin come home from school so seemingly defeated, but they have limited resources and do not have the tools to enable Kevin to get the remediation that he would so greatly benefit from. However, should Kevin receive proper accommodations, guidance, and positive reinforcement, he could very realistically achieve the academic success he so desperately wishes for. In fact, if his parents decided to contest his school district and were somehow able to successfully argue that his teachers are not able to serve his needs,

Kevin could receive the funding from town taxpayers to attend a school very much akin to the one that currently employs me.

Kevin's story is one that I have heard repeatedly over the past ten years from different voices within different faces. Though the context constantly changes, the narrative never varies. As a listener, this story remains startlingly disheartening, but makes my work as an educator--and now administrator-- to students with learning differences seem all the more relevant. After spending nine years as both a History teacher and an English teacher in schools specifically geared towards students who learn differently, six months ago I was hired in a newly created position as an Academic and Curriculum Development Coordinator at a very young boarding school in Rhode Island. Indeed, during the interview process, the role was described as an amalgam of sorts, which was perhaps representative of the institution behind it: the job combined administrative work, through overseeing the entire faculty, with the inherent creativity designated to an individual who held agency over a school-wide curriculum. This opportunity was thrilling to me as a practitioner of creative and critical thinking. Here was an ideal chance in which to emphasize, within a school environment, concepts that are so important to me in the context of education: metacognition; critical thinking; creativity; good citizenship.

The school itself, only seven years old, currently serves high-school aged students in grades nine through twelve with diagnosed language and processing disorders such as Asperger's Disorder, Dyslexia, and Nonverbal Learning Disorders. It was, and remains, a perfect opportunity to demonstrate my passion for enabling students who learn outside of the socio-cultural norms of education to find academic success. Nevertheless, before

attempting to rehaul the entire curriculum-- a future goal-- I realized that the school was lacking a very distinct element important to the cultivation of a well-rounded, neurodiverse learner: a holistic assessment set of grids or standards that examined a student as an individual *not* to be graded through standardized testing, but by a set of objectives relevant to their growth as an individual, especially in accordance with the tenets held so dearly by both myself and the founders of the school.

This report, therefore, is written with the intention of providing you, the reader, with a solid understanding of the steps that I took in working to establish a sustainable model to both experiment and work from, as I created an assessment grid for neurodiverse learners. In doing so, I will explain the importance of the neurodiversity paradigm to my work, as well as illustrate the research that went into establishing a scope and sequence for this project. From there, I will guide you through the sustainability model that I have begun to create, and touch on the interviews that were so very important to me as I looked to gain feedback, understanding, and guidance in order to make gains on this work. Finally, this report will consider future directions, as the gains described within this report are ongoing, continually in need of re-evaluation and therefore worthy of critique. Nevertheless, before proceeding, a discussion of neurodiversity remains necessary to a stronger understanding of the scope and sequence of this work, in order to better describe the underlying implications found in the sustainability model.

On Neurodiversity

The term neurodiversity refers to the diversity of brains and minds within our species (Baron-Cohen, 2014; Goodley & Runswick-Cole, 2015). Developed primarily

through studies examining individuals on the Autistic Spectrum, the term neurodiverse operates under the following assumption: the idea that there is one “normal” or “healthy” type of cognitive functioning or mind is a culturally constructed fiction (Armstrong, 2015) and is ultimately debilitating to individuals with diagnosed learning differences (Fisk & Rourke, 1983).

Therefore, “the cumulative effect of these studies suggests that a more judicious approach to treating mental disorders would be to replace a “disability” or “illness” paradigm with a “diversity” perspective that takes into account both strengths and weaknesses and the idea that variation can be positive in and of itself (Armstrong, 2015).” By referring to this judicious approach as a paradigm of neurodiversity, the school in which I work has embraced such notions of inclusivity, and established a mission statement that seeks to instill the skills necessary to supporting perceived cognitive weaknesses, while actively working to optimize student strengths. The school is an active proponent of the neurodiversity model, though they do not use the term for fear of alienating potential students and parents who strongly align with the idea that diagnosed learning differences are, in fact, disabilities, and ought to be treated as disabled individuals. Accordingly, when working to create class groupings, we place students in courses dependent on their cognitive profile, not by age or grade level. In other words, all students are given a neuropsychological battery of testing, prior to admittance, and depending on the scores they receive-- in conjunction with their personality styles-- they are grouped depending on neurocognitive factors such as full scale IQ, processing speed, verbal abilities, and visual-spatial IQ.

Figure 1 describes the procedure adopted in creating a sustainability model in which the neurodiversity model is manifested as a pyramid of skills, content, and learning outcomes that work to support and provide the foundations for the mission statement.

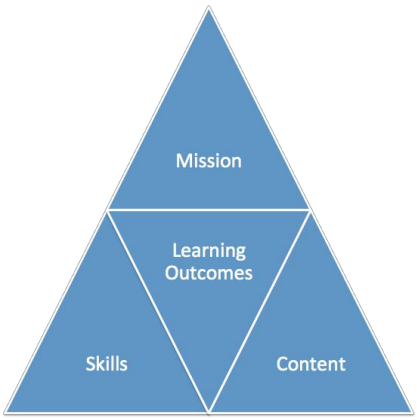

Figure 1 - Procedure adopted within the current report.

In a private school environment, a mission statement is exceptionally important when attempting to convey the goals of the institution to potential students and parents, because it expresses the language that the school uses, is emphasized in all marketing material, and teachers are expected to abide by its tenets throughout the duration of their occupancy (Jorgenson, 2006). In following the neurodiversity paradigm, our mission statement was constructed and designed by the founders of the school, to promote to following ideals: provide individually tailored academic instruction and social programs to students with learning differences in a supportive and caring educational community; create relationships with teachers, peers and families to support students' academic, social, and emotional growth; teach students to become more independent and self-aware learners who are prepared for success after graduation. Consequently,

emphasizing the importance of the mission statement to this project is *paramount* to the construction of a sustainability model. In working to create a model, I wanted to ensure that each aspect of our mission statement was supported by a foundation of content, skills, and learning objectives.

I will explain what I mean by content, skills, and learning objectives further on in this report, but at this juncture, I will describe the ways in which I engaged in the research and process. This description will allow me to demonstrate the multiple paths that I took as I labored to establish a framework by which to assess our wonderfully neurodiverse learners.

Engaging in the Research & Process

Prior to deciding upon the direction I wanted to head in as I worked to create a model that incorporated metacognitive goals and critical thinking into a sustainable, secondary assessment, I realized that I needed to conduct a massive amount of research in order to have a stronger understanding of what other theories, models, and educators are doing. I wanted to learn if other high schools geared towards a similar cognitive population had a similar set of attitudes surrounding the notion of neurodiversity that may have resembled my own, and if so, what those models looked like in addition to understanding the reasoning behind them. I began, therefore, by conducting extensive research into various types of instructional assessment methods in order to differentiate between formative and standards-based assessments. I learned that standards-based objectives are most often considered beneficial to helping a student think critically because they support constructivist-centered approaches in which the student is encouraged by his or her instructor to have agency over their own learning (Iamarino,

2015). Encouraging reluctant learners to engage in learning for the sake of learning has been a consistent theme within my work in the Creative and Critical Thinking program, and I was greatly impressed by standards-based objectives that allowed a teacher to grade a student holistically. However, I was concerned that since our lessons have to be so differentiated within each class due to the discrepancies between individual cognitive profiles, I wondered if creating a set of standards would ultimately disservice the population. My concerns were assuaged, however, as I researched, sought out, and interviewed various educators and administrators at similar New England boarding schools: Franklin Academy, Eagle Hill School, Oxford Academy, and instructors from the now defunct Pine Ridge Academy. In speaking with various faculty members and policy-makers, I found that each of the schools utilized a set of standards-based grids and objectives by which to grade each student periodically throughout the year. Having been given verbal advice and encouragement by former colleagues, friends, and now, new peers, I was ready to present my findings to my supervisor, Dan Leventhal, and consider new directions from which to work.

In preparation, I prefaced our meeting by emailing Dan a set of topics that I wished to discuss based on my research: 1. skills versus content regarding neurotypical and neurodiverse learners; 2. class names and sequencing under measurable learning outcomes; 3. classes that we don't teach, but have potential to with our population; 4. whatever else Sara currently has on her mind. With these topics in mind, we brainstormed ideas surrounding a conceptual sustainability model and Dan gave me some fantastic resources. He loaned me his copy of the book *A School Leader's Guide to Standards-Based Grading* as a way to break down this process into manageable pieces, and the text *Designing & Teaching Learning Goals & Objectives* because as I explained my

goals for creating the sustainability model, Dan felt that the content of the text would help me to structure myself moving forward. This meeting was particularly influential to the creation of this project, because Dan and I took the time-- over the duration of a two week period-- to meet daily in order to brainstorm the types of standards that we wanted our faculty to focus on. Accordingly, instead of being content-based, Dan and I decided that due to the progressive vision of the neurodiverse paradigm, in addition to my work in the CCT program, we wanted our standards to reflect our educational philosophy and be rooted in metacognition and critical thinking, while centering around concepts of self-advocacy, perspective-taking, organization, communication, and citizenship. At this point, I was excited, enthused, and ready to move forward and begin creating my sustainability model.

The Sustainability Model

Our school is devised of seven departments: History, English, Math, Wellness (composing of a curriculum that combines both Physical Education and Health), Science, Social Pragmatics, and Remedial Language. During a typical academic day, each student takes a course in each of the seven departments. Classes last for forty minutes and teachers are expected to create their own curriculum in accordance with subjective assessments which are designed to measure proficiency within each content area. From each class, narrative reports are issued to parents twice a year, which contain a course description, a paragraph describing areas of academic strength, and a paragraph that describes areas of academic challenge. On the third page of the biannual report cards is an antiquated grid that asks the teacher to rate the student on how well students have displayed mastery of twelve very broad objectives relating to content, but no content was

described. The current grid was not sustainable in the sense that it did not connect to the vision of the school and the language that was being used with community members through academic newsletters, email communication, and weekly phone calls to each parent. Additionally, the use of a narrative paragraph describing "areas of academic challenge" did not align with the school's vision of embracing a neurodiversity paradigm, because it did not detail specific accommodations and interventions used to address challenges. It did not allow a space to express the ways in which an individual was taught and guided as he or she learned capitalize on pre-existing skills in order to overcome challenges. Accordingly, my first change was to retitle "Areas of Academic Challenge" to "Interventions Used to Address Academic Areas of Challenge." This simple change of wording was an efficient means of ensuring that academic interventions were being implemented and utilized by faculty members, as well as a way to demonstrate causality between demonstrable difficulties in the classroom and interventions used to indicate progress. Nevertheless, the grid still needed to be modified to align with our mission statement, types of diverse cognitive learners, and long-term strategies.

After reviewing research, notes, maps, models, and interviews, I broke the grid into five strategic components. The five components were thoughtfully designed to target each of our students-- regardless of cognitive profile-- and are theoretically applicable in both an academic or residential setting, thus allowing the grid to be utilized as a framework throughout the school. I formed the following large-scale objectives to be used as an assessment within each report despite academic content-area, and with the overall intention of replacing the previous grid that had been created quickly and with little thought to long-term implications. The new learning objectives are as follows:

Metacognition

Demonstrates an awareness of targeted processes to reach a goal
Assesses own adherence to targeted processes to reach a goal
Chooses appropriate strategies for assigned tasks
Implements appropriate strategies for assigned tasks
Can apply the above strategies to identify and achieve collaborative goals

Executive Functioning
Is prepared with appropriate and necessary tools and materials
Keeps materials and personal environment in order
Transitions appropriately from tasks and activities and school environments
Accurately estimates time to complete tasks
Allots time relative to long, medium, and short-range tasks

Expressive Language
Recognizes conventions of nonverbal language
Employs language relevant to the situation
Employs vocabulary relative to the context
Asks and answers questions clearly
Participates as a speaker

Receptive Language
Demonstrates nonverbal listening behaviors
Listens and communicates with a purpose
Asks questions for clarification during a discussion
Synthesizes information gained from listening
Demonstrates understanding

Critical Thinking
Recognizes that all thinking has a purpose, objective, goal or function
Analyzes and assesses the use of questions in others' thinking
Accurately identifies their own assumptions, as well as those of others
Accurately represents viewpoints with which they disagree
Enters empathically into points of view with which they disagree

Each of the subject headings are directly related to the school's philosophy, in which we believe that academic, social, and emotional growth occur simultaneously. The categories are therefore designed, through conversations between myself and Dan, with the intention of assuring that each student is addressing areas that will aid them in becoming more independent and self-aware learners who are prepared for success *post* secondary-schooling. At the time of this writing, I have reviewed the proficiency scales that I had devised for the model above, and found them to be very unsatisfactory. I am therefore currently researching proficiency scale models to find one that would suit our needs, as measured through a competency scale (Marzano, 2009). As of this report, I have modified a following competency scale, as inspired by the Dreyfus Model of Skill Acquisition (Dreyfus & Dreyfus, 1980) to reflect the needs of the community. This competency scale has not yet been presented to my stakeholders, as I wish to modify it further to reflect the language that we use as an institution.

Score	Description	Rating Guide
6	**Role Model**- Is a benchmark, sets new standards, and is able to demonstrate the next level of competence.	Displays current level competency 100% of the time & often that of the next level.
5	**Expert**- Encourages and influences others to display the skill, leverages expertise in this area very effectively.	Exceeds requirements. Is consistent and reliable. Displays the competency 100% of the time.
4	**Strength**- Almost always demonstrates the behavior/skill. Meets role	Displays the competency 80% of the time. High level of consistency.

	expectations.	
3	**Capable**- Often demonstrates the behavior/skill, but not always.	Displays the competency 60% of the time. Moderate level of consistency.
2	**Development Area**- Sometimes demonstrates the behavior/skill.	Displays the competency 30% of the time. Inconsistent level.
1	**Learner**- Has not yet demonstrated the behavior/skill.	Displays the competency <30% of the time.

Figure 2 - Competency scale adopted within the current report.

At any rate, after completing the objectives, the next step was to present it to two of our primary stakeholders: our Head of School and Director of Admissions. Initially, the Director of Admissions balked at the new model-- at the time she had only seen the headings-- because she was concerned that the model was targeted towards language-based learning disorders and was not cognizant of our population with processing issues (students with Asperger's Disorder or NLD). However, after she was encouraged to read the objectives more closely, she understood that though the umbrella terms of Receptive Language and Expressive Language were being used, ultimately the objective was student engagement and self-advocacy despite diagnosis. Over the course of multiple discussions, both the Head of School and Director of Admissions embraced the new model; we have decided to issue the grid four times a year to our parents. In other words, every three and a half months, each parent will get seven copies of the assessment grid that will ensure that teachers are incorporating metacognition and critical thinking into their content-area disciplines. Having received permission to use this new model, my next step is to consider the future paths and directions that I want to take. This sustainability model is only one step within my vision, and accordingly, is a constant work-in-progress.

Future Paths, Future Directions

There is much to do in the weeks, months, and years to come. Aside from completing my research regarding proficiency scales, I have to utilize both the Research and Engagement model and the Action Research framework as I work to present the model to secondary stakeholders: the faculty, students, parents, and educational consultants. I am incredibly passionate about this work and am thrilled that I am given the chance-- especially as an individual with no education certifications-- to have autonomy as I work to strengthen a progressive and creative institution that serves neurodiverse learners.

Accordingly, there are specific steps that I must take as I work to meet my vision. I have to create course descriptions that align with the with an academic trajectory that we, the administration, would like our students to embark upon as they enter the school, regardless of grade level. I will need to create a detailed curriculum guide to give to parents, consultants, and other educators that emphasizes our progressive vision of education and details the neurodiversity paradigm without specifically referring to it as a neurodiversity paradigm. From there, I will need to rewrite our academic handbook that is given to all community members to reflect all the changes that I would like to make. I also have to design content-based learning objectives that will support the new sustainability model. We now have overarching objectives that can be used academically and residentially, but from conversations with my faculty, I have discovered that they desperately wish for content-area objectives that they can design their lessons around. Finally, I would like this sustainability model to be used as a model in other schools with similar types of learners. I want to use this work to help me develop professional development geared towards school administrators, with the overall intent of aiding

them in reconsidering what it means to be “learning disabled.” I want a student like Kevin, our protagonist from the beginning of this report, to understand that he does learns differently from some of his peers, but ultimately he can be taught to understand that he is just as creative, capable, and compelling as everyone else in that classroom, including his teacher. He just may have to work a bit harder (and so will his teacher).

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