Research Proposal: Toward Humane Education.

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Introduction.

Although there are many educational theories and a great variety of curricula, there seems to be no clear consensus about effective ways to mend the current educational crisis. Despite various government initiatives and a constant drive for educational reform, American students rate low in mathematics, literacy, and science in comparison to their peers in other developed nations. Students' satisfaction with life also remains low. The real causes of this crisis are buried beneath the layers of school policies, curricular trends and learning outcome assessments. The truth lies so deep that it surpasses mere matters of education and goes to the very structure of our brain and how we use it. As the research presented in this paper demonstrates, American education propagates systematic suppression of the right hemisphere of the brain while overemphasizing the left, leading to formation of struggling, unhappy students. Ironically, these students do not do well on the very tests which are used as the tools for this left hemisphere colonialism.

In this paper, I will first review the research that lays out this educational crisis, particularly PISA statistics as a measure of the academic wellbeing of American students. Then, I will reflect on the theoretical contributions of a wide variety of educational thinkers, among them Dr. Kenneth Robinson, Dr. Betty Edwards, Walter Benjamin, Charlotte Mason and others. I will consult scientific data on the relevant topics discussed by the aforementioned thinkers as a measure of proof. Consequently, we will search for the root cause of the academic crisis at hand, referring to the scholarly contribution on brain lateralization, or the localization of certain functions to one specific side of the brain, by psychiatrist Dr. Ian McGilchrist. Adapting his thesis on the human mind and the operations of the brain, we will search for a philosophical perspective and methodological strategy to mend the educational crisis by balancing the academic activities to engage the entirety of the student's brain. Arriving at the hypothesis — a new philosophical viewpoint on the nature of balanced education — I will offer a plan for an

academic intervention as well as a qualitative research strategy aimed at testing the effectiveness of the suggested intervention.

Though the paper will end here, it is my hope that I can explore this subject further pursued my doctoral studies. I believe that the academic intervention I suggest in this paper may prove beneficial not only for the immediate educational purpose of improving students' learning capacity, but also for the very quality of students' lives, their sense of fulfillment, and overall wellbeing.

2. **Literature Review.**

Let us consider the Program for International Student Assessment (PISA) as a source of data comparing the effectiveness of education in the United States to other nations. First conducted in the year 2000, the test uses mathematics, literacy and science assessment questionnaires to gauge students' level of academic performance. According to the National Center for Educational Statistics (NCES) website, the PISA data is collected from a set of schools that are chosen to fairly represent the population of the country at hand, without bias to any particular school or student body. Within each school, a set of 15-year-old students are chosen at random to take the PISA test. In the year 2016, for instance, 240 American schools were chosen using randomized fair-selection methods with 42 students to represent each school, adding up to a robust set of 10,080 test scores to determine student readiness (NCES, 2022).

According to the 2018 PISA report presented by the Organization for Economic Co-operation and Development, the United States placed 21st in academic readiness amongst the countries that comprise 90% of world's economy and also showed alarmingly low levels of students' sense of satisfaction with life. Only 11 out of 79 countries reported lower levels of student's life satisfaction than American students (OECD, 2018).

PISA data is treated as a critical indicator of the efficacy of the educational system in the United States. According to the NCES, PISA is the largest comparative study available to date. The NCES website states, “PISA is unique because it focuses on the application of skills and knowledge and presents problems in real-world contexts” (OECD, 2018). Thus, according to this definition, poor performance on PISA reflects not only inadequate preparation in the “three Rs” (reading, writing and arithmetics) and science, but also indicates that American students have poor real-life problem-solving skills.

A plethora of questions arise based on this curious data. Is PISA in fact an accurate indicator of a student’s problem solving abilities in “real-world context”? Is this statistical sample large enough to represent a whole nation? Ten thousand is a large group, but is it enough people to speak for 329,500,000 Americans? If the American educational system assessed with more humane methods than quantitative PISA scores, would it change the outcomes for the students?

There are a wide range of human skills and characteristics that define academic success, yet the educational system insists on the idea of assigning a limited set of numerical values as a scale and a paradigm for its judgment. This unquestioned assumption that an act of answering multiple choice questions has definitive connection to an individual’s success is articulated by the Organization for Economic Co-operation and Development in the PISA statement poses a problem (OECD, 2018). In his article "How does PISA shape education policy making? Why how we measure learning determines what counts in education", Simon Breakspear (2014) presents PISA as a global yardstick for learning–an important metric that greatly influences American education by guiding policymakers to create laws that would positively reflect on PISA scores. This test-driven goal shapes education in a very particular, arguably undesirable way. Tests do not necessarily reflect well on the students' wellbeing and consequently their learning (Heissel et al., 2021). Yet, questioning the role of tests in schools remains a taboo. Those who question these assumptions seem to be quickly suppressed by the system. Adrea Eger presents an example in her article about two teachers in Tulsa who

were threatened with losing their jobs for questioning the essential nature of the tests in their school (Eger, 2019). The radical nature of the school board's response points to an unhealthy obsession of the American system with metrics.

Additionally, supported by Breakspear's research (2014)I would argue that proficiency in digesting the propositional knowledge that often results in better testing outcomes has little indication of the overall academic success of any given person. There does exist a correlation between the prevalence of tests and the quality of the learning outcomes, however it is of the inverse nature. According to research, there is a connection between frequency of testing and poor academic performance due to the effects of cortisol and other stress-induced hormones on the student's psychological state, readiness to learn, and ability to act sociably. These correlations obtain higher values in disadvantaged student populations (Heissel et al., 2021). Jerry Minz's (2017) research, however, suggests that schooling methods that do not rely on tests can offer competitive learning outcomes. The nature of the relationship between testing and education can be summed up in the words of Igor Himelfarb: "culture of testing introduces a continuum of fear and ethical and moral dilemmas related to the pressure" (Himelfarb, 2019).

Given these problems with the test-driven educational model, why do we, as a civilization, choose to rely increasingly on quantitative methods? I would like to turn to potential answers to the research findings of Dr. Ian McGilchrist. McGilchrist is a psychiatrist and a celebrated author. He is a former Oxford literary scholar with background in neuroimaging at John Hopkins University, a Fellow of the Royal College of Psychiatrists, and has three times been elected a Fellow of All Souls College in Oxford. McGilchrist presents the thesis of his research oeuvre in the book *The Master and His Emissary* (2010) and further develops it in *The Matter with Things* (2021). McGilchrist argues that our experience of the world is largely determined by the working of our mind, which in turn is dictated by the working of our brain, or rather brains: the two hemispheres of our brain shape our experience in unique ways. McGilchrist builds on twenty years of research in neuropsychology to conclude that there exists

a deeper connection between the way we choose to use our brain and the state of the world we live in. He states that living in a culture that prioritizes and reinforces left brain activity causes an individual to develop an unbalanced brain. This cultural preconditioning, that often occurs through education, shifts the natural state of human cognition that by default relies on the dominance of the right brain and allocates it to the left. Here I will offer a quote to define the problem resulting from this dominance shift:

> The problem is that the very brain mechanisms which succeed in simplifying the world so as to subject it to our control militate against a true understanding of it. Meanwhile, compounding the problem, we take the success in manipulating it as proof that we understand it. (McGilchrist, 2021, p.3)

Having become enthralled with control through the mastery of quantitative measurement, we have damaged the tender fabric of human cognition. Assigning numerical values eases the complexity of the educational process but at a high cost. The mechanisms responsible for control are precisely the ones that halt student achievement ratings. Reducing education to a narrow range of left-brained propositional knowledge based activities ultimately results in deteriorating the system of education.

The history of standardized testing affirms its nature as an expression of control. Standardized testing goes back to 3rd century Imperial China, where tests were used to cull the aristocratic groups that wished to serve the emperor. Rapid development in testing is seen during 1914-1918, the years of World War I, when military production became a priority and an urgent need to systematize the selection of army recruits arose. Testing culture increased in the United States, during the 20th century, in association with the desire for the means of selectivity in college admissions due to an increasing pool of applicants. Now, tests are an everyday reality of any K-12 system of public education, college, or university. A special science was developed to study testing phenomena, called *psychometrics* (Himelfarb, 2019). Unfortunately, tests still have a detrimental effect on the potential course of an individual's life. "Gatekeepers of America's meritocracy—educators, academic institutions, and employers—have used test

scores to label people as bright or not bright, as worthy academically or not worthy" (Sacks, 1999). Many bright young people have never actualized their career dreams due to coming below a mark in standardized test scores. Many career goals were abandoned due to coming short of the mark. In this way tests have become the cause and the method of dividing the American people, allowing for prosperity to some and denying it to others.

Let us turn to the study of the brain for a moment, particularly, to brain lateralization. Since 1959, when the celebrated Roger Sperry first published his brain lateralization research, there has been much speculation on what the exact roles of each brain hemisphere are and the practical implications of these findings. Sperry performed neuropsychological experiments on epileptic patients whose *corpus callosum* was severed as a part of their epilepsy treatment (Lienhard, 2017). These experiments revealed that each person has, in fact, two independent brains connected by this structure. Each hemisphere possesses a unique set of functions and a unique set of characteristics that result in an idiosyncratic personality and an independent world view of each hemisphere. One human brain is essentially composed of two autonomous characters in communication with one another through the *corpus callosum*. (McGilchrist, 2021 p.3-49). For example, one study on a patient with a severed brain revealed that his two hemispheres had different feelings towards his wife. As he attempted to hug her with the left hand which is connected to the right hemisphere, his right hand pushed her away (McGilchrist, 2021).

Over the last 65 years since Sperry's Nobel-winning discovery, a large volume of research on the brain has been conducted. Ian McGilchrist presents a meta-analysis of much of the research available up to the date of his writing, painting a concise picture of what are the exact roles of each brain hemisphere. The clue rests in the title *The Master and His Emissary* suggesting that one hemisphere of the brain has the job of master while the other hemisphere ought to perform the functions akin to those of an emissary. The job of the master, that is the right hemisphere, is to create a wholistic, well-rounded picture of the surrounding environment, while the task of the emissary, or the left hemisphere, is to focus on collecting precise data on

the world around. This data ought to improve the fidelity of the holistic picture created by the right hemisphere. Thus, the job of the left hemisphere is to compile and analyze sequential information and report it to the right hemisphere for intellectual integration. This division in functionality is necessary for high order cognitive function. It is revealed through scientific observation that the size of the *corpus colosseum* is inversely proportional to the level of cognitive development of mammals in nature. The human brain possesses the smallest relative size of the corpus colosseum to the size of the brain hemispheres coinciding with apparent cognitive superiority of humans amongst other species (Westerhausen et al., 2017).

Despite the distinct roles that brain hemispheres play in daily activities, the entire brain is active at all times. Many mental processes, however, predominantly rely on one of the two hemispheres. As mentioned before, the right hemisphere is responsible for the synthesis of the whole, while the left hemisphere is responsible for analysis of the parts.

With this in mind, some research findings demonstrate anticipated results; other findings however suggest much more curious implications. As expected, linguistic functions start in the right hemisphere at birth and typically migrate to the left hemisphere towards adulthood (Olumide et al., 2020). Engaging in arithmetic and calculation is also a predominantly left lateralized processes (Jung et al., 2020). On a more curious note, accepting contradictory information is a working of the right hemisphere (McGilchrist, 2009: intro), and so is the ability to recognize human faces (Gazzaniga, Smylie,1983). These findings suggest a profound role that the right hemisphere plays in the fabric of human interaction. Recognizing human faces elicits the desire to treat other humans as people, therefore imploring a respect for individual sovereignty. Accepting potentially undesirable information is also a right lateralized process (McGilchrist, 2009). Having the ability to integrate the whole from discreet parts, the right hemisphere is able to internalize contradictory information and accept it as a part of its surrounding environment. Thus, many of the necessary functions for operating as a community are right-hemisphere predominate. When the right hemisphere dominance becomes usurped, the collective fails to function as one communal organism.

Let us envision each hemisphere as a personality based on lateralization research. In this depiction, the right brain would be trusting, contemplative, abstract in its perception, silent, philosophical, accepting of others, relationship driven, empathetic, altruistic, and questioning. A well-developed right hemisphere leads to the propensity for the following habits: environmental consciousness, affinity for nature, delight in tactile sensations, aesthetic appreciation, conceptual thinking, and versatility in the realm of procedural learning. The left brain's personality would be adept with words, outcome-driven, yield-oriented, rigid, detail-focused, linear, materialistic, not willing to be interrupted and versatile in propositional knowledge. The predominance of the left hemisphere also influences the formation of character. For instance, the unwillingness to be interrupted leads to rejection of foreign ideas. Materialism leads to amassing of things. Finally, the linear, detail oriented nature that focuses on the proverbial trees without seeing the forest leads to a lack of awareness of its own limitations, yet an ability to argue its limited point of view with a sense of false confidence due to an aptitude for words. The following list outlines the traits of the two hemispheres. I have compiled this graph based on the work of Dr. McGilchrist, Dr. Sperry, and other literature listed in the bibliography.

Right	**Left**
Looking for prey	Looking for predators
Exploratory	Grabbing
Theoretical	Experiential
Bits	Whole
Propositional	Procedural
Abstract categorical	Contextualized
Inanimate	Animate
Mechanistic	Organic
Impersonal	Personified
Stasis particular	Coherent and flowing
Automatic	Adjusting

Deconstructed	Embodied
Coalesced	Between the perceptions, Interstitial, Liminal
Factual	Mythos
Decontextualized distinct certain discreet domain	Rich embodied implicit world
Apprehend	Comprehend
Manipulate	To see for what it is
Synthetic	Analytic

The left brain tends to dominate when surrounded by the environment that activates its strengths. The left hemisphere doesn't like to be interrupted and therefore tends to self-propagate *ad infinitum*. Being immersed in the left-brain oriented environment, the right brain becomes easily subverted and yields its dominance. When the proper brain dominance is foregone, the brain loses its ability to rebound to the proper balance. The left dominant environment renders the brain helpless in its inability to see the *gestalt*. McGilchrist observes, "the emissary became contemptuous of his master … the master was usurped, the people were duped, the domain became a tyranny" (McGilchrist, 2010: 14).

Returning to the beginning of this argument, we can identify a correlating pattern between brain dominance and educational tendencies. Modern education is overwhelmingly propositional in its mode of delivery; it is language-based and test-driven. This type of environment subverts students' minds to left-dominance, and propagates this left-dominant culture outside the school walls. Additionally, the educational setting is designed with maximum physical confinement in order to increase the level of student subordination to authority, sometimes not dissimilar to a prison facility (Illich, 2000). Even the students who wish to modify the flow of learning to suit a more brain-balanced approach do not have the ability to work against the rigid construct of the educational apparatus. The culture at large becomes influenced by the workings of educational institutions. The world becomes increasingly colonized by the left hemisphere. "It is as if the left hemisphere, which creates a sort of self-

reflexive virtual world, has blocked off the available exits, the ways out of the hall of mirrors, into a reality which the right hemisphere could enable us to understand" (McGilcrest, 2010, pp9-30).

This radical notion of a world colonized by the left brain way of thinking has a high level of resonance with Walter Benjamin's writing on education. In the INPE Roundtable, Tyson Lewis presents Walter Benjamin's antifascist perspective on education. In essence, Benjamin and McGilchrist identify similar social problems that relate to education, yet present them from varying vantage points. Benjamin, who lost his life in an attempt to escape pre-World War II Germany in 1940, portrays the nature of proto-fascist education as manipulative, indifferent, hard, cold, linear, indifferent to others, numbing the body in order to possess the mind, non-dialectic but rather propositional in nature, imposing, and un-interrupted (INPE, 2022). This portrayal strikingly resembles the image of McGilchrist's left-brain-dominant individual. Both Benjamin and McGilchrist project a tragic future due to the social tendencies they observe. While McGilcrest theorizes that the left brain colonized civilization is bound to collapse, no theorizing is necessary to prove the projected outcome of Benjamin's ideas. The exacting, rigid, cold, propositional and physically confining system of proto-fascist education resulted in devastating events: It successfully transformed the German populace, enabling it to accept a charismatic leader who was himself an archetype of the system that chose him to be its master.

What can be done to interrupt this left brain, self-propagating tendency? In his book *Creative Schools*, Dr. Ken Robinson analyzes and exemplifies an intimate connection between the decline of the arts in public education and the degradation of students' academic performance and social wellbeing. Robinson offers many case studies that call for restructuring of the curriculum in favor of the arts. He demonstrates the dramatic improvements these curricular adjustments have on the lives of students when put into place. Students with criminal backgrounds find a sense of self-actualization and proceed to pursue positive actions in their communities (Robinson, Aronica, 2015). The case study of the "Dancing Classrooms" illustrates this pattern well. In 1994, Pierre Dulaine, a dance educator, had pioneered a ballroom dancing program in a Title I, New York inner city school. The lives of underprivileged students who had

lost hope for ever succeeding in a left-brain dominated, rigidly academic system of public education experienced immense transformation while learning ballroom dance. These students have learned to regard one another with dignity, found a sense of purpose in mastering the art of dance, and have learned that being a criminal is not the only way to obtain respect. The movements of dance gave freedom to their bodies, proving that school can feel like something other than physical incarceration. Noticeably, all of the aforementioned academic benefits of this program do not fall in the realm of propositional knowledge. Yet, it provided the missing educational piece for the students creating a massive impact on the school community. Not only did these students graduate, succeeding in tests they were obliged to take, but their lives were transformed by gaining self knowledge, self respect, and acquiring a sense of community (Robinson, Aronica, 2015). This story caught so much public attention that it found a cinematographic representation with Antonio Banderas as the lead actor in the movie *Take The Lead* (Friedlander, 2006). Public affinity to the narrative of transforming quality of education speaks volumes about the social desire for educational reform.

In order to proceed, I have to introduce the academic approach of Dr. Betty Edwards in her best selling book *Drawing On The Right Side Of The Brain*. Similarly to Robinson's discussion of the value of art in education, Edwards emphasizes the profound effect that drawing has on an individual's academic success. Edwards demonstrates that the act of drawing has the capacity to mend the proper order and create unity between the brain hemisphere functions. Inspired by Sperry's work, back in 1979, Edwards observes that drawing alters the patterns of thinking. She uses her observation to produce a series of exercises that optimize the shift to the right brain, which she publishes as the first edition of the *Drawing On The Right Side Of The Brain* book. This book has sold four million copies and was translated to multiple languages since its original publication. Such public acclaim, once again, points to the communal desire for educational reform, specifically the inclusion of creative subjects. Having taught hundreds of workshops and corporate seminars on problem solving since the first publication of her book in 1979, Edwards noticed that the act of drawing allows individuals to tap

into the otherwise hidden potential of their brain. Drawing has an ability to calibrate brain function. The solutions to problems that require predominantly abstract thinking become more readily accessible during an act of drawing, when a person fully engages their right hemisphere (Building 21, 2022).

Additionally, Edwards argues that visual literacy offers the right brain counterpart to the left brain verbal literacy. Visual literacy has five basic skills identical to those of verbal literacy. Verbal Literacy involves phonics, phonetics, vocabulary, fluency and comprehension, while visual literacy requires mastery of perception of edges, spaces, relationships, values and the *gestalt* (Edwards, 2020 p. 10-13). Visual literacy demands similar attention to verbal literacy, that is taught starting in kindergarten and honed all throughout the educational continuum. Visual skills ought to be taught and continuously developed throughout the entire length of education in order to maintain a well roundedness of one's intellectual growth through proper functionality of the brain.

One picture is always better than a thousand words, states Edwards, suggesting that visual information is often more convincing. The contemporary information culture is increasingly reliant on imagery. Social media and other digital outlets often become the main source of information in contemporary culture, yet the educational system insists on ignoring this fact (Building 21, 2022). Our brain itself is structured to prioritize visual information. According to William Allyn, professor of Medical Optics, more than half of the surface of the brain is designated to processing visual information (Hagen, 2012). Additionally, an overwhelming amount of what we learn about our immediate surrounding is in fact visual in nature (Sivak, 1996). The right hemisphere is responsible for processing a major portion of visual data, thus visual education is a natural way to restore proper right hemisphere dominance. Additionally, visual education stimulates the intentional approach to perceived enjoinment. Visual literacy coupled with analytic capabilities allow one to participate in the exchange of visual ideas with purpose and a critical eye. Yet, in educational culture the emphasis is enormously shifted towards verbal literacy through text and numbers with an

apparent jeopardy to the visual realm of education. It leads to improper hemispheric function. Additionally, it leaves the students without a necessary critical voice for engaging with the predominantly visual contemporary information culture.

The history of written language itself underscores this educational contradiction. The proto-cuneiform inscriptions dating back to 3000 B.C. are pictographic in nature. The first writers found a quick way to sketch abstract, right brain ideas into clay tablets with a pointed tool. These tablets, that began as a right-hemisphere act of drawing, later became adapted to left hemisphere tasks and purposes of bureaucratic accounting and business agreements (Brown, 2021). The educational reform demands for the completion of this historic circle. Remaining behooved by verbal literacy, the educational systems shall restore the due emphasis on the image with its power to engage, educate and invigorate.

Unlike the history of the written language, the history of American public education dates back to a much more recent events but leads to no less left brain outcome. The Old Deluder Satan Act, originally passed in 1647 marks the beginning of American public education. The act was designed as a precautionary measure against heresy. It required Puritan settlers to hire a teacher if the settlement reached 50 families and to build a school if the settlement increased in population to 100 families or more. The goal of this provision was to prevent potentially illiterate parents from misconstruing the Bible (Carleton, 2009). Half a decade later, in the mid 1700s, Prussia was devastated by the Napoleonic defeat. Consequently, it turned its principal attention to reforming the educational system as one of the chief tools for rebuilding its army and national pride. Prussia pioneered the first compulsory model of state funded education that began as early as age four and lasted for eight consecutive grades (Anderson, 2004). One of the primary roles for such an early start to education was to remove future soldiers from their mothers in order to ensure proper allegiance to the state. The Prussian system also pioneered the discrimination between the students suitable for the white collar jobs and those considered not intellectually capable of such tasks.

Rooted in its Prussian heritage, the German educational system today still actively separates students into the intellectually capable and those limited to vocational training. Germany is one of the three countries that outlaws parental choice in homeschooling as an act of deviance against the state. Germany is the only country where an attempt to exhibit this freedom of school choice is punished by incarceration (O'Brien, 2013).

This system, so effectively designed for the provisions of the state, quickly caught the attention of American policymakers. In 1818 John Griscom, an American educator reported favorably about the Prussian model, turning the attention of many statesmen and educators towards Prussia. In 1835, the Michigan Constitution fully embraced the Prussian model, proceeding to legislate tax-supported elementary public education. The other states quickly followed (Soysal, David Strang, 1989). Despite the apologia for the necessity of the Prussian model during the age of mass migration as a provision against the social unrest and instability (Bandiera, 2018), the roots of this model reveal the control-oriented nature of its structure. The Prussian model of education, borrowed by American statesmen, was designed for the suppression of individual identity to benefit the state. This suppression was executed by disturbing right hemisphere dominance through age-isolated grade structure, physical confinement, reliance on propositional knowledge as the dominant form of teaching and quantitative testing and the mode of assessment. I would argue that it is time to begin reforming this model by challenging the suppressed individual rights and students by allowing them to exercise creative freedoms as discussed by Robinson and Edwards.

Looking for educational alternative the Lyceum offers a potential inspiration. The model of Aristotle's Lyceum could offer an alternative educational model that is rooted in the historical past of a democratic nation. Lyceum model offers a rather compelling vision from the brain lateralization perspective. The Lyceum was the first school open to the public free of charge. Centered around a library in ancient Athens, the Lyceum was composed of a group of research students with a much less authoritative figure of the teacher than the Prussian system has to offer. The students and their teacher, Aristotle, engaged in academic discussion while walking

along the cloister (Lynch, 1972). Noticeably, this model offers a very different idea of human corporeality in relation to the academic pursuit. Walking, rather than sitting in a confined classroom setting, offered students a much more liberating experience of education. Similarly, to Walter Benjamin's anti-fascist pedagogical philosophy, the ability to walk is a critical element of educational practice (INPE, 2022). It allows the mind to be distracted from the old patterns of thought and sedimented habits renewing the hemispheric balance.

For Charlotte Mason, the turn of the last century British educator, the idea of study through nature walks and creative journaling is a critical part of education. Charlotte Mason, spent her career teaching K-12 students and instructing the teachers across the British Empire. Her goal was to mend the increasingly automatic and dehumanized approaches to public education instigated by industrialization (White, 2022). Despite the fact that Mason did not have access to lateralization research, nor did she live in proto-fascist Germany, her vision for educational reform perfectly synchronizes with McGilchrist and Benjamin's theories. Similarly to Benjamin, she laments the superficial constraints of compulsory education that harm the mind by restraining the body and halting the creative abilities. Allowing her students to move and be aware of the movement, draw the artifacts found on nature walks, and shun away from propositional mode of learning, Mason's vision for the educational process has the ability to calibrate the hemispheric balance. Similarly to Benjamin, she believed in liberating the body not only for the purpose of physical exercise but as a means for study. One of the necessary conditions for education in Mason's perception is that "children should have a fine sense of the freedom which comes of knowledge they are allowed to appropriate as they choose, freely given with little intervention from the teacher" (Mason, 2009: 74).

Returning to present day United States we find a plethora of schooling options but do they, in fact, offer any diversity from the lateralization point of view. Unlike Germans, American population is offered a school choice. There are a variety of private, parochial, secular, and charter schools in America. Additionally, in 1972, the Wisconsin v. Yonder Supreme Court Decision rendered compulsory school attendance as unconstitutional, opening up the doors to a

myriad of homeschooling methods and philosophies. Researching the students' success in this diversity of schooling options further proves that as long as the process of education occurs within the confines of the left-brain dominant environment, the system does not seem to benefit the student. According to the charter school impact evaluation conducted by the US Department of Education, charter schools appear to be "neither more nor less successful than traditional public schools in improving student achievement" (Gleason, et al., 2010). Research shows that private schools outperform both the charter and public schools according to The National Report Card Public, Private, and Charter School Dashboard (NCES, et al, 2016). This advantage, however, is likely to be attributed to the higher socio-economic status of the families that are able to place their children in private schools that require tuition fees. According to the study by Robert Pianta and Arya Ansari (2018) "by simply controlling for the sociodemographic characteristics that selected children and families into these [private] schools, all of the advantages of private school education were eliminated." Thus, it is not the private education that is responsible for better student's performance, rather it is overall lifestyle choices and privileges that wealthier families are able to provide to the young. Thus, despite the differences in approach to education in public, private, and charter schools, there appears to be little change in the student outcomes. Regardless of how you reorganize the system it yields similar results because the root problem remains unaddressed. The in not in the exact manner of how a left-brained curriculum is organized or scheduled, rather it is in the unquestioned underlying idea that education shall remain left-brain dominant. Interestingly, even the charter and private schools that deem themselves classical fail to depart from the left-brain oriented Prussian system.

What happens if you break away from this perpetuated Prussian model? According to Dr. Brian Ray's (2017) research, home educated students showed higher levels of academic achievement, higher success with entry into college or adulthood, and better social and emotional development. This statistic does not discuss the exact methods of schooling or particular curricula used. However, it suggests that students who are free from a left-brain

charged environment thrive in their academic realm and overall as opposed to their institutionalized counterparts, regardless of their placement in private, public, secular or parochial institutions. Students that have freedom from the seven-hour 180-day-long requirement to be physically restrained by the state imposed, propositional learning system, focused on test performance seem to do considerably better.

Supported by this research, I conclude that the educational crisis goes far beyond academic outcomes. As learned from Benjamin's and McGilchrist's writing, the education may influence the outlook of history. As long as the main question remains to be "will it help the student to do better on the test," the inevitability of academic failure will persist. As long as education remains yield driven it will produce suboptimal results. In his *Norms and Nobility*, David Hicks (1999) remarks that education tends to reflect a base assumption about the nature of men. If a student is imagined as a brain, or rather half a brain, without a body to move, a heart to feel, or eyes the see, or hands to create, then no change of the existing system is necessary. If, however, the student is perceived as an individual, with all of their integral parts, worthy of rights, with diverse interests and creative ideas, then we should reform education in favor of restoring the right hemisphere dominance. I argue that it can be best achieved by pursuit of the arts, and especially by teaching visual literacy.

I argue for an academic intervention that would offer a right hemisphere respite to the students. In his book *Flow*, the positive psychologist Csikszentmihalyi (1990) argues that optimal experience occurs when an individual is engaged in challenging activity that requires skill and therefore concentration, and has clear goals and adequate feedback. He argues that the human mind exists generally in the state of chaos or "psychic entropy," similar to left dominated mind characteristics studied above. This chaos can be molded into a state of wellbeing through *flow*. *Flow* is a state of an individual when fully immersed in the performance of some activity. Being in the flow is associated with mental focus, sense of involvement, and overall enjoyment. Similarly, McGilchrist argues "in our contemporary world, skills have been downgraded and subverted into algorithms: we are busy imitating machines," (2009, p.256)

alluding to the importance of analogue skills. Csikszentmihalyi's idea of *flow* also resonated closely with being in the *element* as an ultimate state of well-being, articulated by Ken Robinson (2009) in his book *The Element,* Similarly to being in the *flow,* being in the *element* occurs when an individual is skilled in an activity while simultaneously being passionate about the creative process. The concepts of *flow* and *element* offer ideal avenues for restoring the hemispheric balance. I suggest the intervention where in order to balance the brain, the intervention participants' experience should be optimized for *flow* and being in the *element,* while remaining visual in nature. The participants should be trained with the goal of visual literacy and placed in an environment where they will be immersed in practicing these skills. The intervention should be optimized for clear feedback without quantitative testing to satisfy all of the aforementioned criteria.

Focusing on establishing relationships is another key for educational intervention focused on balancing the hemispheric function. McGilchrist, Benjamin, Robinson, and Mason all discuss the centrality of relationships in their educational philosophies. Charlotte Mason structures her method around the centrality of relationships in education. In Towards a Philosophy of Education, Mason (2009) states two of her key educational principles: children are born persons and education is a science of relationships. Mason argues that establishing relationships with other people in the community, as well as with a wide variety of authors and subjects through literature is the most holistic way to educate an individual. This idea bridges the gap between myth and fact that Benjamin identifies as one of the symptoms of a proto-fascist education. McGilchrist (2021, p.6) also argues that "relationships are primary, more foundational than the things related." He goes as far as to say that relationships "don't just 'connect' pre-existing things, but modify what we mean by 'things,' which in turn modify everything else that are in relationship with." Thus we can argue that by the means of study — which is relational in nature — we have the potential to transform the world. Studying correct, in this philosophical framework, would allow to positively transform the world by offering a counter-

model to left-brain colonialism. The educational intervention I propose should involve a creative community at its core that would facilitate relationships.

In her relationship centered method, Mason (2009) suggests mimetic instruction in the form of verbal or written narration, as well as picture studies as primary methods of instruction. Even though mimetic instruction dates back to Quintillion and Erasmus, and possibly all the way back to Socrates, Mason prescribes a definitive set of criteria to her style of memetic instruction through narration. She insists that the student engaged in memetic study should not be interrupted, nor corrected and never artificially praised, narrations should be as detailed as the original text, in sequence and in style of the author. Interestingly, Benjamin also states that mimesis allows the body to touch that which is furthest away and thus to overcome difference to produce resonances (INPE, 2022). In other words, through mimesis we establish connections and build relationships, even with concepts, people and ideas that seem far away in space and time. For McGilchrist (2010), mimesis indicates a paradigm shift from the evolutionary necessity for the survival of the fittest to the communal empathy and cooperation within a group. Mimesis, therefore, is one of the defining characteristics of a rational being. While emerging from the need for skill acquisition, mimesis ultimately leads to freedom of choice in regard to what we choose to imitate. This freedom is in part a product of hemispheric balance. Based on Benjamin, Mason, and McGilchrist's theoretical viewpoints, I suggest a mimetic form of instruction for the suggested intervention.

For Walter Benjamin "everyone is an educator"(INPE, 2022). An act of teaching is a natural outcome of a learning process. For Benjamin, an act of teaching is a natural outcome of a learning, therefore a student organically "swells" into a teacher. As the teacher focuses on teaching in leu of learning, they loose the ability to share the natural overflow of ideas, rendering teaching obsolete. Thus, there can be no such thing as a professional teacher for Benjamin, because a teacher is an "awakened manifestation" of the learner, or the learner's "grotesque" form (INPE, 2022). Benjamin's idea is not dissimilar to Vygotsky's depiction of the teacher as the "more knowledgeable other" in his Zone of Proximal Development. The more knowledgeable

other assists and provides guidance in academic growth without a sense of authoritative control normally attributed to the teacher. Lev Vygotsky is a seminal Russian psychologist whose work became the foundation for much of research and theory in the area of cognitive development, particularly in the realm of socio-cultural theory. For Zogatsky, the teacher simply bridges the gap between what is mastered and what is unknown (Kurt, 2020). Similarly to Benjamin and Vygotsky, Charlotte Mason portrays a teacher as a master of a feast of ideas. Mason's teacher is required to have the hunger for ideas and the desire to join the feast. Assuming a strictly didactic, moralistic role, the teacher breaks the relational bond with the student and thus loses their status as a teacher (Mason, 2009).

I would go as far as to say that the reason behind the similarity between Benjamin's, Mason's and these other viewpoints on the role of the teacher is rooted in the Socratic legacy. In the Symposium, Plato reflects Socratic idea that bases all knowledge in the desire for immortality (Plato, 1998). Motivated by the desire to live beyond a life expectancy that is too short in terms of history, minds interact with ideas to birth new ideas. The new knowledge is born as an offspring of the minds. This new knowledge perpetuates the name of its author prolonging the memory of their name in collective consciousness, far beyond the duration of human lifespan. The teacher's role in this process is maieutic. When impregnated by knowledge, the mind of the student is ready to deliver an idea into this world. The teacher comes as a midwife. Knowing the pain of birth and value of its outcomes, a true teacher abstains from controlling didactic methods. Rather, they simply guide the birth of a new thought. My suggested intervention, thus, requires a power-decentralized conduct where each student can play the maieutic role of a "more knowledgeable other" being simultaneously the master and the consumer of the educational feast.

To summarize, I suggest an intervention based on the following key components centered around removing the focus off the left hemisphere dominant propositional mode of teaching with quantitative assessment and redistributing it towards right hemisphere thinking:

- teaching visual skills

- mimetic instruction
- qualitative assessment
- appreciation for human corporality through freedom of movement in space
- emphasizing relationships rather than facts
- undermining traditional student-teacher hierarchy

I theorize that even a limited exposure of 3 hours once a week to this intervention may balance the student's mode of thinking, improve their wellbeing and benefit academic performance.

3. Methods and Approach

Having put together the desired components, I suggest the following procedure for an intervention:

Establishing the Baseline:

1. Two hundred people are needed for this study. I suggest to create 100 people control group and 100 people test group. Each group will be split in 25 people subgroups for the ease of carrying out the procedures. All participants would be 19-25 year-old college / university students. This demographic allows for maximum freedom of scheduling in legal populations.
2. All 200 people, in both control as well as test groups, would pass a baseline assessment. Each 25 people subgroup would be asked to spend 3 hours together in a room with ample free space and no chairs to avoid predetermination of congregation places. A low volume book-on-tape recording of a literary test would be played. No prior explanation or instruction would be given, aside from a 3 hour commitment notification. The layout of the people in the room would be recorded throughout the session for the consecutive drawing assignment verification purposes. Upon the elapsing of the 3 hour mark, the students would be asked to

draw the room indicating other participants, also they would be asked to write down a freestyle narration of their experience. No specific instruction to write down the book-on-tape narrative that was played would be given. The drawings and written narrations would be assessed for accuracy of the recorded details of the room architecture and furniture, including whether the students noticed a book being read and whether they indicated the content of the plot. Special attention would be payed to whether participants recorded any information about others people that they might have gained by engaging in a conversion. Also, the drawing would be assessed in morphological qualities in concurrence brain lateralization research observations. Linear, grid, geometric patterns symbolizing the dominance of the left hemisphere; while organic, curving patterns or the mixture of the two symbolic of proper hemisphere balance, with the right hemisphere being dominant.

3. No feedback to participants will be provided on their assessments.

Intervention:

1. The 100 participants in the test group (subdivided into subgroups of 25) would attend a 3 hour long intervention session weekly for a duration of one college/university semester.
2. Prior to the intervention sessions, all students would be given a five day drawing workshop, instructing them in visual literacy through the perception of edges, spaces, relationships, values and the whole (or the gestalt), following Dr. Betty Edwards' research.
3. Intervention sessions would be held in a room with randomly placed easels allowing students to move freely and construct their own architecture of the room layout, freeing the participants from all sense of physical constraint.
4. During each session two students would be randomly chosen to play the role of the instructors or "more knowledgable other" — the teachers without authoritative control normally attributed to the teacher.

5. The instructors would be asked to come up with drawing exercises on the spot, with two specific constraints. First, all students need to be creating mimetic drawings of other participant(s) with some respect to their corporal visual reality . Second, all participants need to be participating in the exercise. Rather than relying on verbal explanation, the teachers would be asked to rely on mimetic instruction. Duration of each discreet mimetic assignment, quantity of assignments, length of breaks, level of abstraction, as well as other parameters would be left to the discretion of the instructors.
6. The last 30 minutes of each 3 hour long session would end in an open discussion of created images. To start off the discussion, the instructors would select one newly-created drawing to discuss. The discussion would focus on ways in which it is successful, as well as the possibilities for improvement. The author of the piece that was discussed would choose the following piece and the pattern will repeat for the remaining 30 minutes of the 3 hour session. This discussion is presumed to be a strong driving force in building deeper relationships with other people through art work, establishing the proper hierarchy of brain function, promoting wholeness of vision, emotional well being and sense of community.

Assessment:

1. The final assessment would be virtually identical to the baseline assessment, with the exception of mixing up the groups. Selected participants would be put in the group with new 25 people, with no prior participation record. The assessment will take place in a new setting, that is a new room. One participant that completed the series of interventions for the duration of one semester will be placed with 24 new people that have never participated in this study. The rest of the assessment will follow the rules of the baseline assessment.
2. Similarly to baseline, the participants' assessment drawings and written narrations would be assessed for accuracy of the recorded details with emphasis on what level of detail they learned about their social and physical environment during the 3 hours.

3. The final assessment will be analyzed in terms of the intervention efficacy. The efficacy of the intervention will be determined on a scale of qualitative factors that include the level of awareness of others and the environment, how much detail is being gathered —the level of creative output, how much does the participant engage in creative activity, the level of creative complexity (if associated with balancing of hemispheric interplay) as well as visual likeness (assimilated through mimesis), the level of overall comport and sense of well-being found in written portions of assessment, and the morphological characteristics of the produced drawings (prevalence of organic, of diverse line work to be a signifier of calibrated hemispheric balance). Additional attention will be paid to participants' increased awareness of the recorded reading as associated with overall improved state of well being and awareness of others.

Hypothesis:

"The problem is that the very brain mechanisms which succeed in simplifying the world so as to subject it to our control militate against a true understanding of it. Meanwhile, compounding the problem, we take the success we have in manipulating it as proof that we understand it" (McGilchrist, 2021, p3). The intervention participants are expected to break free from the left hemisphere usurpation, becoming increasingly aware of their surroundings in a social and academic sense. The participants are expected to show increased signs of empathy towards other people, greater observational capacity, greater complexity in recording observed details recorded in the drawings as well as increased sense of well-being recorded in the written portion of the assessment. Repeatedly immersed in the room full of strangers with the goal of the visual study of others during the course of the intervention, the participants are expected to be more engaged during the final assessment, having learned to connect to their surroundings with a greater portion of their brain through the visual communication and building of the relationships.

4.Practical and Theoretical Implications

If my hypothesis proves correct, then similar interventions can become a staple in various academic institutions, including, but not limited to higher education. If proven effective, these interventions can help mitigate the left hemisphere dominance in education. These interventions can help students become more aware of other people's emotions, values and beliefs causing greater sense of community through building of normal human relationships within, and not despite, the academic settings.

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