Breathing Room: Time and Attention
Scarcity and the Place of Mindfulness
in a Technology Rich Classroom

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Abstract

"**Breathing Room: Time and Attention Scarcity and the Place of Mindfulness in a Technology-Rich Classroom**"

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Technology has the power to distract us from the troubles of everyday life. Effective media providers harness attention, passing it along, in a digital stream of unreflective stimulation. This brings about the unsettling, yet well-observed paradox that young people seem passionately engaged in meaningless diversions. Mindfulness practices offer one alternative to this type of distraction. Mindfulness is an ancient meditative practice that is gaining popular and scientific support as a proven method of coping with the stresses of modern life while enhancing well being. The aim of this study was to investigate whether mindfulness practices were compatible with a technology-rich classroom environment. We hypothesized that students might only accept the challenge of mental self-sufficiency inherent in meditative practices if they were delivered in the very mediums to which they have acclimated. The study involved the insertion of exercises from a mindfulness app, a video, and teacher-guided sessions, into the daily routine of urban Montessori middle school students. Data was collected through surveys, interviews, video recordings, case studies and observations. We used the data to examine the process by which mindfulness required a sharp break from the routines and usual tools of school but had to accommodate itself to them as well. We found that although students perceived the potential of mindfulness to help them cultivate peace of mind the enterprise played itself out in uneven and ultimately unquantifiable ways. Study results appeared at the mercy of the unique developmental stage of middle school students- they often complained about meditating when we did it, and desired it when we did not. Furthermore, they revealed the promise and confusion of offering mindfulness to adolescents who have a tenuous sense of self to use as a touchstone during meditation in the first place.

Time and Attention Scarcity and the Place of Mindfulness in a Technology-Rich Classroom

Introduction

While driving home from school one afternoon I almost drifted into another lane as I read a digital road sign proclaiming: 'Distracted drivers kill 70 people on Minnesota roads each year.' It marked the start of a campaign to raise awareness of the dangers of cell phone use in the car. The fact that the sign held my attention in a way a regular sign could not also meant that the medium almost subverted the message and caused me to crash. Would this be the fate of a mindfulness program delivered to adolescents by digital means?

Any teacher could be forgiven for empathizing with the predicament of the advertising executive in the current media environment who needs to get people's attention in a shorter period of time**.** In fact, attention is now regarded as currency. As a teacher in a technology-rich classroom the competition for the attention of students has never been more acute. Yet, altruism is the birthright of an educator. The transaction that I deny wanting any payment for is the provision of the means for a student to actualize something authentic about their identity. Mindfulness allows students to remember themselves, to both see their thoughts and see them off, while witnessing the emergence of the limitless backdrop of their own minds. One parent joked during conferences, that after the first week of mindfulness in our class his son came home and shouted, "My teacher, he's trying to destroy our imaginations!" To my relief the father said both he and his wife laughed. I believe they understood that this was just the first step in process that would eventually bear fruit. The boy thought at first we were doing nothing, until he stayed still long enough to see just how much was going on inside his head.

Purpose

The purpose of my action research project was to investigate the effects of an intentional change of pace in a middle school classroom by incorporating technology-aided mindfulness training. The training involved an app, and movement program designed for students that was incorporated into the daily routine. The aim was to create greater 'peace of mind' in individuals that when aggregated created a calmer classroom. A long-term goal was to provide students with an approach to dealing with the difficulties and stresses of life that they could transfer out of the classroom. There is evidence that mindfulness helps students arrive at more positive states of mind by training them to attend to the present moment in purposeful, non-judgmental ways. Also, the development of metacognitive skills that reduce emotional distress may not be a responsibility in the job description of a public middle school educator but its necessity is still perennial. The following questions helped guide the study but also emerged during the course of the study and influenced its purpose:

1) What role can technology play, if any, in fostering mindful students?
2) What effect does the current media environment have on the ability to cultivate mindfulness in students?
3) Does individual mindfulness training help with community-building?

Literature Review

'There's an App for that!' is a ubiquitous phrase now trademarked by Apple. What it indicates is a culture that has looked to simple, user-friendly technology for the solutions to its problems. To illustrate, a mother of two college bound teenagers was concerned about the ambiguity surrounding sexual encounters at many college campuses. She decided to develop an App called 'Good2Go' which is designed to serve as a check-in for young couples enthralled in the heat of the moment (Dewey, *The Washington Post,* 2014). On the App, a question about sobriety is followed by a question about consent.

The enterprise hinges on the assumption that the new generation's passion for technology just may outstrip other passions.

As I read through some of the available literature on the intersection of mindfulness, education, and technology, which is not that voluminous, I thought of this attempt to solve age old problems with our newest tools. Would it be possible to calm some of the confusion and curb some of the impulsiveness of adolescents by using a tool that seems to amplify impulsiveness through random web surfing? In a 1:1 iPad environment there seems to be no choice but to turn technology against itself by programming into the school day designated moments of reflective intention, in other words the deployment of a mindfulness App.

This sudden shift away from the torrent of information and communications commerce, i.e. the web, into an App that attempts to focus the mind upon the presence of itself and surroundings, is a process that has taken different forms in different contexts. Imagine a contemporary Australian Aborigine on a sheep ranch shedding his clothing, picking up his spear, and heading on Walkabout (Chatwin, 1987). Although much to the confusion of the 'disciplined' rancher, the worker has made a decisive and intentional break from the capitalist time structure to attend to some older, and deeper needs- ones that supercede the relentless production cycle that can engulf life even in the red expanses of Australia. I perceive that what is gripping our present society is the endless consumption and production of information and visual data, which denies individuals time and space to strengthen other mental capacities. Perhaps this is behind some of the apprehension of teachers to embrace the 1:1 technology environment.

What is Mindfulness?
As the idea of mindfulness has migrated to the West it has been in the process of being defined. While reading relevant articles I found that the arrangement of words attempting to encompass what mindfulness is falls on a broad spectrum. That a precisely organized row of words cannot be settled upon is a re-current conundrum of Westerners trying to define practices that originate in more experiential Eastern

traditions. As they say, 'he who tastes knows.' The aim of mindfulness might be said to make the mind aware of itself- but what does that mean? The 'eye cannot see the eye' so how do we talk about the mind becoming aware of itself?

In my readings I came across a few admirable ways to describe the qualities of mindfulness and the people who practice it. It could be defined as 'a more expansive view of intelligence,' while 'the mindful individual' is someone who 'seeks out other vantage points'(Sherretz, 2011 p. 81). Mindfulness is also the 'act of giving space to think differently' and 'simply being able to focus on the present moment' (Hornich Lisciandro, 2013, p. 67). The key seems to be using an attentional anchor, and returning to it to create moments of detachment from thoughts and feelings. Detachment may mean not judging them as good or bad. This is a mental shift that allows other points of view to materialize because ideas are not being fixated upon. The idea of being given a 'space to think differently' goes beyond the attempt to just think about thinking which might be a more philosophical endeavor that does not quite provide the 'space' for the sort of clarifying effect mindfulness is supposed to produce.

Most fascinating to me is the idea that mindfulness can allow a student to see clearly a story that they are telling themselves in their head, watch it from a distance and then witness its certain departure as another thought enters. As the adolescent begins forming a social identity the ability to watch thoughts and narratives that are not nourishing him/her come and go seems really valuable.

It is worth remembering that forming a social identity is a process subject to constant change- the identity formed is not some endpoint. This change is a condition that is part of us and that we ought to embrace. One of the best known proponents of mindful living in the West, Jon Kabat-Zinn, writes 'life is always in flux' and 'everything we think is permanent is actually only temporary and constantly changing' which 'includes our ideas, our opinions, our relationships, our jobs, our possessions, our creations, our bodies, everything' (Kabat-Zinn, 1990).

How has it been used in classrooms?

It seems to me that teaching mindfulness more than many other classroom strategies is something that originates from the personal interests and beliefs of the teacher. This is referred to in the literature as the 'indirect' approach or stage where the teacher tries to embody 'mindfulness attitudes and behaviors throughout the school day' (Meiklejohn, 2012). There are not many traditional professional development opportunities that relate to something that so resembles a spiritual practice.   It might even be embarrassing to suggest it be considered in the hard knock world of data and accountability. Embracing mindfulness as a skill used to organize the mind that is as valuable as the ability to organize numbers and letters, binders and lockers, is not something that shows up well on paper. Yet this neglect of students' mental states is exactly what leads to so much unaddressed anxiety for students (Hornich Lisciandro, 2013).

Hornich Lisciandro (2013) decided to teach her students the mindful techniques that she used herself to combat bouts of anxiety. She found that after learning the techniques the students began to request them and approach their work in a different way. What a 'different way' comprised of was; slowing down thoughts, listening, focusing in a non-judgmental way and communicating.   She claims that the quality of her student's work improved. She found that recent studies supported her findings that mindfulness 'is a powerful tool to combat multiple mental and physical disorders' (Hornich Lisciandro,   p. 68). These studies were not specific to classrooms which makes sense given the apprehension with which teachers would attempt to incorporate a practice that requires calmly dwelling in the minds of students within a schedule where 'instructional minutes' and content-related tasks are carefully recorded.

In another qualitative study conducted through observations and case studies of three teachers who self-identified as 'mindful teachers,' the range of what mindfulness in the classroom qualified as extended from relief and inoculation from certain academic anxieties, through the use of mindful techniques, to a whole 'attitude and approach to life' (Sherretz, 2011). Her conclusions were that this attitude allows intelligence to do its

work. It makes sense- what good is being smart if you are racked with stress and doubt and cannot see what choices and options you have?

The teachers in the Sherretz study displayed the qualities of this attitude and it directly informed their teaching. They were process oriented rather than response orientated- meaning the goal was not to lead students to a pre-determined end-point but to make them think. If a teacher is simply leading students to a predetermined end-point, the classroom becomes a river students are washed down at greater or lesser speeds depending on whether they get snagged up on the way. The direction is linear, and the pattern is: question-to-answer. Additional questions and scenarios are distractions and obstructions. The mindful teachers observed by Sherretz invited these diversions as elaborations of thinking that revealed an awareness of the process of learning. I think Montessori would agree to these aims.

This study reminded me that mindful techniques and daily practice are not simply rest stops but steps in a process of cultivating an entire mindful approach to life. That way one can carry on with attempting to be mindful even if they cannot keep up with the formal meditation practice. With a mindful attitude one can be practicing at any moment; even walking to the refrigerator, or getting up to sharpen a pencil can be an opportunity to be mindful (Goldstein, 2014).

When my students walk to the elementary sites where we read stories to the children, the walk itself is an opportunity to be mindful, to notice the weather, the neighborhood, different sounds, and their breath. If the concept of mindfulness can be registered within them through techniques learned on the iPad maybe it can eventually carry over to moments of mindfulness caught 'out of the blue sky' as they say.

One educational approach, the Montessori, seems to have nested within it many of the qualities that mindfulness training seeks to foster. From the earliest stages Montessori education 'begins with grounding in sensory experience via motor movement' where

children are encouraged to pay careful attention to how they are moving through and sensing their environment (Lillard, 2011).

Has mindfulness been cultivated with the aid of technology?
One model of a 'new' technology being used to promote some of the aims of mindfulness was on a Hopi Indian reservation. The author used a radio program to promote 'whole-person health' in accordance with the Hopi world view that it is their duty to maintain harmony in the universe and within themselves (Nelson, 2003).

The songs and stories, used for hundreds of years to maintain a sort of psychological balance in the minds of tribal members, were in danger of being crowded out in the new media environment. Yet to tribal elders, stories were true medicines, as important as herbs and prayer, and needed to be disseminated one way or another. By using the radio program to teach some of the old stories and lessons the tribe has been able to ensure the continuity some cultural heritage.

As I prepare to offer the students a chance to practice mindfulness on an App, I wonder whether the message can be separated from the medium.   I also wonder if it matters or is necessary. What makes mindfulness different from the 'focus' a young boy has while playing a first-person shooting game? After all, there is certainly an intensity, singularity of focus and heightened sensory awareness occurring during these gaming sessions. He is seeking out different 'vantage points'- it's just that it's for the purpose of shooting someone. One evaluative study I read looked into the effect of the informal learning environment which was defined as what is learned from the media that is supposed to be entertaining but not necessarily educational. This includes any T.V., internet use, video gaming or radio use. In the reviews of a few studies the author determines that visual-spatial skills have been increasing due to the media-saturated home environments of most students. This is good because it lays the foundation for knowledge acquisition in school (Greenfield, 2009). What is yet to be determined is whether this is at the expense of other skills.   One indicator is that older technologies such as print and radio seem to have some advantages in cultivating higher-order

cognitive processes such as; abstract vocabulary, mindfulness, reflection, inductive problem solving, critical thinking, and imagination (Greenfield, 2009). If an impressive visual intelligence comes at the price of deep processing and mindful acquisition of knowledge is that a trade-off we're prepared to make as society? We can handle visual stimuli as it is a skill demanded of us by our environment but do we have the time or skill to do much else with it?

The common criticism of social media is that it fosters false intimacy and in this case I wonder if these impressive visual-spatial skills, that a child develops over years of video game play even before even going to school begins to foster a sort of false intelligence. A video game player will be well suited to control a drone flying in Afghanistan from a trailer parked outside of Las Vegas, but will he lack the ability to reflect or do any critical thinking about why he/she is doing it? As Montessori incorporates a Peace Curriculum, skills without an awareness of what those skills might be employed in service of, is not a sustainable situation for our species..

A different sort of question is raised in a New York Times article about whether reading your toddler an e-book is the same as a paper and ink book. Beyond nostalgia does paper and ink have an advantage? Again, as with the advantages of print and radio, the constraints of the older technologies seem to be their strengths. More imagination is needed to process print and radio than other mediums. The worry in this case is that the dialogic effect of traditional book reading is diminished with e-books that read themselves to the children. Technology is a liability when it flexes its muscles just because it can. The 'bells and whistles' might merely distract from the story and lessons that can be learned in the unplugged exchanges with the adults sitting with the child and responding to the child (Quenqua, 2014).

This article was relevant to me because, as I select a mindfulness App to use, I want to make sure there are constraints built into it so students spend energy on the exercise and practice of mindfulness not the managing and viewing of spectacular features. Thankfully this very quality is what leads many people to want to use Apps for

everything- they are simpler than the elaborate desktop systems. What appeals to people is the truncated set of tasks that the App can do. The constraints of the App make using it comprehensible, and the need to close it and use a different one can be determined with greater ease. One conceptualization of mindfulness for the modern student would be that it provides a way to close all the different applications that are open and running. These 'apps' are taking energy from them- including various storylines in video games, and interactions on social sites. It could allow them to close these and return to the 'home screen.' From this vantage point, they may be able to see clearly what choices they have, and what they really want.

There is another possible disadvantage of using electronic technology to foster mindfulness instead of a living, human guide that may reveal limitations and intern unintended consequences in the endeavor. Also, bear in mind that the human guide may even take the form of the students themselves in the case of self-guided meditation. Hani Morgan, in her article on the advantages and disadvantages of handheld devices, mentions a study by Hall and Hall (2010), which explains that people communicate through facial expressions, tone of voice, bodily gestures, and even how near or far they stand from each other. These are not the types of qualities that can be readily adjusted when one is using a mindfulness app or video recording. Based on the situation, and mood of the class, how flexible can a teacher be with a mindfulness lesson that is prepackaged in an app?

The other potential pitfall of using technology is that if students overuse digital devices, they may be less responsive to lessons that cannot be delivered via digital means (Morgan, 2010). One might suggest that only an apocalyptic scenario would deprive us of our beloved devices at this point- but is there any merit in sustaining and cultivating a student's ability to receive instruction in a form unmediated by technology?

What of those 'lessons that cannot be delivered' through technological means? What are they and just what is it about them that requires another human being? More relevant to my research is the question, what mindfulness exercises cannot be

satisfactorily transmitted any other way except from human to human contact? Hall and Hall (1986) suggest that 'even when one is alone and talking to oneself, there is a part of the brain that speaks while another listens' and that 'in all conversations, the listener is positively or negatively reinforcing the speaker all the time.' Does staring at an app or being stimulated by following along with exercises on a TV allow for the meta-cognition that mindfulness asks for? The peace of mind that ensues during mindfulness practice may result from finding ways to let these conversations take place without judgment. That may call for a conscious effort to refuse to label thoughts as good or bad. Knowing that even while alone one is taking nonverbal cues about the quality of the conversation, and its likely direction and duration, may grant one the space to ignore them. After all, they are only thoughts and do not know everything.

Conclusion of the Literature Review

The questions that drove this action research are those that I have been unable to find a satisfactory answer for and/or would like to explore further. They also reflect my attempt to address a personal concern with my biases against technology that does not serve the digital natives that inhabit my classroom.

> 1) What role can technology play, if any, in fostering mindful students?
> 2)What effect does the current media environment have on the ability to cultivate mindfulness in students?
> 3) Does individual mindfulness training help with community-building?

Methodology

Participants and Setting

This small-scale qualitative study took place within a large, urban Montessori middle school in the Midwest.   The school enrolls over 500 6th through 8th graders. The students identify themselves as follows; American Indian 1.4%, Asian American 31.3 %,

African American 31%, Hispanic American 13.5%, Caucasian American 22.8%. There are currently 23.9% students receiving Special Education services, 31% of the student body are English Language Learners, and 77.5% qualify for Free and Reduced Lunch.

Students belong to one of three pods at the school that serve as smaller learning communities. There are roughly 170 students in the pod where this study took place. Of these, 85 students were students in the three 75 minute Social Studies blocks that participated in the study. Their classroom teacher facilitated and conducted the action research on the interaction of mindfulness and technology in the classroom.

The school is fed by three Elementary Montessori programs and the rest of the student body consists of students from the surrounding community. The ratio of students who have had some experience with the Montessori method is about 50%. Students who have a formal IEP, or are designated ELL are supported by staff inside the classroom.

Materials

Before the exercises in mindfulness began individual areas of the classroom were marked with numbers. Each student was assigned an area which was referred to as their 'mindfulness spot.' Whenever an exercise was about to begin students were invited to walk to their 'mindfulness spot.'

The app used was developed by 'Smiling Mind', an organisation based in Australia. It is a free program developed by psychologists with expertise in youth and adolescent therapy, mindfulness meditation, and web-based wellness programs. It presents itself as modern meditation for young people. The app consists of a structured program of exercises that are designed for different age brackets. The program used for the study was for youths age 12-15 years, of which lessons 'Mindfulness 101' through 'Mindfulness 106' were presented.

The video program used was 'MeMoves', a program incorporating movement, music, and emotion to help children deal with stressors in their environment. There were three areas, 'Joy,' 'Focus,' and 'Calm', which had five difficulty levels each.

The lessons guided by the teacher were taking from <u>Planting Seeds: Practicing Mindfulness With Children</u> by Thich Nhat Hahn.

Procedures

This study was initiated with a Mindfulness Pre-Assessment conducted on student iPads which included the following questions:

1. What do you think of when you hear the word 'mindfulness'?

2. What is 'meditation'?

3. Who do you think meditates?

4. Why do you think people meditate?

5. Do you think meditation could help you? How?

Before the first session students were invited to find their 'mindfulness spot' and were then read a brief introduction to the practice of mindfulness from the book <u>Planting Seeds: Practicing Mindfulness With Children,</u> Beyond occasional episodes of side-coaching from myself during exercises this was the only time mindfulness was defined in an explicit way. The intention was to observe whether students would discover the supposed benefits of mindfulness on their own without too many prompts that might condition what it was they were supposed to be experiencing.

The 'Smiling Mind' and 'MeMoves' exercises were cued on the 70 inch classroom screen and played either during the beginning, middle or ending of class until there was a consensus as to what time was the most effective.   Each exercise lasted from 2 to 7 minutes after which students transitioned to independent work time.

During these sessions I would make observations of the class in general and 2 students selected for case studies. The students were known to have varying degrees of difficulty remaining either quiet, calm or still for significant lengths of time. Periodically I would make video recordings of students performing the exercises for later analysis.

Nearing the end of the study I administered 'Mindfulness Survey' which included the following questions;

1. Do you like doing 'MeMoves' or 'Smiling Mind'?

2. Is it easier to focus when there is a video or voice recording leading the exercises or when the teacher leads or reads from a book?

3. What is going through your head during Mindfulness training?

4. Does doing the exercises help you during class in any way?

Findings and Discussion

Limitations

Early on it was decided that independent mindfulness practice on the iPads would not be feasible. Although students each had iPads, at any given time there were a number of them that were having issues with their App store which would have made it impossible for them to download 'Smiling Mind' for themselves. There was also the issue of timing and space. Even if students were allowed to listen to a lesson as part of their daily checklist work anytime during independent work time, the rest of the environment might not have been conducive to meditation. A student may have had ear phones, but the amount of other movement and talking would have been unpredictable. The endeavor became a communal one for reasons related to behavior management and technical obstacles. I would play the lesson on the big screen TV and students would all do the lesson at the same time.

Mindfulness Pre-Assessment

The participants first contact with the study was not necessarily their first interaction with the idea of mindfulness. The Pre-Assessment demonstrated that many students had either absorbed some notion of the concept or had an intuition about it based on the parts of the word, 'mind', 'full', and 'ness'- the condition of being in a 'state of'.

The ubiquitous 'IDK', (I don't know), which appears on many adolescent papers whenever an unfamiliar term is introduced, was surprisingly absent from any of the 80 responses.

Below is a sample of some responses that illustrates the range of answers to the question 'What do you think of when you hear the word 'mindfulness'?' Some students looked inward and others looked outward. Many app and game developers have noted recently that people are more interested in the social features of games- the ability to collaborate and chat- more than the game itself. The networking and social dimensions of technology would seem to jeopardize the aim of using it to 'look inward' and to get students 'thinking about thinking'. Inadvertently, the Pre-Assessment, which was completed using the Socrative app, showed that the constraints of a given technology may well determine its usefulness in fostering mindfulness. Thoughtful, reflective answers on mindfulness arrived via student iPads because of the preference and comfort students have typing on their devices. Below are some examples of 'inward' and 'outward' thinking:

Inward looking comments:
"I think about my brain and me...just me and my mind alone in a place."
"Let out mind, be calm, be still."
"I think of 'Solo Time'."
"I think of blank stuff in my mind."
"What is going on with my mind?"
"Peaceful, calm, and a blank mind."
"Trustfulness."
"Thinking of a lot of things."
"Smart."
"I think of awareness, or being aware of my mistakes."
"To control your mind."
"Mindfulness means to think."

Outward looking comments:
"Maybe, kinda, being nice."
"Thinking of others- trying not to disturb others."
"I barely hear mindfulness- only when the yoga teacher comes to my class on Mondays."
"I think of people being considerate and doing the right thing."
"I think of being mindful of your surroundings."
"You have to watch what you say depending on where you are because it could offend someone."
"A 90's boy band."
"I think of an open-minded person."
"Mindfulness is a positive word."

Many app and game developers have noted recently that people are more interested in the social features of games- the ability to collaborate and chat- more than the game itself. The networking and social dimensions of technology would seem to jeopardize the aim of using it to 'look inward' and to get students 'thinking about thinking'. Inadvertently, the Pre-Assessment, which was completed using the Socrative app, showed that the constraints of a given technology may well determine its usefulness in fostering mindfulness. Thoughtful, reflective answers on mindfulness- as defined as answers beyond 'I don't know'- arrived via student iPads because of the simple and clear design of the Socrative app as a tool for bringing student understanding to the surface. A small segment of participants had to take the survey on paper and contributed answers that were as complete as those given on iPads. Technology in this case, while it may not have fostered any increase in thoughtfulness, at least did not hinder students.

Other data from the Pre-Assessment presented a student group of which a majority did not initially view themselves as people who might engage in meditative exercises. In answer to the question, "Who do you think meditates?" there was a significant feeling that it was something done by "monks", "a sensei", "Asian people," "people that want

peace and love", "yoga people", "people in certain religions," or "stressed out people". The names of teachers at the school that "give off" that impression were also listed. About a quarter of participants gave self-inclusive answers such as "everyone", "anyone", "me, I think", "the body/brain," and simply "people."

The final question was the most personally direct and brought forth the most tentative answers of the survey but also some strong affirmations about the potential of meditation to help in some way. In response to the question, "Do you think meditation could help you? How?" A handful of students, 11%, were understandably non-committal about its usefulness to them. The question stirred the largest number of responses that were variations of 'I don't know', while 16% did not see any way meditation would help them. However, it was not surprising to see students perceiving some benefits given their apparent familiarity and intuition about meditative practice demonstrated in the survey's previous questions. Nearly 73% of students believed meditation could help them and offered the following explanations:

"I think meditation could help me by giving me happiness."

"It might help you act for a play...or practice for a test."

"Yes, because it help your health and care for your body."

"Yes, because you can relax from stress."

"Yes, because I have ADHD and the littlest things irritate me."

"Yes and no because the poses are weird and distracting."

"Yes, I need peace and quiet to hear myself thinking."

Mindfulness Spots

Students did not resist the idea of having designated 'mindfulness spots' spread throughout the room. As the weeks went on I would occasionally find friends clumped together which would lead to less focused sessions. What is worth mentioning about this set up was the message that it sent: that an intentional and particular 'space' and 'time' needed to be carved out for this type of work. However, on days where these 'spaces' dissolved into each other it did not matter that 'time' was allocated. For

students who surmised that 'time' was being squandered on meditation even if they occupied their spot they were not necessarily present within it.

Smiling Mind App

The 'Smiling Mind' lessons were used 2-3 times a week over a 10 week period. The video program 'MeMoves' was used the other days. The structured format of the 'Smiling Mind' program made it an ideal app for use with students beginning their practice. The length of the lessons increases as does the complexity of the exercises. 'Mindfulness 101: Exploring the Breath' is the first in the program and lasts just under 7 minutes while 'Mindfulness 107: Exploring Thoughts', the last lesson we completed for this study lasts a little over 10 minutes. Each lesson had a subset of shorter exercises and the 'Daily Mindfulness Guide' which was designed as a way to upkeep basic breathing techniques as other aspects of mindfulness were explored.

There were logistical benefits to using the app. As a teacher with limited planning time even carrying out this action research would have been in peril without the prepared mindfulness lessons. Therefore, I could use my energy to keep mindfulness on the agenda day after day and manage behaviors that interfered with preparing the space as one where meditation could occur. Since I was not leading the lessons I was able to circulate around the room as necessary and have a short amount of time to make some observations.

In the Mindfulness Post-Assessment 58% of students preferred meditating using 'Smiling Mind'. A recurring rationale for students was that it helped them be more "calm," "focused", and "relaxed," and "it works better." The latter surfaced as goals for students as they were words often repeated by the guide, and when they felt that this occurred for them the meditation "worked." A few students also commented on how the longer sessions allowed them "time to think." Another student believed it was "more advanced than MeMoves." Others suggested that 'Smiling Mind' was "less distracting" and that it was better because "people talk a lot" during 'MeMoves' and for this one "everyone is silent."

A number of students admitted that they liked "to sit", and 'Smiling Mind' provided this opportunity. I would argue that that is just what they do all day but the dimension of mindfulness meant that they were aware of sitting which brought an added sweetness to the act. Obviously, whenever they are watching TV, or on their devices they are sitting. Using technology through 'Smiling Mind' to alert them to the act of settling into a spot would be a clear example of technology being flipped from a tool that distracts and dulls the senses to one that refreshes them. One student was adamant about the benefits she was perceiving, "Because **I** am calmer that way. I **feel** calmer and it may help with my focusing problem" (emphasis was the students.)

MeMoves

MeMoves was incorporated into the study in order to add a meditative practice based in body movement to supplement the stationary exercises of 'Smiling Mind'. The practice, which involves music and movement, would have been difficult to coordinate on my own. The students were able to contrast this style of meditation with the other and bring students awareness to the availability of many types of meditative practices.

In the 'Mindfulness Post-Assessment' 35% of students liked doing 'MeMoves' over 'Smiling Mind'. An element that was not present in 'Smiling Mind' was fun. Although it was never explicitly mentioned in 'MeMoves' it was implied that meditative work can be 'fun' because many of the demonstrators in the video were smiling and laughing while they did the movements. These visual cues, available because they were on a 70-inch screen, signaled to students that 'fun' was a legitimate part of the process and quite possibly one of its goals. Sitting during 'Smiling Mind' was apparently unsettling for a few students: "I don't like sitting in silence. 'MeMoves' is fun." The word "boring" appeared a few times as a criticism leveled at 'Smiling Mind' that 'MeMoves' was spared. One 7th grade boy said frankly, "Smiling Mind is slow."

Many other students simply enjoyed the movement for its own sake. They were reminded that they have a body and that it had been neglected through most of the day.

As students put it; "we get to move around", "we get to move body," and "I can stretch." One girl wrote, "it gets blood flowing, I mean we sit all day."

Case Studies

During both 'Smiling Mind' and 'MeMoves' sessions I focused on 2 students, each with considerable challenges participating in class activities, staying still and focusing. Meditating was difficult for many of the well-adjusted students so I wanted to see its effect on students having trouble dealing with the routines of school.

Case 1: Diana

The first student I will call Diana, an 8th grade student with a penchant for defiance and disrespectful outbursts towards teachers. Over the 10 weeks Diana refused more times than any other student which made the instances when she did worth noting. What was interesting was that the majority of the time we were practicing mindfulness she preferred to start her checklist work instead of participating. She became irritated that we were 'wasting time' on this when there was work to do. Other times she was on her iPad using social media. Early in the study she would often look up and make comments about the lesson. Responding to the guides instructions to lie down and put hands on your side she said, "I don't do that." Another time, during a listening exercise in 'Mindfulness 102: Exploring Sounds', she responded "In your mind? What?" when the guide spoke about processes going on in one's mind.

Diana betrayed herself, and exposed her incidental participation when she said during the same listening exercise, "Why y'all breathing so loud?" The fact that the guide was a recording that did not take offense or give attention to the negative comments meant the exercise kept moving forward despite these comments. A benefit of using technology then would be that the digitized guide can be said to have control over emotions because he had no emotions. Opposition, and the frustration that might bring a live guide, were immaterial in this case.

During the 3rd week of the research period Diana decided one day to participate by announcing, "I'm going to do this," and "Are you going to mark me for participation?" She commenced to lay down and put her hand on her stomach to feel her breathing as the guide instructed. After this point the variety and more challenging mindfulness exercises

The 5th week was 'Mindfulness 104: Exploring Taste' which involved students slowly observing and experiencing the tasting of a single chocolate chip. When I came around to offer Diana her chip she said, "What the fuck is this?" and was sent out to take a break for the rest of the exercise. The novelty of this exercise caused a stir in general as when the class erupted in laughter when the guide asked them to put the morsel of food up to their ears and "listen to it."

When we did 'Mindfulness: Exploring Emotions', Diana again revealed the fact that she was tracking the guide while she was doing her checklist work by loudly asking the class towards the end of the lesson, "Do you feel relaxed?" This phenomenon of the lesson acting as a kind of background noise that is quietly making demands of those within earshot attests to the quality that technology brought to the proceedings: teachers often practice ignoring negative behavior or try to avoid power struggles, both of which are issues I did not have to contend with. As long as I did not press 'pause' the recorded Australian man was very adept at ignoring negative behavior. For a student like Diana, who was not actively participating this amounted to the only exposure to the ideas of mindfulness.

When we did 'MeMoves' the visual information often inspired interaction from Diana starting from the first day when she claimed one of the demonstrators looked like "Mr. Lofton", one of the math teachers at our school. One day their was the following cascade of comments as the multi-racial cast demonstrated moves from Level 3 of the Focus section; "My arm hurts," "My grandbaby"(about a kid demonstrator), "My arm is tired", and "Get it girl"(about a teenage African-American demonstrator.) The fact that a

diverse group of presenters is possible using a video was an unforeseen and extremely important discovery made while playing 'MeMoves.'

Diana continued with her pattern of sitting and doing work and was vocal about her worry that there would not be enough time to finish assignments. When Diana joined in she made sure she had my attention and said, "You see me- I'm doing it." The same session she said that one of the demonstrators was "smiling at me." This was another indicator that Diana was relating to the demonstrator in a way that was perhaps different than with me. She was worried about the participation points with me, while it is hard to say what prompted her to imagine the woman was "smiling" at her- unless it was the fact that she was an African-American. If so, it suggests that technology allows mindfulness to be presented as an endeavor that has practitioners in all the skin tones of a diverse urban classroom.

Case 2: Cy
The second student in the case study I will call Cy, a 7th grade student diagnosed with ADHD. Nearly every session Cy would attempt to participate. During 'Smiling Mind' he would often begin in his 'Mindfulness Spot' but then get up and wander before sitting in a chair or laying under a table, which seemed to help. Often he would be tapping or fidgeting with cords under the table but actively listening. Occasionally I would find him in his spot playing games on his iPad which he had smuggled over from his table. After week 5 Cy seemed to settle on a spot on a carpeted bleacher in the room. One of the first lessons that he stayed in one spot was 'Mindfulness 102: Exploring Sounds'. Three days after this he was settled in his new spot but was making comments. After his peers complained about being distracted he stopped, put his hands on his stomach, and was quiet. Once a week a social worker, hired by Cy's family, would come in a sit with him. Whenever he was present and sitting next to Cy at his place he was much more calm.

During 'Mindfulness 104: Exploring Taste' Cy became very animated and was smiling and asking, "Are we eating now?" He was wiggling his tongue, making slapping noises

and other sexualized gestures. I spoke with him about watching his limits but began to wonder about making too harsh of a judgement. After all, becoming aware of yourself, paying particular attention to your body and senses in a way that had maybe had never been done before could naturally lead to this sort of sensualisation, especially for an adolescent. Many of the lessons of 'Smiling Mind' encouraged the appreciation and enjoyment of the basic functions and parts of the body. The guide asks for participants to give thanks to their lungs for bringing in breath, and legs for moving one around all day, and so on. One thing that tablets, smart phones, and laptops do are dis-embody people, localizing attention in the eyes and head. Mindfulness brings awareness back to other forgotten parts of the body. At any rate, this line of thought seems to be a danger zone as far as looking for reasons to support mindfulness in the classroom but it may, in reality, be a condemnation of the extent to which the whole person has been alienated in the traditional classrooms.

For Cy, the movements of 'MeMoves' provoked repeated inappropriate expressions. The exercises, no matter if they were under the category, 'Calm,' 'Joy,' or 'Focus,' seemed to agitate Cy. After the first session he asked, "How does that calm you down? I'm more hyper." Another day, after 'MeMoves: Calm Level 2', he pronounced, "I'm not going to be able to work after word." However during 'MeMoves: Focus Level 3' one of the most difficult group of exercises, Cy went straight to his spot and was concentrating the whole time without any inappropriate comments. This was during week 7 of the study. Again though during week 9 he asked, "How does this calm me?" before doing Karate Kid impersonations, "Wax on, Wax off" to some circular movements being demonstrated. The music, demonstrators, and computer generated graphics meant to instruct how to make the movements might have been overstimulating to Cy. This is a pitfall of using technology. The ease with which media can be combined leads to 'bells and whistles' that could crowd the mindfulness experiences being offered. This appeared to be the situation with Cy. 'Smiling Mind' with its stillness, single voice and simple music would appear to be ill fit for someone as active as Cy but he recognized it as more likely to calm and focus him than 'MeMoves.'

Results and Interpretations

1) What role can technology play, if any, in fostering mindful students?
In the Mindfulness Post-Assessment 80% of students said it was 'easier' to focus on mindfulness exercises presented through some form of technology. Only 14% of students preferred teacher led mindfulness exercises without any technology. One of these students explained that he preferred the teacher because he was "used to his voice." One is reminded of a running joke teachers make where they claim students would pay attention to instructions if they videotaped themselves giving them instead of standing in front of the class. Below are some of the rationales for what made 'MeMoves' and 'Smiling Mind' better for the students then any exercise I led. Many of the rationales had to do with simple production values- the "sound is better", "more loud," or more "clear"- while others had to do with the actual quality of instruction.

"When Kareem reads, there are more distractions."
"I like watching videos more than hearing people talk."
"Because that British dudes voice is calm."
"There's music that calms us which is better."
"The instructor on the video is more detailed."
"I'm a lot more focused when it's from video."
"Because Kareem is always talking and it gets annoying."
"Hard to explain."
"I just like this better for some reason."

Since we indeed did use technology the majority of the time, the real question became not whether technology could play a role but whether students actually felt mindfulness training, with the aid of technology, was helpful. The study was undertaken under the assumption that encouraging students to be more mindful would be a positive thing for them. Technology, deemed the easiest mode of accessing mindfulness, emerged as the most promising facilitator of this aim based on the results. As to whether students felt mindfulness was 'helpful' the numbers were mixed. Nearly 45% of students said

"yes," with 42% saying "no," and 8% answering 'sometimes' or 'it depends' and 5% admitting that they "had no clue" or "were not sure."

If a student had a specific goal or transaction in mind that would occur as a function of practicing mindfulness and found that this goal was met after the sessions they were more likely to have answered "yes." One girl decided mindfulness should help her get her "work done" and it did so she answered in the affirmative. Others along this line believed it helped them "focus" on work so felt it was a helpful item on the agenda. These types of comments revealed an underlying assumption that it was not a worthwhile use of time unless it was in service of what they really needed to be working on. Many saw becoming "calm" or more "relaxed" as goals and were satisfied when these conditions ensued after the sessions.

One student wrote that it allows her "to relax before doing work." This is the 'breathing room' referred to in the title. Students find all kinds of ways to not work, and get their needs met for socialization or breaks by sharpening a pencil, going to the bathroom, or asking to see the nurse. The value of dedicated and conscientious time put aside to take care of the mind is present in this girl's comment.

Students with a fixed idea about what they were supposed to get out of mindfulness and did not, represent many of those who answered that it was not 'helpful.' If a student believed that their troubles or their "mind" would be blank or totally cleansed in some way were disappointed. One girl answered, "ehh...not really because the thoughts are still in my head." Others who expected to be "calmer" or "relaxed" afterwards in more lasting and tangible way were frustrated answering more than once that they were "still" one way or another. A girl who answered "no" elaborated by saying, "I will eventually get hyper again which is why I get annoyed because it doesn't help."

Immediately after 'Smiling Mind' ended I would hear comments such as, "I'm still as stressed out as I was before this." One reading of this would be that the exercises were

still a success because the student became aware of the stress present in their body and mind and the pressures that it was generating.

A student who is often absorbed in her work from the start to finish of any block of work time answered, "I like concentrating on my own." This was a genuine acknowledgement of the sort of naturally occurring mindfulness that can be cultivated in a Montessori classroom. One that does not posit a separation between the work of the mind and body. Meaningful work, in which a student enters a state of "flow," does not emerge from a system of education that demands getting used to drudgery because that is what one might expect when one hits the working world.

2)What effect does the current media environment have on the ability to cultivate mindfulness in students?

The opportunity costs of doing one thing and not the other is seemingly expanding exponentially. The cost of doing nothing, which concentrating on breathing often seemed to students, was simply too high of a price to pay. Again and again, the notion of "wasting time" arose during exercises. Here are some responses from the survey:

"It helps us focus but is uses class time."

"It just takes out work time."

"In a way I think it is a waste of time because it takes part of our work time away."

"I see it as a waste of time. It's the truth."

"Sitting there doing nothing."

If the current media environment engenders any attitude or dispositions it is that whatever it is that one wants to see, do, or experience, it should be able to happen quickly. Since it is information that is being consumed in the greatest quantities students have become accustomed to the modes by which it is consumed- with a few quick taps of the finger here and there on their devices. An article in 'The Economist' magazine points to the quality this situation develops in people; "The ability to satisfy desires instantly also breeds impatience...People visit websites less often if they are

more than 250 milliseconds slower than a close competitor, according to research from Google. More than a fifth of internet users will abandon an online video if it takes longer than five seconds to load."

It is safe to say that this type of environment, and the way technology is used within it, is not conducive to cultivating mindfulness. The often indeterminate goals of mindfulness exercises, the non-judgemental aspect, and the slowing down of time that breathing exercises demands, was literally taxing for many of the students. If 'attention is the hard currency of cyberspace' as suggested in Thomas Mandel and Gerard Van der Leun's 1996 book, The Rules of the Net, as digital natives the students felt that they were either losing money or paying money- through their attention- for something they did not as yet value. Despite this assessment contradictions tumbled in as students who professed that mindfulness was a waste of time, and checked their phone numerous times during it, turned around at conferences without provocation and told their mothers that mindfulness was something "that helped" them.

3) Does mindfulness training help with community-building?

A few impressions and anecdotes from during the course of the research point to many benefits to community-building that arise from mindfulness practice. The most striking example came after a very disturbing classroom incident. A student attacked another student and in the process of breaking up the fight the aggressor turned his anger on me. After screaming and cursing in my face the student pushed his binder into my face before storming out. Although none of the students said anything I believe they were very troubled by the scene. The rest of the hour progressed until there was about 10 minutes left. At that point a girl asked if we were going to do mindfulness today. Other students heard her and said it was a good idea. We took a vote and everybody wanted to do it. One student remarked, "This is one day that I'd actually like to do it."

 After a session of 'Smiling Mind' I asked students to write a short reflection on their experience with mindfulness that day. The girl who suggested we do it simply wrote,

"Calming. Don't like the feeling of out of order. Used to doing it every day." However other comments hinted at its role in coping with the incident such as this one, "It was very calming because we had a long day." 'Long day' was a code word as far as I was concerned especially because this was written by a 6th grader who looks up to the student who assaulted me.   A third student wrote, "I requested it because I thought that we should've relaxed from a tiring and exciting day." A couple students mentioned stress, "it takes all the stress away" and "it helps you go through stressful times." One student said that it "made me calmer." Without saying it I believe many of these students turned to mindfulness that day as a way to soothe themselves and somehow repair the jolted atmosphere of the community. As the 6th grade boy left the classroom he said, "Mindfulness was actually good today."

On days when we skipped mindfulness there was usually one or two people who would ask about it after some time passed, as if the question sort of emerged out of some space and time within them that was put aside but not put to use.

Conclusion

Technology has the potential to aid in fostering mindfulness but the two are still an awkward match. One student said it best when she wrote after the first day of 'Smiling Mind', "It was peaceful and it felt ridiculous." There they were, listening to a recording of a man with an Australian accent walk them through what was likely to be one of their more intimate and intentional moments with their own minds that they had perhaps ever experienced. Although the hunger for students to remember themselves, be quiet, and observe their own thoughts, is real, it is competing with a media environment that relentlessly pursues their attention. The following research findings by Thales Teixeira, a business professor at Harvard is an example of the attention premium of the digital age.

"...in 2010 the price of an American's attention was six cents per minute. By 2014, the rate had increased by twenty per cent- more than double inflation. The jump had

obvious implications: attention- at least, the kind worth selling- is becoming increasingly scarce, as people spend their free time distracted by a growing array of devices" (The New Yorker, January 19th, 2015, pg. 58)

 A Montessori middle school, tasked with guiding adolescents through an emotionally uneven time while the ability to do critical thinking is also emerging, does have a responsibility to equip students with specific practices. Practices that allow them to both step back from the tumult of their interior worlds and the fury of the unending executive actions that maintaining an online social life requires. Yet, students at this stage are unlikely to respond as well to endeavors that do not include at least a minimum of electronic signals. Technology, which allows students instantaneous means of accessing information and communicating with friends, is indeed a strange mirror of the practice of mindfulness. As defined by Jon Kabat-Zinn, mindfulness is 'the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment' (Kabat-Zinn 2003, pg. 144). The issue is that one mode of being absorbed in the moment draws an individual away from themselves with no map to return, while the other uses the simple touchstone of one's own breath to always find a way back.

Action Plan

As civilization advances there comes a need to make wildlife sanctuaries and set aside parkland and conservation areas. The same is true for our interior lives as media companies, advertising executives, and the like make claims on our attention. Of the three fungible resources that people have, time, money, and attention, attention is the one that is currently being divided up. Time and space must be put aside to nurture the health of the mind and give it our full attention, teachers ought to help with this, and if the tools to do so are packaged as apps and videos so be it.

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Appendix A: Students at 'Mindfulness Spots' with 'Smiling Mind' app on the TV.
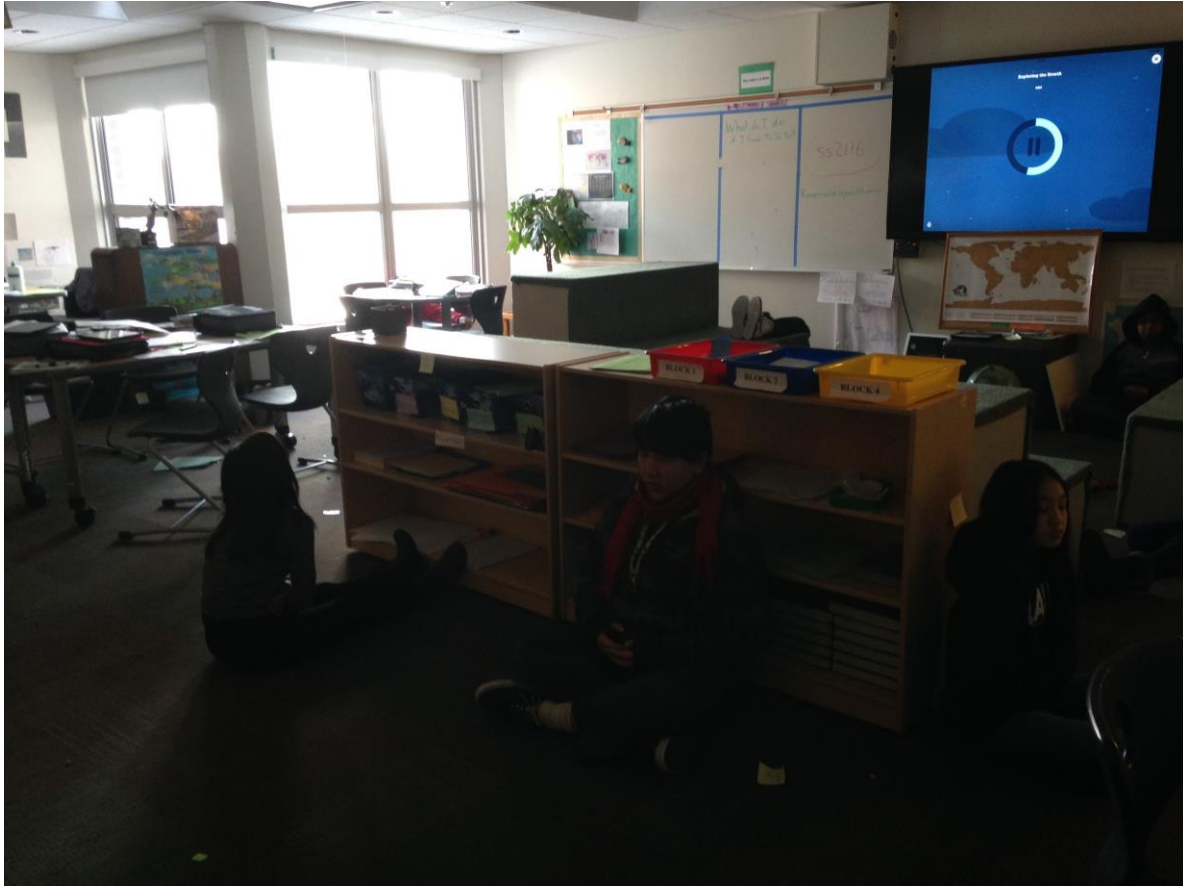
Appendix B: Students Doing 'MeMoves'

Appendix C: Permission Letter

Middle School
Large Midwestern School District

January, 2014

Dear Families,
 As part of a continuous mission for best teaching practices, I will be doing an action research project in the classroom. I am working toward a Master's Degree in Montessori Education, and as part of my course work, I am doing an action research project which entails analyzing the results of strategies I use in class to support children's learning or other styles of teaching that best supports your child's learning style.

In the following months I will be having the students learn a variety of mindfulness techniques. These are exercises that people from all around the world use to help relieve stress and find peace of mind. We spend a lot of time teaching children how to organize their 'stuff' but not a lot of time on how to organize their 'thoughts.' I am hoping that these strategies will help students calm any anxiety related to the changes adolescence brings about and the pressures of peers and school. Many teachers have used mindfulness with their students and found that it improves the quality of student's work and the overall sense of well-being in the classroom. The majority of the exercises we will use are found on Apps that have been designed for use in schools.

I would very much appreciate having your permission to record your child during some of these exercises and use my observations to support the fact that these tools can benefit your child's learning in Social Studies. I will use a pseudo-name to protect your child's privacy. The information will only be shared in educational settings including a university mini conference for teachers and as part of my Master's paper.

Please sign this form and return it to me as soon as you are able. Thank you for your consideration. If you have any questions or concerns, please email me at:
 Kareem.aal@spps.org

Sincerely,
Kareem Aal

I give permission for my child _____ to participate in mindfulness exercises in Social Studies class.
 Parent's Name _____

Parent's Signature _____ Date _____
Child's Signature _____