Attention Please:

Positioning Attention at the Center of Curriculum and Pedagogy

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Introduction

> …our life passes with more or less attention to its passing …the richness of life is a function of our full attentiveness to what is… (Hans 1993, p. 36)

> The problem of the pervasiveness of habitual inattention needs to be addressed, not through the band-Aid measures of increasing pressures on children or placing greater emphasis on exams, but rather through a revitalization of our understanding of attention itself. (Eppert 2004, p. 44)

JOHN DEWEY ESTABLISHED HIS PHILOSOPHY OF EDUCATION over the concept of 'experience' and claimed that, "Everything depends on the *quality* of the experience which is had" (Dewey 1998, p.14). This paper proposes that the quality of experience depends on the human faculty of *attention* for as William James proposed, "A thing may be present to a man [and woman] a hundred times, but if he [or she] persistently fails to notice it, it cannot be said to enter into his [or her] experience" (James, 1962, p. 185).

Against the backdrop of these claims, when we review attention as it appears in educational discourse, we mostly find a struggle with *in*attention featuring Attention Deficit (hyperactivity) Disorder (AD(H)D) that has been grouped into the two domains of 'inattention' and 'hyperactivity/impulsivity'. Swanson *et al* (2007) defined inattention as "poor attending to details, sustaining attention, listening, organizing and finishing tasks, exerting mental effort…", and impulsivity as "blurting out answers, cannot wait, and

interrupting others" (p. 207). Attentional deficit is characterized by the inability to focus vividly on a chosen object manifesting in students' falling into listlessness, boredom, or dullness (Wallace & Shapiro 2006, p. 695). Attention becomes dysfunctional, "when people focus on things in afflictive ways, those that are not conducive to their own or others' well-being" (*ibid.*).

The above symptoms hardly seem to be peculiar or saved for those diagnosed with ADD/ADHD. Inattention and mindlessness are a pervasive human condition. Both scientific studies and influential accounts, not only corroborate this claim but also point to the implications of this pervasive condition on the quality of our lives (Csikszentmihalyi, 1990; Ergas, 2015; Eppert, 2013; Kabat-Zinn, 1990; Killingsworth & Gilbert, 2010; James, 1962; Langer, 1997; Wallace, 2006). In light of the central role of attention in our lives and its formative role in the educational experience, it would make sense to consider ways of fostering attention positively as part of the curriculum rather than focusing solely on combating inattention.

However, as the first part of this paper will show, the understanding of attention in the curriculum rests on premises that undermine such educational agenda. First, we tend to conceive of attention as a means and not as an end in itself. Second, prominent scholars such as William James and Ellen Langer, and findings from neuroscience and psychological research suggest that our minds are wanderers by default; a fact that tends to jar against the idea of engaging in the cultivation of attention. Following the explication of this approach, the second part of the paper will turn to depict theories that place attention at the foreground of the curriculum, as well as applications of 'attentional training' that demonstrate that the above two premises may be incorrect. Furthermore, while certainly informing teaching practice, our complete reliance on teachers as responsible for ensuring attention, might be overshadowing the educational potential involved in 'attentional training'. Recently, contemplative practices such as mindfulness have been applied in diverse educational settings revealing that cultivating voluntary attention might be possible and educationally transformative (Kabat-Zinn, 2005; Roeser, 2014; Schonert-Reichl & Roeser, 2016; Zenner *et al*, 2014). Mindfulness and other contemplative practices are conceptualized diversely in current educational applications (Ergas & Todd, 2016). Nevertheless, setting aside the aims toward which they are implemented, there is consensus as to their practice as requiring, "individuals to exercise volitional control to sustain the focus of attention on particular objects (such as the breath) or mental contents" (MLERN, 2012, p. 147).

In light of the above oppositional perspectives, in the final part of the paper I will sketch some basic ideas that can inform a balanced curriculum that alternates between making subject matter subservient to attentional training, and making attention subservient to the study of subject matter based on recent accounts of *contemplative pedagogies* (Barbezat & Bush, 2014; Lin, Oxford, & Branmeier, 2013).

Attention and Teaching

Attention according to William James is, "the taking possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought" (James, 1890, pp. 403-4). Yet consciousness is 'narrow', meaning that we are

exposed to much more than we can actually be conscious of, thus, "[T]he sum total of our impressions never enters our *experience*" (James, 1962, p. 227). Numerous objects may be present to my senses yet they never enter into my conscious awareness as James suggested (1890, p. 402). That which *does* enter our experience is that which we attend to through a selective process that reveals the inextricable link between attention and interest. As James stated this, "whoever treats of interest inevitably treats of attention, for to say that an object is interesting is only another way of saying that it excites attention" (James, 1939, p. 100).

As I established elsewhere, the scaffold of any pedagogy – *meta*-pedagogy - concerns orienting students' attention either *inward* to attend to our thoughts/emotions/sensation or *outward* to the public domain (Ergas, 2015). Practically speaking, the most obvious strategy for teachers wishing to have their students' eyes and ears 'on them' is to present their case in a way that will be engaging to as many students as possible. Our teacher education programs thus may be rightly concerned with diverse forms of teacher knowledge that inform ways in which teaching becomes interesting and effective (Fenstermacher, 1993; Shulman, 2004). However, no amount of teacher education will ensure our success in *sustaining* students' attention since attention is not completely in the teachers' hands. As James noted, attention is formed bi-directionally for, "[I]ncoming currents from the periphery arouse it, and *collateral currents from the centers of memory and imagination re-enforce these*" (1939, pp. 106-107 italics mine). In other words, it takes two for this tango: the teacher's words, class discussion etc. as the 'incoming current' and the student's mind as 'collateral currents'. The further efforts to educate teachers in ways that contribute to their teaching skills are well in place, however, I suggest that we have dedicated ourselves far more to the side of the teachers as interest-*ers,* and not enough to the side of the students as those that are to be interest-*ed.* Such an approach seems to ignore the bi-directional nature of attention and, as I will later show, results as limiting the scope of the public curriculum.

In the following I describe our current approach based on depicting two premises that seem to underlie the understanding of attention in much of our teaching practice: 1) Sustained voluntary attention cannot be cultivated, and is not possible for longer than a few seconds; and, 2) Attention is a *means* and not an *end*. This initial exploration will expose the limitations that these premises impose on our contemporary curriculum, and allow for the development of an alternative approach.

Mind-wandering and the impossibility of active attention.

James (1962) distinguished between *active* and *passive attention*. Passive attention does not require voluntary effort on behalf of the attender. The attender's mind takes complete interest in the subject matter at hand, and thus no effort on his or her behalf is required to sustain attention. Conversely, *active attention* is the voluntary directing of attention to an object in which the mind *loses* interest. James referred to active attention as 'sustained voluntary attention'. The grave human predicament that he identified is that we are extremely lacking in this domain: "*There is no such thing as voluntary attention sustained for more than a few seconds at a time.*" (James 1962, p. 234, italics in original). He referred to this predicament as the mind's tendency to 'wander' (1890, p. 401). It becomes yet grimmer given that the capacity to sustain voluntary attention was viewed by James as a fixed characteristic of the human mind that cannot be helped much. He thus declared, "I am inclined to think that no one who is without it naturally can by any amount of drill or discipline attain it in a very high degree. Its amount is probably a fixed characteristic of the individual" (1939, p. 113).

Minds wander. They attend to *this* and will quickly shift to *that* if *this* is not perceived as interesting, meaningful, or rewarding enough. Addressing this in the context of teaching had led James to write:

> Voluntary attention is thus an essentially instantaneous affair. You can claim it, for your purposes in the schoolroom, by commanding it in loud, imperious tones; and you can easily get it in this way. But, unless the subject to which you thus recall their attention has inherent power to interest the pupils, you will have got it for only a brief moment; and their minds will soon be wandering again. (James, 1939, p. 103)

Turning to recent neuroscientific findings proposes an additional perspective on the tendency of the mind to 'wander' away from the task at hand into *inattentiveness*; a theme that has become the focus of important neuroscientific findings. In groundbreaking research neuroscientists Raichle and colleagues (2001) have shown that 'wandering' seems to be the default operational mode of the brain. When we lose interest in a task, our minds quickly wander into what has been termed 'stimulus-independent thoughts' (Mason *et al*, 2007). The emergence of such task-unrelated thoughts, are manifestations of what neuroscientists refer to now as the brain's *default mode network* (Buckner *et al*, 2008). What this amounts to is that the performance of a very well-rehearsed activity such as driving a car, or the presence in an activity perceived as boring (as some school lessons can certainly be), very quickly sends our minds into internal thoughts that decouple us from outer-sensory experience (Schooler *et al*, 2011). We become engrossed in our minds, thinking about yesterday, worrying about tomorrow, and dwelling in our social identity while becoming inattentive to that which goes on in the concrete present.

Recent empirical studies that were based on extensive sampling of individuals throughout the day, revealed that our minds spend between 30 to 50 percent of our waking hours wandering, that is – in attending to task *un*related thoughts (Kane *et al*, 2007; Killingsworth & Gilbert's, 2010). Such data contributes to the understanding of life in the classroom, and the incredible task with which a teacher is confronted. Just consider the unfavorable condition of entering a classroom in order to teach subject matter that students have probably not chosen, at a time of day in which they might prefer to be doing somethings else. If we consider students' minds as wanderers by *default* as suggested in the above researches, and if these minds indeed wander close to a half of their waking hours, the teacher's task becomes incredibly demanding. Indeed James compared the art of teaching to a battlefield in which the teacher fights the student's mind that is construed as an *enemy*:

> …in teaching, you must simply work your pupil into such a state of interest in what you are going to teach him that every other object of attention is banished from his mind; then reveal it to him so impressively that he will remember the occasion to his dying day…The mind of your own enemy, the pupil, is working away from you as keenly and eagerly as is the mind of the commander on the other side from the scientific general. (1939, p. 10)

An additional point to bear in mind is that wandering and inattentiveness are not states of mind that students (nor adults) deliberately choose as John Holt (1964) eloquently described:

> Watching older kids study, or try to study, I saw after a while that they were not sufficiently self-aware to know when their minds had wandered off the subject. When,

> by speaking his name, I called a daydreamer back to earth, he was always startled, not because he had thought I wouldn't notice that he had stopped studying, but because *he* hadn't noticed… Most of us have very imperfect control over our attention. Our minds slip away from duty before we realize that they are gone. Part of being a good student is learning to be aware of the state of one's own mind and the degree of one's own understanding. (pp. 7-8)

The point I am making has less to do with mind-wandering and its various educational implication as such.[1] My focus is on the beliefs that have been guiding our teaching practice in ways that have undermined the possibility of educating students in becoming more responsible for their faculty of attention – a faculty that as depicted in the introduction, substantially shapes their lives and their educational experience.

Implications of the impossibility of active attention on pedagogy.

Our premises in regards to attention underlie the ways in which teachers are educated, and the ways in which they will come to teach. If we follow James and view the cultivation of active attention as impossible and we accept mind-wandering as a given, that means that we view the students' side in the attention dyad as fixed. Overcoming mind-wandering thus lies completely in the hands (or minds) of teachers. Thus we need to educate *teachers* in ways that inform their practice so that, in line with James's claims, they learn to *conquer* and sustain students' attention:

> …the more the passive attention is relied on, by keeping the material interesting; and the less the kind of attention requiring effort is appealed to; the more smoothly and pleasantly the class-room work goes on. (James, 1939, p. 101)

Another way to work with the premise that sustained voluntary attention cannot be cultivated may send us to reconceptualize what it means to 'pay attention' given the nature of our mind as a 'wanderer'. This very approach undergirds Ellen Langer's (1997) research on *mindful learning*. In her book she offers a number of compelling arguments that challenge stagnant beliefs concerned with our understanding of attention and its relation to effective learning. One such argument is directed at a common conception of the ubiquitous phrase 'pay attention'. From a very young age we are told 'to pay attention', which we eventually surmise to imply *sit still and be quiet* (p. 37). According to Langer this reflects an erroneous conception of attention on the basis of the camera metaphor:

> Perhaps we see ourselves as photographers trying to bring an object into focus and hold both the camera and the target still. Is this what we mean when we try to pay attention? Do we try to immobilize our minds and focus on a single object? (p. 38)

This is the very idea of active attention that James considered impossible to achieve. This stillness, Langer claimed, is not only impossible but also, in fact, *detrimental to learning*. She thus suggested, "A mindful approach to any activity has three characteristics: the continuous creation of new categories; openness to new information; and an implicit awareness of more than one perspective" (p. 4). Given the mind's tendency to quickly lose interest in the object of study, James and Langer both suggested that we should abandon the ideal of sustained voluntary attention in favor of the constant re-shuffling of our attention in relation to the object. "The *condition sine qua non* of sustained attention to a given topic of

thought is that we should roll it over and over incessantly and consider different aspects and relations of it in turn" (James 1962, pp. 236-237).

According to Langer, the common stagnant belief in attention as requiring stillness deprives us of a mobilized attention that allows openness and 'the creation of new categories'. Succumbing to such a rigid view of attention impinges on learning. To counteract such rigidity, at least one aspect of good teaching according to Langer entails the cultivation of students' inquisitive approach in the face of the subject matter by constantly reframing the subject matter based on new categories (1997, p. 42). Both James and Langer disclose an approach that views attention as subject to a mind that is quite easily tempted to leap from one attraction to the next, based on what the mind deems more interesting. Such a mind prefers novelty by its very nature (1997, p. 40). Thus both argue that we are to work with this characteristic as a given fact. Instead of fixing our attention on the object, the teacher is to follow the natural tendency of the student's mind to wander, by constantly repositioning the subject matter and re-packaging it as a bait that lures the students' interest and attracts attention.

Both James's and Langer's concept of teaching depicts the ideal classroom as one that is ruled by James's view of *passive attention*. That is, a state in which the students need not make any effort to sustain their attention on their own behalf. The teacher's skill of creating interest is the means for creating optimal learning conditions. Lest this be misunderstood, the word 'passive' does not imply that the students are not *actively* involved in learning. In fact if passive attention is achieved based on the teacher's skill, then active *learning* might very well be the result, since the students' curiosity is constantly sustained. In this sense, I am surely not arguing against good teaching, nor against Langer's concept of mindful learning. I am rather claiming that if we embrace this model alone, then we are missing the dramatic educational potential (soon to be described) that emerges from the possibility of developing what James thought to be impossible – sustained voluntary attention. Interestingly, in an often-cited passage, James himself advocated this idea: "The faculty of voluntarily bringing back a wandering attention, over and over again, is the very root of judgment, character, and will...An education which should improve this faculty would be the *education par excellence*" (1890, p. 401, emphasis mine). Yet, as mentioned, James did not believe this ideal could be achieved. How frustrating, that *the education par excellence a la* James consists exactly of what he thought to be impossible – the cultivation of active attention. Was not James a little too quick in nullifying this possibility?

Active Attention *Can* be Trained

Langer stated that there are two ways of conceiving of attention: "hold the picture still in your mind. Or vary the picture in your mind" (1997, p. 39). Interestingly the very concept of attention rejected by Langer constitutes the ideal of what is construed contemporarily in some renditions of *mindfulness* practice. A version of Langer's 'camera metaphor' is *embraced* by Alan Wallace to describe the ideal of cultivating sustained voluntary attention:

> …the development of attentional stability may be likened to mounting one's *telescope* on a firm platform; while the development of attentional vividness is like highly polishing the lenses and bringing the telescope into clear focus. (Wallace, 1999 p. 177 italics mine)

That which is depicted by Langer as an unnatural ideal is construed by Wallace and others, who are currently studying mindfulness practice, as the premise that undergirds a radically transformative educational process. Recent research and scholarship in the domain of mindfulness demonstrates that the tendency toward 'mind-wandering', mindlessness, and inattentiveness can be substantially affected by 'attentional training'. As Wallace describes in his book *The Attention Revolution*, '[T]he untrained mind oscillates between agitation and dullness, between restlessness and boredom' (Wallace 2006, p. xi). The mind is indeed a 'wanderer' by default, but contemporary research that examines the impact of mindfulness and other contemplative practices (e.g., yoga, compassion meditation) on diverse human traits proposes that this default is not a fixed state that we must 'work around' as in James's and Langer's case. Quite the contrary, this default can be viewed as more of a *habit*, and though old habits die hard, with perseverance they *can* be rectified (Wallace & Shapiro, 2006, p. 699). As mentioned above, the following should not be read as an attempt to extinguish mind wandering from our lives. This is more about cultivating our ability to choose what we attend to, and how we attend to it - for as later elaborated to a great extent; this is what determines the quality of our lives (Csikszentmihalyi, 1990; Ergas, 2015; Hans, 1993; James, [1890] 1981; Weil, 1986).

A contemporary approach widely applied in this context is that just like our muscles, mental faculties can be strengthened based on methodical training (Davidson, 2012; Goleman, 2006; MLERN, 2012; Seigel, 2010; Zajonc, 2009). The point I will be making here following a review of contemporary research, is that as we bring attention to the foreground of the curriculum based on pedagogies for training attention, we may be serving the education *par excellence* to which James referred.

The development of sustained voluntary attention.

Wallace (2006) describes the practice of developing 'attentional clarity and stability' in simple practical terms. The practice can lead the layperson from the conventional and familiar levels of attention that indeed disclose inability to sustain voluntary attention, to profound and high levels of attentional stability (p. 7). I focus on mindfulness of breathing that Wallace suggests as a desirable meditation technique for this cause. My focus on mindfulness of the breath has to do both with the relative simplicity involved in its application within education. At the same time mindfulness of the breath is widely researched by contemporary neuroscientists, and psychologists as one form of 'attentional training' implemented in educational and other settings (Broderick & Metz, 2009; Davidson et al, 2012; Flook et al, 2010; Jha, Krompinger & Baime, 2007; Napoli, Krech & Holly, 2005; Zenner, Hernhleben & Wallach, 2014).[2]

The formal practice usually involves sitting comfortably yet erectly and bringing one's attention to the sensation of the breath. The meaning of 'mindfulness' is constantly debated in contemporary literature (Hyland, 2016; Purser, 2015), however in this case it means, "attending continuously to a familiar object, without forgetfulness or distraction" (Wallace 2006, p. 13).[3] The nature of our wandering mind will quickly reveal itself, as the breath will be perceived as a benign and boring object. Just as our mind would wander when boredom arises in a school lesson, here too, our mind will start searching for 'something better to do than observe the breath'. That will happen even if we are convinced that this activity might be beneficial, for as Wallace mentions the mind tends to forgetfulness and an integral part of mindfulness practice is *remembering* our intentions.

Most importantly to our case: The practice literally follows James's prescription for the education *par excellence*, for here, whenever our attention strays from the sensation of the breath we are to 'return our wandering attention over and over again' to it. The main pedagogical principle to be made clear here, is that *the effort to attend becomes completely owned and activated by the student* as opposed to the pedagogical rationale of *passive* attention discussed in part one. This is an *active* returning of attention to an object that is chosen specifically *because* we normally perceive it as uninteresting.

Yet complying with these rather simple instructions can be fraught with difficulties in the initial phases. Beginners who try to follow these instructions are usually stunned when they discover just how incapable they are of controlling their attention: "the mind is seized constantly by...a never ending torrent of disconnected mental events that the meditators do not even realize are occurring except at those brief instants when they remember what they are doing" (Varela, Thompson & Rosch 1991, p. 25).

There is thus a sense of frustration that one needs to learn to work with. Hence, mindfulness practice is not 'just' attending. It is a practice that must include a crucial pedagogical component framed as an attitude of *non*-judgmentalism and kindness (Kabat-Zinn, 1994; Shapiro & Carlson, 2009). Rather than reprimand ourselves for our lack of control over attention, we are to *remember* to treat ourselves as we would treat a young child who cannot be expected to show capabilities that he had not yet developed. With perseverance, the faculty of voluntarily sustaining attention over the sensation of breath for growing periods of time is enhanced. With that same perseverance not only is attention cultivated. The qualities of non-judgementalism and kindness that the practitioner has invested in each bringing back of his wandering mind to the breath, are fostered as well, to hopefully be later translated into his or her social life.

Evidence that such practice indeed yields these results are beginning to accumulate. Several experiments reveal that mindfulness improves diverse attentional skills. Jha, Krompinger, & Baime (2007) conducted a controlled experiment in which they found that participants in an 8-week mindfulness-based stress reduction course improved the function of orienting attention compared to controls who did not do the course. They concluded that, "concentrative meditation may indeed alter functioning of the dorsal attention system to improve voluntary response and input-level selection processes" (p. 116). Another experiment found that 3 months of intensive mindfulness meditation decreases our tendency to miss stimuli that are presented in a stream due to attendance of previous stimuli (referred to as 'attentional blink') (Slagter et al, 2007). Tang and colleagues (2007) showed that even 20-minutes per day for 5 consecutive days of 'attentional training' can improve attentional faculties. They claim that "attention, and the quality of moment to moment awareness are flexible skills that can be trained" (p. 17155). Napoli, Krech, & Holley (2005) developed a program called 'attention academy' geared toward teaching first, second and third grade students, "to focus and pay attention" (p. 99). Approximately 250 students participated in a program that included 24 weeks of bi-monthly 'mindfulness' practice sessions based on breath-work, bodyscan and other techniques. The most significant finding was "an increase in…the ability to choose what to pay attention to" (2005, p. 113).

This very partial review works in tune with a changing paradigm that is increasingly becoming accepted, based on work that integrates research from psychology, neuroscience and cognition (Davidson, 2012; MLERN, 2012; Seigel, 2015). This paradigm stems from

clear evidence of the "the power of the mind to change patterns of brain activity" (Davidson, 2012, p. 160). The brain changes,

> as a result of the experiences we have in the world –how we move and behave and what sensory signals arrive in our cortex. The brain can also change in response to purely mental activity ranging from meditation to cognitive- behavior therapy, with the result that activity in specific circuits can increase or decrease (2012, p. 175).

Further evidence that support the consideration of 'attentional training' in the curriculum moves us toward the education *par excellence* that James proposed in which he tied the bringing back of a wandering attention with 'Judgment, character and will'. According to Wallace one of the first signs of progress in 'attentional training' "is simply noticing how chaotic our minds are" (2006, p. 13). This theme constantly comes up in final projects in courses I teach at the university. In these BA, MA, and teacher education courses, the students study the theory and practice of mindfulness and bodily-based attentional practices (yoga and tai chi) and document their self-practice throughout the semester. In analyses of these projects (Ergas, 2013) many students report the encounter with their wandering-mind as both shocking and educationally transformative as they begin to see through the mind's conditioned patterns and mindless habit. After a semester of self-practice with varying degrees of engagement (between 10-15 minutes 3-5 times a week) students report improved self-regulation, and an enhanced understanding of the motivations underlying their choices and actions in life. Research of diverse contemporary interventions within schools and teacher education programs has been showing that 'attentional training' is associated with the enhancement of executive functions (Flook *et al*, 2010), reduction in self-reported negative affect (Broderick and Metz, 2009), improvement of teacher resilience and performance (Jennings *et al*, 2011) and other traits, many of which are tied with the discourse of social-emotional learning (Durlak *et al*, 2015). At the same time as MLERN (2012) Meijkeljohn *et al* (2012), and Greenberg & Harris (2012) conclude, research in this field is still limited because of lack of longitudinal studies, precision of questionnaires, number of participants, sophistication of measurement and other factors which scientists are now ardently working to develop. Nevertheless, they argue that there is enough evidence to support pursuing this orientation.

This short excursion served two purposes: 1) It clarified that 'attentional training' carries an educational impact beyond a narrow understanding of simply being able to attend to an object for longer periods of time (a trait that need not be underestimated even when rendered as such, given the mind's wandering nature); and, 2) It paves the road for what may be referred to as a balancing curricular orientation in which attention is viewed as an *end* served by the subject matter and not merely as a means.

Balancing the Curriculum

When discussing attention within the context of education it is conventionally viewed as a means applied towards a certain accomplishment. As Langer (1997, p. 37) observes, "To accomplish virtually anything we need a modicum of attention". Within the common contemporary context of education and ADHD, attention is framed as a 'disorder' that needs to be overcome, so that *actual learning* will finally take place as Sir Ken Robinson describes (2009: ch. 1). We thus tend to think of attention as a precondition, or a vehicle towards the acquisition of *something other* than attention. A student attends *so that* she learns Algebra,

literature, history, social codes etc.. From the teacher's or the school's point of view, once the student attends, this precondition for learning is out of the way and the lesson can now advance to the 'real business' of studying Algebra. Attention thus serves the learning of subject matter.

There is clearly certain awkwardness in suggesting that this statement can be reversed. That is, that the student learns Algebra, literature and history so that she will learn to attend. Yet, this was very much what Simone Weil had in mind in claiming that, "The only serious aim of schoolwork is to train the attention" (1986, p. 273). As Eppert writes the phrase 'pay attention', "is an imperative understood as a stern plea for learners to return, to refocus and accomplish the task at hand" (2004, p. 43). In many cases that task revolves around standardized testing thus "paying attention has become a commodity, a good purchasable by students by enrollment in high-scoring schools – one that is rewarded with state funding and credibility" (*ibid.*). If we re-contemplate the dramatic effect of attention on our lives, and our rather poor ability for sustained voluntary attention, we might reconsider the treatment of attention solely as a means to an end. Aside from James, Weil, Kabat-Zinn, Wallace, and others mentioned, many scholars depicted attention as a life-determining faculty. Psychologist James Hans, for example, wrote:

> …everything depends on an understanding of what is, and a full understanding of what is hinges on the complete attention to the moments of our lives…the best of all possible lives can be formulated with great simplicity – attend fully to what is and act on that bases… (1993, p. 37)

And later:

> If attention is truly all we have and all we are…and if the entire texture of our lives…is nothing more than the principles of selection that manifest themselves through the things we choose to note over the course of a lifetime then we need to reconsider our relationship to the most fundamental feature of our lives… (p. 40)

Hans claimed that we can come to see our*selves* as: "nothing more or less than that to which we attend" (ibid.). Even more famously one of the founders of positive psychology, Mihalyi Csikszentmihalyi claimed that: "…experience depends on the way we invest psychic energy – on the structure of attention" (1990, p. 35); "We create ourselves by how we invest this energy.' (P. 33); "People who learn to control inner experience will be able to determine the quality of their lives, which is as close as any of us can come to being happy" (p. 2). His famous coining of *flow* as an optimal experience conducive to happiness was found by Csikszentmihalyi to emerge in cases of, "a complete focusing of attention on the task at hand – thus leaving no room in the mind for irrelevant information" (p. 58).

Should not then education in attention precede the disciplines, given that it is the precondition for undergoing any educational experience (or perhaps any experience as such)? Ought it not become the meta-subject matter of our education; one that might even bear precedence over the famous three R's none of which can be acquired without it? Ought it not be elevated from being considered as a means to becoming an end in itself?

Educating students to *know* attention and *be* attentive means attuning them with the common denominator underlying all their interactions with themselves and the world. As

Noddings (2003) claimed we dedicate many curricular ‘slots’ to Algebra for example, yet most of us will not be applying much Algebra in our adult lives. We may be wise to incorporate lessons in parenting, cultivating hobbies, making a home and other that nearly all of us would find crucial to our lives. Following Noddings' argument, our attentional skills may be something that if studied at school, would be constantly put to practice in our daily lives enriching students long after school years have ended.

If attention is eventually the determining factor of the quality of learning and living as some of the above accounts suggest, then if we base our entire pedagogy on ensuring *passive* attention, we are doing our students a grave disservice. The implications of not attending to attention *as* a subject matter in an of itself, are limiting our curriculum in the following ways: 1) There is an inherent imbalance in holding the *teacher* alone responsible for ensuring students' passive attention. With such approach, not enough responsibility is laid on the student so that he or she becomes the agent of attention acknowledging its life-transforming power; and 2) In treating attention solely as a precondition to be gotten out of the way we frame it as a means to achieve the subject matter. This confines schooling to a limited perception of life; one that Whitehead (1962) for example, sought to overcome in claiming that "There is only one subject-matter for education, and that is Life in all its manifestations" (p. 10). Having this broad conception of education can be viewed as an injunction to consider ‘attentional training’ in the curriculum for attention is that faculty which accompanies our lives both within school and beyond it. It is the determining factor of the "quality of experience" (Dewey 1998, p. 14) and the precondition for knowing ‘Life in all its manifestations’.

These claims suggest a *balancing* of the curriculum in which we integrate the possibility of bringing it to the foreground and treating it as an end, and not solely as a means. I refer to it as balancing for by no means am I suggesting that disciplinary subject matter and learning skills are unimportant. I am rather claiming that at the moment the curriculum is unbalanced for attention is constantly placed at its background. Balance would require that we skillfully incorporate pedagogies that reverse the relationship between attention and subject matter to inform a broader curriculum. The essence of this shift is that the curricular focus is mobilized from being given mostly to the study of a ‘world’ lying outside the student to the student's study of his own mental-workings as a precondition of being and knowing (Ergas, 2015). Instead of speaking attention out of the curriculum by entrusting it solely in the hands of teachers, we educate students *and teachers* in *actively* monitoring their own attentional skills, and in an appreciation of attention's role in their lives. The following section proposes one way of conceptualizing a balanced curriculum in this sense.

Practicalities: A pedagogical spectrum of attention in the curriculum.

In the following, I only propose a broad guideline for a balanced curriculum followed by some contemporary examples that are becoming known as 'contemplative pedagogies'. We can interpret the following statement as a pedagogical guideline for a broadened conception of the curriculum that combines the study of subject matter, and the study of attention, applying one as the scaffold for the learning of the other at different times:

> As one focuses more closely on the object, one becomes less conscious of the subject; and as one focuses more closely on the subjective experience, one becomes less conscious of the object.’ (Wallace, 1999, p. 180)

Our attention, as mentioned can be viewed as allowing a certain amount of information to flow into our conscious experience, we thus need to skillfully learn to shift our attention from a curricular subject (*out there*) to our attention (*in here*) (Ergas, 2015). The study of attention can be based on incorporating mindfulness and other contemplative practices into the curriculum, but it can also be based on integrating it with curricular subject matter.

For example, when studying Geometry, *passive* attention can be relied upon as serving the study of Geometry. Conversely, Geometry can provide objects for the training of *active* attention as in Zajonc's (2009) example in which he proposes the construction of a triangle in our minds and the manipulation of its sides in various ways. He then applies this to an insightful engagement with Geometry proposing that we ask: "what is it that allows me to recognize in the infinite variety of particular forms that each is a triangle?" (p. 159). If we turn to Geography, studying the topography of mountains, lakes and other landscapes can serve as objects for training active attention. The visualization of the latter is commonly applied in mindfulness-based stress reduction courses (MBSR) (Kabat-Zinn, 1990) as additional means for stress-reduction. This seems to suggest that stress-reduction becomes the goal, rather than attention. However, the undergirding ethos of MBSR as Kabat Zinn reiterates time and again, is in fact to abandon this goal-orientation, and focus mostly on the 'bringing back of a wandering attention' as matter-of-factly as possible.[4] Transforming attention into an end, suggests that all other gains attributed to this proposal (e.g., stress reduction, enhanced concentration), become by-products of this process rather than ends to be achieved.

This approach is in fact becoming more widespread within higher education as described in a number of anthologies and papers discussing "contemplative pedagogies". Barbezat & Bush (2014), Gunnlaugson *et al* (2014), and Lin *et al* (2013) offer several examples of creative ways in which lecturers across disciplines have been incorporating pedagogies that rely on active attention, placing it at the foreground, which inevitably pushes the conventional course subject matter to the background. For example, Jill Schneiderman who teaches earth sciences gives her students a sense of geological time, by leading them in a practice in which they turn their attention to scan their body as its length represents the evolution of earth. The toes reflect the beginnings of the earth's formation while the crown of the head reflects the evolution of the human being (2013, p. 255). Barbezat (pp. 51-66) applies practices such as compassion meditation in his Economy courses. Based on this practice students learn how changes in their mental states can change what seem to be 'cold' decision-making processes. Barbezat & Bush (2014) describe many applications of mindfulness practice in higher education courses in Law, management, science, and other. In these courses passive and active attention are integrated skillfully. Some of the subject matter clearly requires frontal lecturing, yet diverse contemplative practices are applied to enhance students' intimate engagement with subject matter based on active attention. This engagement yields a far more rewarding and meaningful educational experience, such that many students seek when turning to higher education.

Many of these practices extend beyond a thin understanding of 'attentional training' as they seem to be oriented toward more than 'simply' sustaining voluntary attention. However, anyone who attempts the above practices, i.e. the visualization of a triangle or a mountain, or the cultivation of a mental state such as compassion for more than a few moments - will inevitably have to engage with the training of *active* attention. Initially, attempting such practice might lead to William James's, perhaps premature conclusion, that this is a lost cause.

Contemporary science, and the proliferation of mindfulness-based curricular interventions seem to suggest otherwise (MLERN, 2012; Schonert-Reichl & Roeser, 2016). They may be implying that some of the premises undergirding our understanding of attention in the curriculum are already beginning to change.

Conclusion

This paper suggested a rethinking of the concept of attention in the curriculum by examining two fundamental premises underlying curriculum theory and practice based on William James and Ellen Langer: that active attention is an impractical educational ideal, and that attention is a means and not an end. Proposing approaches that challenge both premises and some empirical evidence that supports these approaches, it was suggested that: active attention *can* be developed, and that mobilizing attention to the foreground holds a transformative educational potential. Such shift entrusts the responsibility over attention, not only in the teachers' hands, but also in the students' hands, and by so doing, it initiates students into the understanding of attention as a life-determining quality.

There are several difficulties involved in implementing some of the ideas proposed in this paper. First, no teacher can be expected to teach that with which she or he are not directly familiar. Teachers need to become highly familiar with contemplative pedagogical approaches such as described in the third part of the paper, which implies modifications of approaches to teacher education some of which are proposed in the literature described in part three. Second, attentional training might sound simple in theory, yet closing one's eyes and attending to the breath for example, is challenging. Some children, youth and/or adults might experience distress in such situations, and skillful teachers are required for handling these. Third, not all parents can fathom such novel approach especially given the notion that there is so little time and so much work to do, hence watching one's breath might not seem like a productive way of spending school time. We certainly need to have good reasons for incorporating such practices in schools and/or Universities, some of which I attempted to provide. However, generally, we might question what is the end of "spending school time productively"? Are five more minutes spent on Math/ Geography/ History/ Literature/ Chemistry necessarily more productive then five more minutes of appreciating the attention without which none of these could be perceived?

Notes

[1] Indeed, a current discourse in contemporary neuroscience concerns the attempt to explain

[2] It is however, very important to note that sustained voluntary attention is only *one* contemporary context for the practice of mindfulness. Several other practices including, open attention and the cultivation of compassion are currently termed "mindfulness" (Cullen, 2011).

[3] And elsewhere *mindfulness* concerns '…sustaining the attention upon a familiar object without being distracted away from it' (Wallace, 1999 p. 178). It is noteworthy to juxtapose Wallace's conception of 'mindfulness' as the exact opposite of Langer's 'mindful learning'.

[4] Discussing this non-striving (Kabat-Zinn, 1990, p. 38) attitude is beyond the scope of this paper, however, it suggests a letting-go of expectations, that in itself proposes an abandoning of our linear conceptions of learning (pp. 31-32) and education (p. 440).

References

Baars, B. (2010). Spontaneous repetitive thoughts can be adaptive: Postscript on McKay and Vane, *Psychological Bulletin, 136* (2), 208-210.

Barbezat, D. & Bush, M. (2014). *Contemplative practices in higher education.* San Francisco: Jossey Bass.

Broderick, P. C., & Metz, S. (2009). Learning to BREATHE: A pilot trial of a mindfulness curriculum for adolescents. *Advances in School Mental Health Promotion*, *2*, 35–46.

Buckner R.L., Andrews-Hannah *J.R.,* Schcahter*,* D.L.. (2008). The brain's default network anatomy, function, and relevance to disease. *Annals of the New York Academy of Sciences, 1124* (1), 1-38.

Carboni, J.A., Roach A.T., & Fredrick, L.D.,(2013) Impact of mindfulness training on the behavior of elementary students with attention-deficit/hyperactive disorder, *Research in Human Development*, 10:3, 234-251.

Csikszentmihalyi, M. (1990). *Flow*. New York: Harper & Row.

Cullen, M. (2011). Mindfulness-based interventions: An emerging phenomenon. *Mindfulness 2* (3), 186-193.

Dewey, J. (1910). *How we think.* Chicago: D.C. Heath & Co. Publishers.

Dewey, J. (1998). *Experience and education*. Indiana: Kappa Delta Pi.

Durlak, J. A., Domitovich, C. E., Weissberg, R. P., & Gullotta, T. P. (2015). *Handbook of social and emotional learning: Research and practice*. New York: The Guilford Press.

Eppert, C. (2004). Altering habits of attention in education: Simone Weil and Emmanuel Levinas, In H. A. Alexander (ed.) *Spirituality and ethics in education*. Portland: Sussex Academic Press.

Epstein, M. (1995). *Thoughts without a thinker.* New York: Basic Books.

Ergas, O. & Todd, S. (Eds.) (2016). *Philosophy east/west: Examining intersections between educational and contemplative practices.* Oxford: Wiley-Blackwell.

Ergas, O. (2013). Re-envisioning embodied higher education towards *Integrity*: Standing meditation as pedagogy. In J. Lin, R. Oxford, E. Brantmeier (eds.). *Re-envisioning higher education: embodied paths to wisdom and social transformation*. Toronto: Information Age Publishing. 211-228.

Ergas, O. (2015). The deeper teachings of mindfulness-based curricular interventions as a reconstruction of "education". *Journal of Philosophy of Education 49* (2), 203-220.

Ergas, O. (2016). Educating the wandering mind: Pedagogical mechanisms of mindfulness practice for a curricular blind spot. *Journal of Transformative Education. 14* (2), 98-116.

Fenstermacher, G.D. (1994). The knower and the known: The nature of knowledge in research on teaching. *Review of Research in Education, 20*, 3-56.

Flook, L. et al (2010). Effects of mindful awareness practices on executive functions in elementary school children. *Journal of Applied School Psychology, 26,* 70--95.

Gunnlaugson, O., Sarath, E.W., Scott, C. and Bai, H. (2014) *Contemplative learning and inquiry across disciplines.* Albany, NY: SUNY Press.

Hans, J. S. (1993). *The Mysteries of Attention.* New York: SUNY press.

Hart, T. (2004) Opening the contemplative mind in the classroom. *Journal of Transformative Education, 2* (1), 28-46.
Holt, J. (1964). *How children fail.* New York: Perseus.
Hyland, T. (2015). On the contemporary applications of mindfulness: Some implications for education. in Ergas, O. & Todd, S. (Eds.) (2016). *Philosophy east/west: Examining intersections between educational and contemplative practices.* 9-28.
James, W. ([1890]1981). *The principles of psychology.* Cambridge, MA: Harvard University Press.
James, W. (1962). *Psychology the Briefer Course.* New York: Collier Books.
Jennings P. A. et al (2011). Improving Classroom Learning Environments by Cultivating Awareness and Resilience in Education (CARE): Results of Two Pilot Studies, *Journal of Classroom Initeraction,46* (1), 37-48.
Kabat-Zinn, J. (1990). *Full catastrophe living.* New York: Delta Trade Paperbacks
Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. New York: Hyperion.
Kabat-Zinn, J. (2005). *Coming to Our Senses.* New York: Hyperion.
Kane M.J., Brown L.H., McVay J.C., Silvia P.J., Myin-Germeys I., Kwapil T.R.. (2007). For whom the mind wanders, and when: an experience-sampling study of working memory and executive control in daily life. *Psychol Sci*. *18*, 614-621
Killingsworth, M.A. & Gilbert, D.T. (2010). A wandering mind is an unhappy mind. *Science 12 330* (6006). P. 932.
Langer, E. J. (1997). *Thepower of mindful learning*. reading, MA: Addison-Wesley.
Lin, J., Oxford, R., Brantmeier, S. (eds.)(2013). *Re-envisioning higher education.* Charlotte: IAP.
Mason, M. F. et al (2007). Wandering minds: The default network and stimulus-independent thought. *Science*, *315*, 393-395.
McMillan R. L., Kaufman, S. B., Singer, J. L. (2013) Ode to positive constructive daydreaming. *Frontiers in Psychology 4* (626) 1-9.
Meiklejohn J. et al (2012) Integrating mindfulness training into K-12 education: Fostering the resilience of teachers and students. *Mindfulness 3*(4), 291-307.
Mind and Life Education Research Network (MLERN): Davidson R.J., Dunne J., Eccles J. S., Engle A., Greenberg M., Jennings P., Jha A., Jinpa T., Lantieri L., Meyer D., Roeser R.W. and Vago D. (2012) Contemplative practices and mental training: Prospects for American education, *Child Development Perspectives*, 6.2, pp. 146–153
Mole, Christopher (2009) .Attention. Retrieved from http://plato.stanford.edu/entries/attention/#VolAct
Napoli, M., Krech, P. R., & Holley, L. C. (2005). Mindfulness training for elementary school students: The Attention Academy. *Journal of Applied School Psychology, 21,* 99-125.
Noddings, N. (2003), *Happiness and education.* Cambridge: Cambridge Univ. Press.
Purser, R. (2015). Clearing the muddled path of traditional and contemporary mindfulness: A response to Monteiro, Musten, and Compson. *Mindfulness, 6*, 23–45.
Raichle M.E. et al. (2001). A default mode of brain function. *PNAS 98* (2), 676-682.
Roeser, R. W. (2014). The emergence of mindfulness-based interventions in educational settings. *Motivational Interventions*. In S. A. Karabenick , T. C. Urdan (eds.) *Motivational Interventions (Advances in Motivation and Achievement, 18)* Emerald Group Publishing Limited, 379 – 419.
Schonert-Reichl, K., Roeser, R. (2016). *Handbook of mindfulness in education.* New York: Springer.

Schooler, J. W., Smallwood, J., Christoff, K., Handy, T. C., Reichle, E. D., & Sayette, M. A. (2011). Meta-awareness, perceptual decoupling and the wandering mind. *Trends in Cognitive Sciences*, *15*(7), 319–326.

Seigel, D. (2010). *Mindsight.* New York: Bantam Books.

Shulman, L. S. (2004). *The Wisdom of practice.* San Franciscon: Jossey-Bass.

Slagter, H. A., Lutz, A., Greischar, L. L., Francis, A. D., Nieuwehuis, David, J. M. Davidson, R. (200&). Mental training affects distribution of limited brain resources. PloS Biology, *5* (6), 1228-1235.

Smallwood, J., Fitzgerald, A., Miles, L. K., & Phillips, L. H. (2009). Shifting moods, wandering minds: Negative moods lead the mind to wander. Emotion, 9, 271–276.

Swanson J., Baler R.D., Volkow N.D. (2011). Understanding the Effects of Stimulant Medications on Cognition in Individuals with Attention-Deficit. Hyperactivity Disorder: A Decade of Progress. *Neuropsychopharmacology REVIEWS*, *36*, 207–226.

Varela F., Thompson, E. & Rosch, E. (1991). *The embodied mind*. Cambridge: MIT Press.

Wallace A.B., Shapiro, S.L. (2006). Mental balance and well-being. *American Psychologist, 61* (7), 690 –701.

Wallace, A. B. (1999). The Buddhist tradition of Samatha: Methods of refining and examining consciousness. *Journal of Consciousness Studies, 6* (2-3), 175-187.

Wallace, B. A. (2006). *The attention revolution.* Boston: Wisdom Publications.

Weil, S. (1986). *Simone Weil: An anthology.* S. Miles (Ed.). London: Virago Press.

Whitehead, A.N., (1962). *The aims of education and other essays.* London: Ernest Benn Limited.

Yi-Yuan T. et al (2007). Short-term meditation training improves attention and self-regulation. *PNAS 104* (43), 17152–17156.

Zajonc, A. (2009). *Meditation as contemplative inquiry*. Great Barrington: Lindisfarne Books.

Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness-based interventions in schools—a systematic review and meta-analysis. *Frontiers in Psychology*, *5* (1), 1-20.