Considering Attention in the Context of 21st Century Virtual Instruction

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Christa Pozzi

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Approved by:

C. Gautreau 8-1-19

Cynthia Gautreau, EdD — Date
Professor

8-1-19

Lindsay O'Neill, MS — Date
Assistant Professor

Abstract

The 21st century requires a new type of employee training; one which teaches, not merely process driven instruction, but the cultivation of internal strengths. This research explores the modern struggles of Generation Z; namely, how media-multitasking may be contributing to their rising rates of stress, depression, and anxiety and decreased levels of attention. As this generation joins the workforce and society continues its shift from Industrial to Knowledge work, ensuring employees possess the abilities (a) retain sustained focus on a problem and (b) self-regulate are of increasing importance. Employing *attention training* (i.e. straightforward executive network tasks) and *attention state training* (i.e. mindfulness meditation), the instructional product (i.e. Mental Downtime) aims to enhance self-regulatory behaviors amongst learners. The product serves as an example of what virtual education – designed to help learners cultivate internal strengths - might look like.

Dedication and Acknowledgements

A wholehearted thank you to my prior and current bosses - Jeffrey Trovinger and Michael Jones -, my academic advisor Dr. Cynthia Gautreau, and my parents David and Linda Pozzi for their unwavering trust, support, and love. I would also like to thank my Aunt Eadie who has helped me more this year than she will ever know. This project is dedicated to all those silently – and not so silently – suffering from dysregulated nervous systems.

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CHAPTER ONE

INTRODUCTION

An intrapreneur has been defined as one who is motivated by the desire to effect change and solve a problem (Ariail, Quinet, & Thacker, 2010). They are characterized by their ability to diligently work through issues and overcome obstacles to achieve their goals. Now more than ever, there is a need for companies to develop employees motivated capable of sustainable intrapreneurship. As robots are now equip to perform the majority of industrialized labor, the skillsets we look to garner from employees in the 21st century are those of creativity, collaboration, and critical thinking (U.S. Department of Education, 2017).

Who better to develop into these intrapreneurial roles than members of Generation Z? This generation has been described by Francis & Hoefel (2018) as a "hypercognitive generation very comfortable with collecting and cross-referencing many sources of information and with integrating virtual and offline experiences," (pg. 1). Not only are members of this generation self-motivated, they are also incredibly creative with a need to individuate (Francis & Hoefel, 2018). They appear to find more meaning designing their own paths than walking that of another; suggesting they may be more motivated by intrepreneurship than by climbing the corporate latter.

The intrinsic drive to autonomous problem-solve lays the foundation for an effective intrapreneur; however, the cultivation of internal strengths is also required for success. As defined by Hanson (2014):

> Inner strengths are the supplies you've got in your pack as you make your way down the twisting and often hard road of life. They include a positive mood, common sense, integrity, inner peace, determination, and a warm heart. Researchers have identified other

> strengths as well, such as self-compassion, secure attachment, emotional intelligence, learned optimism, the relaxation response, self-esteem, distress tolerance, self-regulation, resilience, and executive functions. (pg. 1)

What is interesting about these qualities is that they are the same traits employees need to cultivate in order to effectively shift from 20th to 21st century work – or from an industrial to knowledge society. They are also the same traits human beings need to cultivate to achieve an internal sense of well-being.

Just as technological advancement has helped to automate jobs of the past, it can be leveraged to develop education of the future. As instructional design is a relatively new field of study, the researcher seeks to educate business leaders as to how instructional design can be leveraged to support a new paradigm in business; one that teaches employees, not merely process-driven instruction, but how to cultivate internal strength.

Statement of Purpose

The instructional project (entitled "Mental Downtime") was created to serve as an example of what virtual education - designed to help learners cultivate internal strengths - might look like. Utilizing digital storytelling and brain-based learning strategies, Mental Downtime helps learners cultivate the internal strength of *self-regulation* by communicating (1) the concept of "multitasking" as a misnomer and (2) why taking regular breaks throughout the day is not a luxury, but a necessity. Ultimately, the goal is to develop an entire curriculum to help budding intrapreneurs develop the internal strengths necessary for 21st century work and – of course - overall well-being.

Research Questions

Within this research, the following questions are addressed. These questions are explored in detail within Chapter Two.

1. Why should companies leverage instructional design to enhance the attentional abilities of their employee population?
2. How can emotion be employed to engage selective attention?
3. How can digital storytelling help to sustain attentional vigilance?
4. How can enhancing self-efficacy help to enhance executive control?
5. What is support is required from business leaders to ensure the success of instructional design initiatives?

Rationale

Since the launch of the first smartphone, Generation Z (the generation born between 1995 and 2012) has grown up watching adults increasingly model multitasking behaviors (Kushlev, K., et al., 2016). Not only is the behavior socially acceptable, its imagined benefits remain engrained in many business cultures. According to BG Staffing (2016), multitaskers are identified individuals who are better able to handle stress, require less training, and more open to new opportunities.

What's confusing is that businesses say they want multitaskers, and yet, research continues to demonstrate the human brain as incapable of multitasking. When we *multitask*, we are actually *task-switching*; a costly habit found to deplete the brain's oxygenated glucose, or energy reserves (Kirschner & De Bruyckere, 2017). According to Goldhill (2016):

> That switching comes with a biological cost that ends up making us feel tired much more quickly than if we sustain attention on one thing. People eat more, they take more

> caffeine. Often what you really need in that moment isn't caffeine, but just a break. If you aren't taking regular breaks every couple of hours, your brain won't benefit from that extra cup of coffee (pg. 1).

It was Bandura's Bobo Doll experiments to first validate the concept of social modeling; the idea that people learn by observing the actions of others in relation to the reinforcements, positive or negative, that person ultimately receives (Bandura, 1977). With so much positive cultural reinforcement, it's no wonder our youth views multitasking as a strength (Chillakuri & Mahanandia, 2018). And yet, how business cultures define *multitasking* and how America's youth define *multitasking* may differ dramatically.

Whereas business cultures likely define multitasking as synonymous with productivity, efficiency, and the ability to manage multiple projects effectively, the term suggests the human brain as capable of performing more than one task at a time. This false belief could be what is helping to contribute to the rise of media-multitasking amongst America's youth. According to Becker et al. (2012):

> Indeed, while overall media use among America's youth increased by 20 percent over the past decade, the amount of time spent multitasking with media (simultaneously interacting with more than one form of media) increased by over 119 percent over the same period.

This behavior – interacting with two or more outlets of media at once - is concerning as media-multitasking has been linked to a reduction of grey matter in the brain (Loh, K., & Kanai, R., 2014), memory problems (Uncapher, M., et al., 2016), decreased productivity (Brooks, S., 2015), and – as previously mentioned - increased depression, social anxiety, and stress (Becker, M., Alzahabi, R., & Hopwood, C., 2012).

Not only does promoting the ability to multitask hurt individuals, it also hurts the businesses they work for; resulting in lowered productivity and increased absenteeism, turnover, and health-insurance costs (Fryer, 2005). For all of these reasons, businesses are encouraged to clarify what specific behaviors they are looking for when sourcing multitaskers (i.e. task switchers). In addition, they are called to educate their employees – especially newly hired members of Generation Z – as to the dangers of media-multitasking and help them identify strategies for reversing its negative effects. Mental Downtime was created for this purpose and it is suggested that businesses offer the program within new hire onboarding programs.

Definition of Terms

In their research, Posner and Rothbart (2009) found that *attention training* (i.e. straightforward executive network tasks) and *attention state training* (i.e. mindfulness meditation) can help to enhance self-regulatory behaviors. This aligns with what mystics and religious traditions have espoused for centuries, as well as with what Killingsworth and Gilbert found in their study, "A Wandering Mind is an Unhappy Mind" (2010). These two practices are employed within Mental Downtime and defined below.

Attention Training

Attention training refers to methods developed in Europe and the USA. These practices include straightforward network tasks (Tang and Posner, 2009); i.e. asking the learner to practice focusing attention on a set of specific stimuli for a sustained period of time.

Attention State Training

Attention state training refers to methods arising from Asian traditions. These practices include integrative body-mind training (IBMT) and mindfulness (Tang and Posner, 2009); i.e.

asking the learner to focus their attention on physical sensation and observe the mental chatter it inspires (Tang and Posner, 2009).

Overview of Following Chapters

This project consists of five chapters. In Chapter One, the researcher provided an overview, statement of purpose, rationale, introduced five research questions, and provided a definition of terms. In Chapter Two, the researcher conducts a literature review to explore the five research questions posed in Chapter One. Chapter Three describes the instructional product – i.e. Mental Downtime - in greater detail. This chapter also outlines the evaluation model used to survey subject matter experts (SMEs). In Chapter Four, an official description of the Mental Downtime is outlined and the learning theories that guided the development are discussed. Chapter Five – the final chapter – is comprised of findings, conclusions and recommendations. In the appendix the reader will find references, IRB letter and approval, and the SME evaluation model including survey answers. Mental Downtime is available to the public on the designer's website; https://www.cmpdesign.org. A PDF version of course has also been included within the appendix.

CHAPTER TWO

REVIEW OF LITERATURE

For *attention training* or *attention state training* to take place, the engaged attention of the learner is required. Within this section, the researcher looks to neuroscience to better understand how human attention operates. Suggestions are then made as to how virtual instruction can work to capture, sustain, and enhance human attention. In addition, arguments are made as to (a) why training attention is a value-add for business and (b) what support from leadership is required to ensure the success of corporate training initiatives.

Three Varieties of Attention

Within *Attention to Attention*, Ocasio (2011) collected, organized, and cross-examined a variety of studies from the field of organizational science and neuroscience. First, he demonstrated the dramatic extend in which the definition of attention varied within organizational science, pending various metatheories and understandings of the construct itself. Next, he looked to the field of neuroscience to better understand the various brain mechanisms and processes responsible for individual level attention.

What Ocasio (2011) found was that the human brain is not responsible for one, but *three* varieties of attention: (1) selective attention, (2) attentional vigilance, and (3) executive control. Selective attention grasps attention, attentional vigilance sustains it, and executive control manages planning, problem solving, conflict resolution, and decision-making. With these definitions in mind, the researcher aims to address the research questions posed within Chapter One. The first topic explored encourages companies to leverage instructional design to enhance the attentional abilities of their employee population; especially now, as Generation Z begins to join the workforce.

Consciously Directing Attention = Foundation of Self-Directed Learning

As Learning and Development (L&D) departments in business organizations are designed to help their workforce reach their potentials, it is smart to ensure all employees are educated as to how they might enhance their attentional resources; especially with rates of attention deficit hyperactivity disorder (ADHD) on the rise (Xu et al., 2018; Ra, et al., 2018; Garfield et. all, 2012). Without the ability to direct one's attention, no other abilities can be developed consciously. Mastering this skillset truly is the foundation for self-directed learning; an activity intrapreneurs must embrace. Not only intrapreneurs, but the workforce at large.

Drucker (1999) states that "the most valuable asset of a 21st-century institution (whether business or nonbusiness) will be its knowledge workers and their productivity" (pg. 144). Drucker (1999) is reminding us that – to succeed in the 21st century - one must possess skillsets vastly different from those required for assembly line work of the past. If the modern workforce hopes to solve the complex problems of the future, develop innovative solutions, stay up-to-date on continuously evolving technology, or collaborate with an increasingly diverse employee populous, procedurally-bound muscle memory is not sufficient. We need employees capable of identifying and retaining focus on problems worth solving.

Unfortunately, developing future leaders capable of filtering out unnecessary distractions poses a problem to contemporary business. Research suggests that smartphones distract us to a point wherein we are unable to achieve flow at work (Montag & Walla, 2016) and that *smartphone addiction* is becoming widespread (e.g. Duke & Montag, 2017; Kwon et al., 2013; Lanaj, Johnson, & Barnes, 2014; Lin et al., 2015). This is concerning as frequent digital media use has shown to increase the risk of having symptoms of ADHD by about 10% (Ra, et al., 2018). This may help to explain why researchers noted a 66% increase in attention deficit

hyperactivity disorder (ADHD) from 2000 to 2010 (Garfield et. all, 2012). Still, despite its ubiquity and increased utilization within the American workplace, many remain unaware as to how technology is impacting our individual abilities to focus.

However, it's not technology that is to blame. Technology is not the problem. The problem is how we use it. Researchers within the cognitive sciences and psychology are finding that - pending its utilization - technology can have a positive and / or negative impact on our ability to focus (Ophir, Nass, & Wagner, 2009; Bavelier et al., 2012).

Ophir, Nass, and Wagner (2009) find that individuals who regularly consume multiple streams of media at once (high media multitaskers) are more susceptible to breadth bias than those who single-task. That is, high media multitaskers are more easily distracted than low media multitaskers; possessing less ability to filter out useless information from their internal and external environments. Interestingly, this is not the first research project to confirm the negative impact multitasking has on human cognition. In fact, Ophir et al. (2009) perform their research "in light of evidence that human cognition is ill-suited both for attending to multiple input streams and for simultaneously performing multiple tasks" (pg. 1).

Whereas *Cognitive control in media multitaskers* demonstrates the negative impact of multitasking with technology, *Neural bases of selective attention in action video game players* demonstrates the positive impact of *single tasking* with technology. In their research, authors Bavelier, Achtman, Mani, and Focker (2012) note that action video game players are better at filtering out irrelevant distractions than their non-video gaming counterparts. Though they don't call out single tasking as the specific reason as to why video gamers are able to retain focus on their central mission, it makes sense considering the following (Bond Chapman, 2013):

> The longer we stay actively engaged in complex thinking and meaningful work, the more energized the brain is and the more cognitive reserves are being built, (pg. 28).

Bond Chapman (2013) is talking about neuroplasticity; essentially, what we practice - both mentally and physically - we grow. If we media-multitask – following the dopamine laden path to more and more information – we reinforce those mental behaviors; ultimately, resulting in breadth bias (Ophir et al., 2009). However, if we practice filtering out distractions and retaining focus on the problem at hand, the more focused we become (Bond Chapman, 2013). This is why Bond Chapman (2013) tells us "single-tasking is one of the best ways to prime the mind for strategic attention" (pg. 1). In conclusion, whereas media-multitasking with technology has proven scientifically responsible for decreasing attentional abilities, single tasking – whether virtually or in the real-world – can reverse these damaging effects.

For this reason, the simple act of retaining focus on instruction – and disregarding distraction – can be considered *attention training*. However, before attention is trained, it must be engaged. Learners must notice the instruction, identify with it, and become curious to learn more. For this reason, the topic of selective attention will now be discussed; specifically, in terms of how emotion can be leveraged as a mechanism for engagement.

Emotion to Engage Selective Attention

Working memory simply cannot process all the information coming at us every moment from our external and internal environments (Sweller, 1988), for this reason, the brain filters incoming sensory input based on goals, task demands, prior cognitive orientations, and top-down attentional processes (Ocasio, 2011). This is a complicated way of saying that the brain attunes itself to the information that best serves its needs. To better understand what exactly these needs are, we look to better understand the inner-workings of the human brain. This – of course - is a

new area of study with *much* to be learned, however, neuroscientists have begun to provide some interesting insights.

The human brain has been argued – from the perspective of neuroscience - as hardwired to seek three core needs: (a) safety, (b) satisfaction, and (c) connection (Hanson, 2016). This idea explains the evolutionary objectives of the brain-stem, the limbic system, and the cortex; the three *layers* of the human brain. If this is the case, it can therefore be assumed that selective attention attunes itself to information relevant to achieving and maintaining these core needs.

Here's where it gets tricky. Though our goals our universal, our ideas as how to reach them are incredibly diverse. For this reason, selective attention can be difficult to capture; as different ideas appeal to different individuals. This challenge is intensifying as we find ourselves amidst the Age of Information. No longer are Americans watching the same three channels. The innate drive to differentiate coupled with the excess of information provided on the internet and it's no wonder individualism is on the rise (Santos, Varnum, & Grossmann, 2017).

We are certainly unique in the ways we seek to meet and maintain our core needs; and yet, we are all looking for the same things. For this reason, Instructional Designers must also understand what core need they are addressing within their instruction. That will be key in helping establish an emotional connection and engaging a diverse audience.

Establishing an emotional connection is important as emotion – not cognition - drives human behavior (Lerner et al., 2015). Our emotions appear to operate as an internal compass of sorts, guiding us towards whatever it believes will help us to meet and/or maintain our needs and away from perceived threats (Freud, 1991). Essentially, if something evokes emotion in us, we are wired to pay attention.

To better understand how to best evoke emotion in potential learners, we look to the world of marketing. Within their research, Teixeira et al. (2012) sought to understand the attentional impact of evoking emotions within advertisements. They hypothesized that the emotions of joy and surprise would lead to increased concentration, with the effects of surprise being stronger (H1). Additionally, they hypothesized that emotions of joy and surprise would lead to increased information retention, with the effects of joy being stronger (H2).

Results garnered from the study confirmed exactly what Teixeira et al. (2012) hypothesized, highlighting two advertisements especially successful in predicting viewer concentration and retention. In confirmation of H1, not only did the emotions of joy and surprise lead to increased concentration, the effects of surprise had an impact 3 times stronger than the effects of joy. As for H2, the emotions of joy and surprise lead to increased information retention, noting joy with the stronger impact. The two commercials noted for their exceptional engagement and retention rates came from Bud Light, and Apple/Mac.

Conclusions drawn from Teixeira et al. (2012) encourage Instructional Designers to employ an emotional peak at the very beginning of the instruction; suggesting that emotions of joy and surprise are most effective in engaging selective attention (Teixeira et al., 2012). Though this technique has proven effective in capturing human attention, different techniques are required to sustain it. For this reason, we now move to discussing attentional vigilance; specifically, how digital storytelling can be an effective technique in keeping learners focused throughout an entire course.

Digital Storytelling to Retain Attentional Vigilance

If selective attention is responsible for grasping attention, attentional vigilance is responsible for sustaining it. Attentional vigilance describes the ability to maintain concentration

on a particular stimulus (Ocasio, 2011). In today's world of information overload, there is no *quick trick* to sustaining attentional vigilance. Instructional Designers are in competition with the rest of the world when it comes to capturing and sustaining human attention. However, what Instructional Designers can do is leverage the power of a good story.

Since the beginning of time, human beings have used storytelling to connect to each other, communicate new ideas, and relay complex ones (Issel, 2012). In education, real-life stories – not to mention fables and fairy tales - are often used to help create feelings of empathy and drama to help relay the importance of various concepts, ideas, and challenges. In fact, a good story is something the brain is wired for. In the words of Brene Brown,

> We actually know that we're hardwired neurobiologically for story. The brain absolutely recognizes the narrative pattern of beginning middle and end. It relies on story to understand how when and why to protect us when we're not safe. We have used story from the beginning of time it's how we teach it's how we express ourselves it's how we gather it's how we how we share a sense of belonging with each other. (15:02-15:42)

Man craves meaning (Frankl. 1978) and stories establish meaning. They do not require the audience to have any prerequisite knowledge of the characters, plot line, or world of the story; all of this information unfolds as the story progresses. This is an important concept for Instructional Designers to embrace when crafting instruction.

Instructional Designers must pay careful attention to establishing context. They cannot assume that learners will interpret concepts or ideas in a particular way. As expressed within the previous section, each learner is their own unique individual with their own goals, task demands, prior cognitive orientations, and top-down attentional processes (Ocasio, 2011); all of which influence the way in which the information is received. The borrowing principle and

randomness as genesis principle from Sweller (2006) help to explain the mechanics behind this process.

The Borrowing Principle

The borrowing principle explains that almost all knowledge held in long-term memory is borrowed from the long-term memory of another individual. This information can be garnered through listening to what another says, watching what they do, or reading what they have written (Sweller, 2006). As individuals encounters different information and ideas throughout their lifetime, different interpretations can be garnered from the same piece of information. It can be helpful to equate this process to sexual reproduction; just as parent's genetic material combines to create a new offspring, information combines within the human brain to create a new understanding.

As is the case with sexual reproduction, there is an element of randomness (as it is unpredictable exactly how two pieces of information will combine). It is as if each individual is operating from their own personalized mental desktop. Everyone has different information saved and filed into different folders. This helps explain why context is needed before learners are able to effectively integrate new information. First, they need to understand what folder to access from their mental desktop.

The Randomness as Genesis Principle

If relevant information does not exist within long-term memory, the borrowing principle fails to engage. Instead, the brain falls subject to the randomness as genesis principle (Sweller, 2006). When this occurs, the brain randomly generates a move and tests it for effectiveness. As it is unpredictable as to which piece(s) of pre-existing information will combine with the new, this process is subject to an even greater element of randomness. To re-visit the sexual

reproduction analogy, the borrowing principle is akin to a woman becoming pregnant from her husband whereas the randomness as genesis principle is like a woman getting pregnant from an anonymous sperm donor. In both cases, the exact characteristics of the baby cannot be predicted; however, they become even more difficult to predict in the latter scenario.

If learners lack sufficient pre-existing knowledge, the randomness as genesis principle could 1) fail to assign new information to long-term memory, or 2) combine new information with irrelevant pre-existing knowledge and potentially lead to a misguided understanding (Sweller, 2006). This is why storytelling is so effective. A good story explains absolutely everything about the world in which it takes place as well as the characters and the aspects of their previous experience driving the plot line. This approach mitigates the element of randomness in regards to how information is processed.

Essentially, to retain the attentional vigilance of an audience, it is not enough to merely provide information; rather, the Instructional Designer must make sense of it. The information must be woven into a narrative that helps to establish context and create meaning (Robin, 2005). The Center for Digital Storytelling (Robin, 2008) proposes employing the following seven elements for help in doing so:

1. A point of view; a digital story should clearly delineate the perspective of the author.
2. A dramatic question; a digital story should propose a question that is not answered immediately (helping to spark curiosity and engagement), yet is answered by the end of the story.
3. Emotional context; a digital story should be set in a context that the learner is familiar with. It should employ culturally relevant examples and language the learner can easily relate to.

4. The gift of your voice; narration helps to personalize the story and help the learners understand context.
5. The power of soundtrack; digital stories should only use music when it is supportive of, and does not distract from, the storyline.
6. Economy; digital stories should not overload the learner with too much information. The story should be told in the simplest and clearest language possible.
7. Pacing; the pacing should feel comfortable for the learner. The digital story should not progress too slowly (as the learner may become bored) or too quickly (as the learner may become overwhelmed by too much information).

Engaging selective attention and maintaining attentional vigilance in learners is critical in pursuit of the ultimate goal of enhancing executive control. This is what we look to explore within the next section.

Self-Efficacy to Enhance Executive Control

Executive control is central to planning, problem-solving, conflict-resolution, and decision-making (Ocasio, 2011). When we talk about executive control, we are talking about the ability to hold multiple "schemas" – i.e. concepts, ideas, knowledge – and bring them together in working memory. It is the ability to think critically, creatively, collaboratively, to find patterns, and to hold multiple – often opposing – ideas and beliefs in our head at the same time.

While executive control attends to our intellectual success, it also manages interruptions (Ocasio, 2011) as well as personal well-being. Executive control is essentially the director of working memory, the location in which both information and emotional processing take place (Schweizer et al., 2013). An individual with high executive control is able to self-regulate, adept

at managing disruption (both internal and external), and retaining focus on the issue at hand (Ocasio, 2011).

As cited above, information and emotional processing each take place within working memory (Schweizer et al., 2013). For this reason, information processing can easily become derailed if the needs of the brain – safety, satisfaction, and connection (Hanson, 2016) – have not been met. When the needs of the brain have not – or have perceived to have not - been met, it falls into *reactive mode* (Hanson, 2016):

> The reactive mode assumes that there are urgent demands, so it's not concerned with your long-term needs. In this disturbed, allostatic state—which ranges from subtle to intense—bodily resources are depleted while building projects such as strengthening the immune system are put on hold, adrenaline and cortisol course through the blood, and fear, frustration, and heartache color the mind. (Hanson, 2016, pg. 46).

In the reactive state, there is no time for learning. The only additional information the brain has room for is information it believes will help it to immediately meet and/or maintain the core need (or needs) under threat. For this reason, it is incredibly important that Instructional Designers do everything possible to make learners feel safe, satisfied and connected when completing instruction; helping settle the learner into *responsive mode*; i.e. the body's natural resting state and the birthplace of curiosity and creativity (Hanson, 2016).

To settle into responsive mode, one must possess a strong sense of self-efficacy. Essentially, the brain must understand that it is capable of meeting and maintaining its core needs. Self-efficacy was initially defined by Bandura as one's belief in their own abilities to succeed in a specific situation or accomplish a certain task (Bandura, 1977). According to Bandura's (2012) social cognitive learning theory (SCLT), self-efficacy develops through (a)

mastery experiences, (b) social modeling, (c) social persuasion, and (d) physical and emotional states.

Mastery Experiences

Self-efficacy can develop through mastery experiences; however, if one continuously encounters easy success and quick results, they can become discouraged after encountering a minor setbacks and/or failure. To develop resilient self-efficacy, one must have experience overcoming obstacles through determined effort and learn to manage their emotions; it is important that one's failure be viewed as a learning opportunity.

Social Modeling

Another way in which self-efficacy can develop is through social modeling. In the same way that observational learning through modeling is effective in shaping behavior, it can also help to enhance self-efficacy. When one observes someone similar to themselves succeeding through determined effort, it helps to reinforce the observer's ambitions and restore faith in their own capabilities.

Social Persuasion

Social persuasion is another way in which self-efficacy can develop. When one exists in a positive environment and is persuaded by others to believe in themselves, they are more likely to overcome more obstacles through determined effort. Conversely, when one exists in a negative environment and is subject to constant criticism and/or perceived disapproval, they will be less likely to overcome the obstacles necessary to developing resilient self-efficacy.

Physical and Emotional States

Finally, physical and emotional states help to partially inform learner self-efficacy. Whereas anxiety and depression reduce self-efficacy, it can be increased by enhancing physical

strength and stamina. In addition, self-efficacy can increase when one is able to correctly identify the underlying reasons guiding perceived physical and/or emotional states.

It should come as no surprise that research positively correlates high levels of self-efficacy with high levels of academic performance (Vasile et al., 2011). Working memory can only hold 5-9 pieces of information at a time (Kalyuga, 2012) and self-doubt takes up a lot of room. What's interesting is that social modeling and social persuasion are two key areas in which self-efficacy can be developed. What this suggests is that – for optimal learning takeaway within the business setting – instructional and leadership messaging must be in alignment. For this reason, we now look to explore the responsibilities of business leadership in terms of launching successful instructional initiatives.

Business Leaders to Operate as Social Models

Just as parents have influence over their child's attitude towards school and learning, so do business leaders over their employee's attitude towards learning and professional development. As company culture has a major impact on whether or not employee learning and development is taken seriously, business leaders must work to champion cultures of continuous education by (a) possessing and advocating growth mindsets, (b) continuously championing the benefits of learning; and (c) making educational initiatives measurable.

Though it focused on children within the academic environment, the study by Anderson and Neilsen (2016) demonstrated the interplay between growth mindsets and performance success. Anderson and Neilsen (2016) hypothesized that "fixed mindsets" -- the idea that one's intelligence and learning ability is innate and static throughout their lifetime -- are to blame for unsuccessful parent intervention programs. They surmised that parents with fixed mindsets might feel as though their efforts do not have any impact in enhancing their children's abilities,

leading to unconstructive interactions. Authors concluded that their evidence "supports the theory that parents with fixed mindset are less able to support the academic progress of their children" (pg. 12113).

According to Anderson and Neilsen's (2016) research, leaders with growth mindsets are uniquely poised to help an employee population embrace educational initiatives. Additionally, companies must be certain to reward effort, not just performance. If companies solely acknowledge employee results and disregard effort, they may unintentionally foster fixed mindsets and render educational initiatives ineffective. Unfortunately, many companies fail to reward the *process* of learning and merely incentivize employees with internal competitions and external motivators based on results. When leaders fail to possess growth mindsets – focusing on continuous effort and relaying the benefits of the learning process itself -- they fail to inspire motivation for learning within their employee population.

For this reason, business leaders must also educational initiatives are measureable. Ocasio (2011) makes this suggestion himself. Within his research, he plotted fifteen organizational science studies of attention on one table and noted the variety of attention was addressed within each study. Having reviewed and discussed key findings from all studies cited, Ocasio (2011) then crafted suggestions as to how these comprehensive understandings of attention can help support an organizations continuous need for adaptation and change.

Not only do all suggestions made by Ocasio (2011) support the need for continuous education -- suggesting business leaders be mindful of foci driving them, be *forward-looking*, and working to attain similar levels of attentional engagement across all organizational channels, levels, and individuals – but also notes that when the attentional perspectives of top managers become measureable (i.e. cited within letters to shareholders), an organization is more likely to

overcome inertial tendencies and adapt to changing environments. For organizations looking to develop cultures of continuous education, this means quantifying educational goals for an employee populous, ensuring they are achievable and ongoing.

Ultimately, if business leaders hope to increase corporate IQ and raise the attentional abilities of their respective employee populous, they must ensure a culture of continuous education is part of top-down leadership messaging. They must also be familiar with the instructional content being delivered to employees and work to social model the desired behaviors. To do so, leaders must possess and advocate growth mindsets and make educational initiatives measureable. These goals can be weekly, monthly, quarterly, so long as they are continuous and achievable.

Discussion

Attention is an incredibly important resource and currently under threat. Never before in human history have we faced such a challenge. To prevent constant chimes, buzzes, and notifications from continuously hijacking employee attention and / or overstimulating their nervous systems, businesses are advised to (a) educate their employees as to the dysregulating effects of mismanaging technology and (b) help them cultivate the ability to self-regulate. They can do so by offering *attention training*; asking learners to retain focus on a particular piece of instruction while disregarding distraction. As discussed, the mere act of engaging in one task for a prolonged period of time primes the mind for strategic attention (i.e. enhances executive control).

To initially engage the learner, selective attention must be employed and it is suggested that emotion be evoked to help do so. To retain attentional vigilance, it helps to offer the instruction in the context of a digital story with a clear beginning, middle, and end. To enhance

executive control, Instructional Designers must, not only create a distraction-free virtual environment, but also, craft their messaging in a way that enhances learner self-efficacy; helping them to feel empowered and capable. Finally, support from leadership is required if the instruction is to be successfully deployed to employees within a business organization.

Recap and Overview of Following Chapter

In Chapter One, the researcher provided an overview, statement of purpose, rationale, introduced five research questions, and provided a definition of terms. Within this chapter, the researcher conducts a literature review to explore the five research questions posed in Chapter One. The next chapter will describe the instructional product – i.e. Mental Downtime - in greater detail. It will also outline the evaluation model used to survey subject matter experts (SMEs).

CHAPTER THREE

DEVELOPMENT & METHODOLOGY

Learning to self-regulate is like eating your vegetables. Though not exactly a form of instant gratification, it is essential to physical and mental health and being a good group-member (Heatherton, 2011). With enhancing self-regulatory behaviors as the goal (less media-multitasking and more mental rest). The tutorial Mental Downtime was designed to address four psychological components necessary for self-regulation (Heatherton, 2011):

> First, people need to be aware of their behavior so as to gauge it against societal norms. Second, people need to understand how others are reacting to their behavior so as to predict how others will respond to them. This necessitates a third mechanism, which detects threat, especially in complex social situations. Finally, there needs to be a mechanism for resolving discrepancies between self-knowledge and social expectations or norms, thereby motivating behavior to resolve any conflict that exists. (pg. 363).

The four following sections discuss how these psychological components were considered throughout the development of Mental Downtime.

#1: People Gauge Behavior Against Social Norms

Media-multitasking *is* a social norm and Mental Downtime calls into question how appropriate this really is. In true digital storytelling fashion (Robin, 2008) – the tutorial adopts a point-of-view; arguing multitasking as addictive and self-perpetuating; citing research from Levitin (2015) and Ophir et al. (2009) to make the claim. Before these arguments are made, learners are asked to consider their own media-multitasking behavior. This choice was made under the assumption that – before hearing the "right" answer - learners working memory may be more open to honest self-reflection.

#2: People Need to Understand Other's Reactions

The desire to "fit in" and refrain from violating social norms is a powerful motivator in terms of behavior (Heatherton, 2011). A more cultivated or enlightened individual may not rely so heavily on other-esteem; however, seeking social acceptance has proven itself to be evolutionarily beneficial in terms of promoting collaboration (Harari, 2017) and – therefore - appears to be a default setting of the brain. The desire to be viewed positively is especially prevalent at work; wherein social rejection has a direct impact on one's livelihood. For this reason, Chapter Two addresses the need for company leadership to reflect top-down messaging consistent with virtual instruction provided to employees.

It is suggested that Mental Downtime be offered to employees during new-hire orientation; however, if leadership fails to endorse the suggested behavior – or models the opposite - the course will fail to be effective. As many business leaders may be tempted to media-multitask and hesitant to endorse regular breaks throughout the work-day, the course takes a moment to acknowledges the financial incentive of businesses promoting balance within *work hard, play hard* grit-devoted cultures. To avoid information overload, this point is made quickly and does not operate as a central theme. For this reason, additional presentations may need to be developed to educate business leaders of the value of promoting self-regulation amongst their employee populous.

#3: People Need to Detect Threat

Media-multitasking *is* a threat; and yet, its increasing prevalence (Becker et al., 2012) makes its threatening nature difficult to detect. To avoid confusing media-multitasking with the ability to juggle multiple projects - the hypothesized business definition of multitasking - Mental

Downtime was developed. The course aims to help learners recognize the dysregulating (i.e. threatening) effects of media-multitasking and identify mental rest as a self-regulating remedy.

To establish emotional context – another component of a digital story (Robin, 2008) – the language employed is simple and culturally relevant examples are included. For example, the following quote from Naval Ravikant (2019) helps make Mental Downtime's central warning abundantly clear:

> These are addictive - Facebook, Instagram, Twitter - these are weaponized. You have social statisticians and scientists and researchers and people in lab coats - literally the best minds of our generation figuring out how to addict you to the news. And if you fall for it - if you get addicted - your brain will get destroyed.

#4: A Mechanism is Needed for Conflict Resolution

It's not enough to merely identify a threat. Learners must understand what behavior to adopt instead. For this reason, Mental Downtime provides learners with the opportunity to engage in *attention state training* in the form of a 20-minute nervous system reset. This experiential learning tool asks learners to attend to physical sensation; helping them to practice interoception.

It has been demonstrated – through science and ancient tradition – that enhancing interoceptive awareness enhances emotional regulation (Füstös et al., 2013; Pollatos et al., 2013; Sullivan et al., 2018). In fact, the benefits of interoception have given rise to new therapeutic practices like somatic experiencing and trauma-sensitive yoga; two exercises which have shown to combat the negative impacts onset by media-multitasking, overwork, and chronic stress (Epayne et al., 2015; West et al, 2017). Though the developer of Mental Downtime is not certified as a somatic experience practitioner, she is a certified yoga instructor educated in

trauma-sensitive yoga by David Emerson and Jenn Turner at the Kripalu Institute in Boston, Massachusetts.

Target Audience

Mental Downtime's target audience includes newly hired employees in the business environment; specifically, members of Generation Z. This is because Generation Z - often described as the "always-on generation" - are touted for their ability to multitask. In fact, many publications and media sources assume Generation Z – referred to as "digital natives" - to be experts in the matter (e.g. Clark & Ernst, 2009; Dochy et al., 2015; Skiba & Barton, 2006). This theory is at odds with scientific research demonstrating the human brain as incapable of multitasking. When we *multitask*, we are actually task-switching; a costly habit found to deplete the brain's oxygenated glucose, or *energy reserves* (Kirschner & De Bruyckere, 2017).

Ultimately, learners should be individuals who attempt to multitask regularly - who find focusing attention to be an issue - as well as those with *Type A* personalities who feel the need to go-go-go and have forgotten how to relax. Ultimately, the course aims to serve anyone struggling with a dysregulated nervous system (i.e. those with addiction issues, depression, anxiety, eating disorders, etc.)

Subject Matter Experts

The following users have been asked to review Mental Downtime so as to source a wide variety of perspectives.

1. A professional Instructional Designer (so as to collect feedback from someone actively working in the field.)
2. An HR Director (so as to collect feedback from someone well versed in the business world).

3. A Director of Learning Strategy & Design (so as to collect feedback from someone in the professional field of Instructional Design).
4. A member of Generation Z who struggles with anxiety and depression (so as to collect feedback from whom this course is intended).
5. A Sales Manager (so as to collect feedback from someone who has recently welcomed a member of Generation Z to their team).
6. A Trauma-Sensitive Yoga Instructor (so as to collect feedback from someone with experience facilitating what is offered within the 20-minute nervous system reset).

Instruments

Participants were asked to evaluate Mental Downtime, and provided with an evaluation form upon review (Appendix A). The evaluation form was constructed utilizing SurveyMonkey; an online survey development cloud-based software (SurveyMonkey, 2019). This specific tool was chosen as it is free and automatically analyzes survey results for the user. The questions posed were qualitative in nature in the form of multiple-choice and short-answer.

Without access to a paid account, SurveyMonkey limits surveys to 10 questions maximum. The developer wished to include two rating scale questions - asking to rate overall enjoyment of the course itself as well as the nervous system reset - but what unable to do so. Instead, questions about behavioral change were prioritized. First, participants were asked to identify self-regulatory behaviors prior to completing. To judge effectiveness, participants were then asked how they plan to approach these same behaviors now – after having completed Mental Downtime. The final two questions asked participants to identify their favorite and least favorite aspects of the prototype. The developer included these unguided short-answer questions in hopes of garnering un-biased and constructive feedback.

In addition to the qualitative survey issued, participants who operate within the field of Instructional Design – the Instructional Designer and Director of Learning Strategy & Design – were provided with a second evaluation form (Appendix B). This form was adapted from the Alessi and Trollip (2001) survey example to fit the specifications of Mental Downtime. It was provided to subject matter experts (SMEs) as an interactive PDF created utilizing Adobe InDesign; a software application that can be used to create flyers, brochures, ebooks, etc. (Adobe InDesign, 2019).

Procedure

An email was sent to SMEs asking if they would be willing to complete an evaluation of Mental Downtime (Appendix C). Within the email brevity was prioritized and instructions regarding how to complete were identified. Hyperlinks to Mental Downtime - available at https://www.mentaldowntime.org – and the evaluation forms were included. SMEs were given two weeks to complete their evaluation. Survey results were analyzed after the date provided.

Recap and Overview of Following Chapter

In Chapter One, the researcher provided an overview, statement of purpose, rationale, introduced five research questions, and provided a definition of terms. In Chapter Two, the researcher conducted a literature review to explore the five research questions posed in Chapter One. This chapter described Mental Downtime in greater detail as well as outlined the evaluation model used to survey subject matter experts (SMEs). In the next chapter, an official description of Mental Downtime is outlined and the learning theories that guided its development will be discussed.

CHAPTER FOUR

DESCRIPTION OF THE INSTRUCTIONAL PRODUCT

Mental Downtime was created to serve as an example of what virtual education - designed to help learners cultivate internal strengths - might look like. (Ultimately, the goal is to develop an entire curriculum to help budding intrapreneurs develop the internal strengths necessary for 21st century work and – of course - overall well-being.) The course reviews (1) the negative impacts of media-multitasking, (2) why *task-switching* is a more appropriate term for *multitasking*, and (3) why we should take more breaks throughout the day. At the end of the instruction, a 20-minute nervous system reset is provided; a yin-inspired class designed to shift the nervous system from fight-or-flight to rest-and-digest.

Product Description

Goal

The main goal of Mental Downtime is to enhance learner's self-regulatory behaviors; specifically, less media multitasking and more mental rest. The secondary goal of Mental Downtime is to provide virtual education wherein learning – as well as attending to physical sensation - is experienced as enjoyable and intrinsically rewarding.

Objectives

Upon completion of Mental Downtime, learners should be able to:

1. Define multitasking as "task-switching".
2. Understand and explain the value of mental rest.
3. Differentiate between physical sensation and mental chatter.

Learning Tasks

As the average American is said to receive over 100 newspapers worth of information a day (Hilbert, 2012), Mental Downtime was built under the assumption that learners are already overloaded with information. The instruction works to target those most in need of mental rest and so the course was consciously designed to reduce cognitive load as much as possible. To retain engagement without demanding unnecessary mental work from the learner, the course delivers one piece of information at a time; asking the learners to *continue* to learn more. (Social media platforms like Instagram served as inspiration for this *keep scrolling* method.) Aside from (1) selecting *continue*, (2) pressing *play* for a video, and – perhaps – (3) clicking to explore a linked asset, nothing is required from the learner until the end of the course.

At the end of the course, a 20-minute nervous system reset is provided. Just as the entire course is intended to be provided as voluntary, so is this exercise. Learners are given the option to participate if they find body awareness challenging - or are open to something new. The instruction works to distract learners from the chatter of the mind by focusing them on the sensations of the body. This learning task was selected on the basis that "as our sensory appreciation improves, we may find that we are getting clearer messages about our true needs" (Gelb, 1994, pg. 56).

Instructional Strategies

Those familiar with Instructional Design may find it surprising that Mental Downtime rejects nearly all behaviorist methods. Though value-add and typical of most virtual learning courses – i.e. expressed learning objectives, knowledge-checks, and real-time feedback – these techniques are not employed. This decision was made after considering reciprocal determinism;

which – in theory - suggests those who have suffered negative educational experiences may avoid interacting with anything that comes across as too academic.

Reciprocal Determinism

Reciprocal determinism states that personality is not the product of behavior alone, but of one's (1) behavior – skills and actions -- as well as their (2) environment – social and physical surroundings -- and (3) personal characteristics – thoughts, emotions, expectations, beliefs, goals, etc., (Pastorino & Doyle-Portillo, 2013). As all three systems interact, a change in one will influence a change in the others. The constant interaction among these three factors as reciprocal determinism, (Pastorino & Doyle-Portillo, 2013).

Considering the theory above – and the fact that academics was recently cited as the #1 stressor for teens (Horowitz & Graf, 2019) - Mental Downtime was careful to avoid any methods that may remind learners of overly structured and rigid academic environments. This approach - which considers the internal reality of a learner – provides one example as to how cognitivism was employed within the instructional product.

Cognitivism

Whereas behaviorist methodology places emphasis on observable behavior, cognitivism works to explain the prior knowledge and mental processes inspiring said behavior (Yilmaz, 2011). Cognitivists view (1) learning as an active process "involving the acquisition or reorganization of the cognitive structures through which humans process and store information" and (2) the learner as an active participant in the process of acquiring and integrating new knowledge (Yilmaz, 2011, pg. 205).

The list below denotes additional ways in which cognitivist principles were employed within Mental Downtime:

1. *The Subject Matter.* Helping learners become self-regulated is – in fact – a strategy suggested by cognitivists to help learners process information more efficiently and effectively (Yilmaz, 2011).
2. *Chunking Content.* Understanding that short-term memory is limited in the amount of data it can process simultaneously (Sweller, 1988), information within Mental Downtime is presented in short bursts; introducing one idea at a time.
3. *Scaffolding Material*. The content provided within Mental Downtime links new material with information previously reviewed; helping to (1) repeat information without being redundant and (2) weave the information into a larger narrative.
4. *Modeling*. Mental Downtime suggests that learners take breaks throughout the day. To help model what this might look like, a 20-minute nervous system reset is provided at the end of the course.

Constructivism

Constructivism is all about constructing meaning from experience (Merriam, Bierama, 2013). The decision to include the 20-minute nervous system reset – the final (and only) activity within Mental Downtime – is constructivist in nature; designed to provide learners with a hands-on experience; feeling for themselves what it's like to self-regulate.

Not only does the nervous system reset allow learners time to process the information they've just received – an effective technique in enhancing learning takeaway (Chen et al., 2017) - it is specifically designed to help connect learners to the physical sensations of the body. Not only does this qualify as *attention state training* – a practice that has shown to increase self-regulation (Posner and Rothbart, 2009) – it is an exercise called for by John Dewey himself; one of the influencers behind the constructivist movement. Within his introduction to F.M.

Alexander's *Constructive Conscious Control of the Individual* (1994), Dewey stressed the importance of accurate sensory appreciation when he wrote the following:

> In all matters that concern the individual self and the conduct of its life there is a defective and lowered sensory appreciation and judgement, both of ourselves and our acts, which accompanies our wrongly adjusted psychophysical mechanisms…We have become so used to it that we take it for granted. It forms, as [Alexander] has clearly shown, our standard of rightness. It influences our every observation, interpretation, and judgment. It is the one factor which enters into every act and thought. (pg. xxi)

Dewey is reminding us that the way in which we habitually respond to physical sensation is not always appropriate. He reminds us that if the information we receive from our sensations is distorted, so will be the ideas that follow. As stated within Mental Downtime, "when we pay focused attention to our bodily sensations, we can recognize the ebb and flow of our emotions and, with that, increase our control over them" (Van Der Kolk, 2015, pg. 210). In providing the nervous system reset, learners have the opportunity to directly experience what it feels like to notice and attend to physical sensation; a simple and effective self-regulation technique (Epayne et al., 2015; West et al, 2017).

Media Selection

Mental Downtime was created utilizing Articulate Rise 360; a responsive e-learning authoring tool selected for its ease of use and minimalist design. Utilizing its pre-built lessons known as "blocks" dramatically reduced the time typically needed to manually program navigation and course interactions. In effect, the designer was able to allocate more time to script development and content curation.

Mental Downtime was designed to look less like a typical online learning course and more like a digital storybook (following the guidelines of Digital Storytelling as outlined within Chapter Two). To create the illustrations, Vyond – a cloud-based, animated video creation platform (Vyond, 2019) – was employed. Vyond's stock assets were utilized to create 4-second GIF animations to accompany course content. In one instance, Vyond did not have any relevant stock assets and Adobe Illustrator was employed to craft the desired image. In addition to the GIF animations, Vyond was also utilized – along with Adobe's Premiere Pro and Avid's Pro Tools – to create three of the four videos embedded within Mental Downtime. The fourth video (the first to appear within the instruction) was sourced from YouTube.

Mental Downtime is hosted and available on a website designed utilizing Squarespace; a software that utilizes pre-built website templates and drag and drop elements to create and host webpages (Squarespace, 2019). The program could also be hosted on a learning management system (LMS) so that detailed interaction data could be collected from each learner. This would provide valuable feedback for the designer and would be necessary – for tracking purposes - if offered by a company to its employees.

Personnel Analysis

As this tutorial was developed as a master's thesis project, all of the planning, design, and development was done by a single individual. During the development phase, the designer consulted with a computer programmer to resolve an issue preventing the course from being made available on a specific URL. In addition, the designer approached several subject matter experts to participate in testing and evaluating the alpha and beta versions. Table 1 (Appendix D) shows the tasks involved in each phase, along with the estimated number of hours per task, and major deadlines.

Production Work Plan

Design and development of Mental Downtime took place over the course of two academic semesters (January 2019 – August 2019). Preliminary planning took place over the course of the previous two years; including conducting needs and learner analyses as well as content research. Table 2 (Appendix E) estimates project start and completion dates. Permission to complete this research was awarded by the Master of Science in Instructional Design and Technology Program Director at CSUF, copies of the request for an IRB waiver letter and approval letter are in Appendix F and Appendix G.

Estimated Budget

Mental Downtime was developed as a master's thesis project and so all time spent was done on a voluntary basis. However, the approximate cost of this product has been assessed and outlined within Table 3 (Appendix H).

Recap and Overview of Following Chapter

In Chapter One, the researcher provided an overview, statement of purpose, rationale, introduced five research questions, and provided a definition of terms. In Chapter Two, the researcher conducted a literature review to explore the five research questions posed in Chapter One. Chapter Three described Mental Downtime in greater detail as well as outlined the evaluation model used to survey subject matter experts (SMEs). Within this chapter, an official description of the instructional product was outlined and the learning theories that guided the development of Mental Downtime were discussed. The next and final chapter is comprised of findings, conclusions and recommendations.

CHAPTER FIVE

FINDINGS, RECOMMENDATIONS, & CONCLUSIONS

On June 11, 2019, an email was sent to SMEs asking if they would be willing to complete an evaluation of Mental Downtime. Six individuals participated; however, not the original six as identified within Chapter Three. Ultimately, the HR Director, the Director of Learning Strategy and Design, and the Sales Manager were unable to complete. As these three individuals were selected for their close ties to the business world, this was a loss. To fill the gap, the perspectives of three additional Instructional Designers were sourced.

Findings

The feedback garnered was extremely encouraging; 100% of participants stating that they (1) were motivated to spend less time media-multitasking and (2) plan to schedule mental breaks throughout their days after having completed the course. According to this feedback, the main goal of the instruction – inspiring less media-multitasking and more mental rest - was achieved.

The second goal of the instruction was to provide virtual education wherein learning – as well as attending to physical sensation - was experienced as enjoyable and intrinsically rewarding. Though the survey did not include a question asking learners to rate their level of overall enjoyment, a question asked learners to state how they felt after having participated in the 20-minute nervous system reset. Their responses (Appendix A) were universally positive and reflective of the designer's intention to help learners to feel balanced, calm, centered, and recharged. In addition, four of six respondents cited the 20-minute nervous system reset when asked about their favorite aspect of the course.

When asked about their least favorite aspects of the course, answers varied. Half of the respondents merely reiterated their enjoyment of the course; the additional three responses

providing some helpful suggestions. One respondent stated they "don't always have 20 minutes," and that they would be "interested in shorter 5-7 min exercises" (Appendix A). Ultimately, it would be beneficial to have a library of nervous system resets so that learners could define the time they spend participating in the practice. Ideally, this library would be categorized so that learners could define – not only the time they spend – but also, if there's a particular part of the body they wish to focus on.

Another respondent mentioned the ads in the first video and how distracting they were. As the video was curated content sourced from YouTube, the ads cannot be removed. (Let us take a moment to acknowledge the irony of a distracting video on the internet about distractions on the internet.) This same respondent also noted in the final video - when introducing the nervous system reset – that the video and audio were out of sync. Attempts were made to align these components.

In addition to the evaluation provided to the six SME's, an additional survey was provided to one of the Instructional Designers for a more thorough review of the course. All feedback garnered was extremely positive (Appendix B); the respondent citing that "the course made [her] want to make adjustments in [her] day to day life." This feedback suggests that Mental Downtime successfully stimulated behavioral change; however, one has to question if it simply inspired (a) a burst of motivation or (b) actionable follow-through. Follow-up surveys would be required to find out how learner behavior did or did not change after completion of the course.

Recommendations

The researcher posed five research questions in Chapter One. These questions were explored in detail within Chapter Two. Within this section, specific recommendations are outlined.

Research Question One

The first research question posed asked why should companies leverage instructional design to enhance the attentional abilities of their employee population. Within Chapter Two, the ability to consciously direct attention was defined as the foundation for self-directed learning; a skillset intrapreneurs – and the workforce at large – must embrace. With rates of attention deficit hyperactivity disorder (ADHD) on the rise, company leadership is called to better understand this attentional crisis and implement strategies to combat its negative impacts. To do so, the researcher poses the following suggestions:

1. *Model single-tasking behaviors.* As single-tasking has shown to reverse the negative impacts of multitasking, leaders are encouraged to dedicate their entire attention to whatever task and / or conversation is at hand.
2. *Stop praising "multitaskers".* We now know that multitasking is a misnomer. Not only that, the attempt to multitask drains the brain of energy much more rapidly than focusing on one thing at a time. For this reason, company leadership is asked to specifically define what they are looking for when requesting multitaskers.
3. *Educate the employee population as to how media-multitasking enhances breadth bias.* Mental Downtime was designed and developed to help address this need.

Company leadership is encouraged to offer the course as optional instruction to newly hired employees.

Research Question Two

The second research question investigated how emotion could be leveraged to engage selective attention. Within Chapter Two, Instructional Designers were encouraged to engage selective attention by initiating emotional peaks that inspire joy, surprise, or even curiosity at the onset of the training (Arnone, Small, Chauncey, & Mckenna, 2011). There are many ways in which to do so and Instructional Designers are encouraged to look to the fields of marketing and entertainment for inspiration. Within Mental Downtime, the following choices were made:

1. *Ask a question / introduce an idea and don't address it right away.* Television and movies often switch to different storylines without resolving the issues from the previous scene; resolving all loose ends by the end of the program. Within Mental Downtime no learning objectives were included, and the idea of taking mental breaks (i.e. "Mental Downtime) was not addressed until the fifth section of the course.
2. *Be mindful of aesthetic.* A powerful image, background soundtrack, or themed typography can do wonders when it comes to creating a particular mood within a course. Within Mental Downtime, a particular mood was created by employing GIF animations with a consistent look and feel.
3. *Use emotive language.* Emotional language and formatting can be extremely effective in helping make sense of information presented and potentially motivate learners to pay closer attention. For this reason, emotionally charged quotes were included within Mental Downtime to help drive home key ideas.

Research Question Three

The third research question investigated how digital storytelling help to sustain attentional vigilance. Within Chapter Two, the seven elements of digital storytelling– as defined by the Center for Digital Storytelling (Robin, 2008) were proposed. Mental Downtime employed these principles; designed to operate as a "digital storybook". Without being asked specifically about these elements, comments garnered from the Mental Downtime evaluation suggest they were effective. Three of these comments – as well as the digital storytelling element they speak to (i.e. pacing, economy, and a point of view)– are cited below:

1. *Pacing.* "The pace of the audio/voiceover was spot on."
2. *Economy.* "I didn't feel overwhelmed and my attention didn't wander as I moved through each chapter."
3. *A Point of View.* "I've never thought of my phone as an addictive slot machine before but it does make sense based on how it's designed. It's also crazy how humans basic reward system can be taken advantage of so easily it's almost scary."

Research Question Four

The fourth research question asked how enhancing self-efficacy can help to enhance executive control. This topic was addressed within Chapter Two – identifying (a) mastery experiences, (b) social modeling, (c) social persuasion, and (d) physical and emotional states as four key areas in which self-efficacy develops. To help ensure learners did not find themselves distracted by feelings of inadequacy of low self-worth, Mental Downtime made the following choices:

1. *Don't tell the learner how to feel.* Within Mental Downtime, it was noted that the nervous system reset was "designed to shift the nervous system from fight-or-flight to rest-and-digest" rather than "designed to make you super relaxed." The latter could potentially stress someone out (if they have trouble relaxing) or make them feel like they're doing it wrong (if they cannot relax).
2. *Does not shame those who media-multitask or struggle with rest.* There should be zero tolerance for shaming when crafting and / or curating instruction. There should be no shaming of those who don't know how or can't perform the behavior requested. Failure should be embraced as part of the journey and perseverance should be celebrated. Within Mental Downtime, threats are acknowledged, but the course never blames those threatened.
3. *Celebrate failure.* The introduction to the nervous system reset stated "this might be difficult if you're used to go-go-go." This subtle acknowledgement intended to remind learner's that it's okay to struggle with the practice.
4. *Employ Simple Language.* Within Mental Downtime, a conversational tone was taken and all technical terms were defined. (This choice was made as academic language can trigger frustration and feelings of unworthiness.)

Research Question Five

The fifth and final research question addressed the support required from business leaders to ensure the success of instructional design initiatives. Within Chapter Two, business leaders were encouraged to champion cultures of continuous education by (a) possessing and advocating growth mindsets, (b) continuously championing the benefits of learning; and (c) making

educational initiatives measurable. Within the context of providing virtual instruction, the following recommendations are made:

1. *The behavior requested is specifically defined.* When offering virtual instruction, it should be crystal clear as to what behavior is being requested. Within Mental Downtime, efforts were made to encourage less media-multitasking and more conscious rest. These behaviors are not easy, but they are simple. When it comes to learning, simplicity is key. In the words of Albert Einstein, "if you can't say it simply, you don't understand it well enough."
2. *Why the behavior is being requested is specifically defined.* To motivate behavioral change, learners must not only understand *what* they need to do, but *why* they need to do it. Within Mental Downtime, neuroscientific research was presented so that learners could understand how media-multitasking and gritting through fatigue negatively affect the body and mind.
3. *Model desired behavior*. As human beings, we are notorious for holding ourselves back from the behaviors we need *most* due to fear of social rejection. If looking to achieve a behavior change amongst an employee populous, leaders must ensure a culture supportive of the behavior requested.

Conclusions

Though members of Generation Z show incredible intrapreneurial promise, they face a major obstacle; their emotional well-being. According to the American Psychological Association (2018), Generation Z - people ages 15 to 21 – reported the worst mental health of any generation; only 45% reporting excellent or very good mental health. In 2018, the oldest members of the generation graduated college. As they prepare themselves for the workforce, the

workforce must prepare themselves for Gen Z. So, what is it they need? Well, according to nearly three-quarters of the generation (73%), they need emotional support (APA, 2018).

To help address this need, the researcher proposes a curriculum for intrapreneurs designed to help them cultivate the inner strengths they will need to succeed in the 21st century. It is suggested that each course focus on a particular internal strength (self-compassion, secure attachment, creativity, emotional intelligence, etc.) and end with a constructive exercise wherein learners can practice the cultivation of said strength. As this can be an extremely personal practice, Instructional design provides an ideal method for delivering this type of instruction. Rather than requiring learners to attend a crowded lecture hall, learners can practice in the safety of their own homes; lowering feelings of self-consciousness and – in effect – creating more space within working memory.

Mental Downtime was created to serve as an example of what this type of instruction should look like. The feedback collected from the SME evaluation forms give the researcher no reason to doubt the information presented within the course or effectiveness of the strategies employed. One comment in particular – sourced from the member of Generation Z – helps confirm that the information presented within the course is value-add:

> I spend a lot of my time drawing while also listening to podcasts or YouTube videos and normally how I would take a break is to eat and watch anime or lay down and scroll on Twitter. I would only meditate if I felt extremely stressed out but not for regular breaks. Plus, most of the time I find myself working for long periods of time with only taking breaks to eat.

The respondent is saying that – prior to completing the course - he associated scrolling through social media with rest. In reality, this behavior depletes the very cognitive reserves one

is attempting to recharge. This helps to confirm the researcher's hypothesis that - without sufficient education - Generation Z is primed to default to a behavior that has shown to increase depression, social anxiety, stress, and burnout (Becker, Alzahabi, & Hopwood, 2013).

Ultimately, the world is changing and education must change along with it. With so much entertainment and distractions abound, it is easier than ever to disregard the subtle ways in which the digital revolution threatens personal well-being. Not only is media-multitasking a threat, so is remaining relevant. The skillsets needed from employees of the future are not the same skillsets needed from employees of the past. And yet, internal strengths never go out of style.

Summary

This project and the product (Mental Downtime) that accompanied this paper were written and produced between Fall 2018 and Summer 2019. In Chapter One, the researcher provided an overview, statement of purpose, rationale, introduced five research questions, and provided a definition of terms. In Chapter Two, the researcher conducted a literature review to explore the five research questions posed in Chapter One. Chapter Three described Mental Downtime in greater detail. It also outlined the evaluation model that was used to survey the SMEs. In Chapter Four, an official description of the instructional product was outlined and the learning theories that guided the development were discussed. Chapter Five – the final chapter – was comprised of findings, conclusions and recommendations. In the appendix the reader will find references, IRB letter and approval, and the SME evaluation model including survey answers. Mental Downtime is available to the public on the designer's website; https://www.cmpdesign.org. A PDF version of course has also been included within the appendix.

References

Adobe InDesign. (2019, June 05). Retrieved from https://en.wikipedia.org/wiki/Adobe_InDesign

Alessi, S., & Trollip, S. (2001). *Multimedia for learning: Methods and development* (3rd ed., pp.415-417). Boston: Allyn and Bacon.

Alexander, F. M., & Dewey, J. (2016). Constructive conscious control of the individual. London: Mouritz.

Andersen, S. C., & Nielsen, H. S. (2016). Reading intervention with a growth mindset approach improves children's skills. *Proceedings of the National Academy of Sciences, 113*(43), 12111-12113. doi:10.1073/pnas.1607946113

APA stress in America™ survey: Generation Z stressed about issues in the news but least likely to vote. (2018, Oct 30). PR Newswire Retrieved from https://search-proquest-com.lib-proxy.fullerton.edu/docview/2126704014?accountid=9840

Ariail, D., Quinet, G., & Thacker, R. (2010). Creating and fostering sustainable intrapreneurship: A conversation with david gutierrez. Journal of Applied Management and Entrepreneurship, 15(2), 121-129.

Arnone, M. P., Small, R. V., Chauncey, S. A., & Mckenna, H. P. (2011). Curiosity, interest and engagement in technology-pervasive learning environments: A new research agenda. Educational Technology Research and Development, 59(2), 181-198. doi:10.1007/s11423-011-9190-9

Bandura, A. (2012). On the Functional Properties of Perceived Self-Efficacy Revisited. *Journal of Management, 38*(1), 9-44.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215. doi:10.1037//0033-295x.84.2.191

Barrett, Lisa Feldman. *How Emotions Are Made*. Pan Books Ltd, 2018.

Bavelier, D., Achtman, R. L., Mani, M., & Föcker, J. (2012). Neural bases of selective attention in action video game players. *Vision Research*, 61, 132–143. http://dx.doi.org/10.1016/j.visres.2011.08.007.

Becker, M., Alzahabi, R., & Hopwood, C. (2012). *Media Multitasking Is Associated with Symptoms of Depression and Social Anxiety*. Cyberpsychology, behavior and social networking. 16. 10.1089/cyber.2012.0291.

Bond Chapman, S. (2013, May 08). Why Single-Tasking Makes You Smarter. Retrieved from https://www.forbes.com/sites/nextavenue/2013/05/08/why-single-tasking-makes-you-smarter/#53462a655063

Brooks, S. (2015). Does personal social media usage affect efficiency and well-being? Computers in Human Behavior, 46(C), 26-37.

Brown, Brené. [YouTube]. (2019, June 16). *Rising Strong As A Spiritual Practice: The Belief In A Loving Source Makes Us Stronger*. Retrieved from https://www.youtube.com/watch?v=iHzV03ADCY8&t=3074s

Chapman, S. B., & Kirkland, S. (2013). *Make your brain smarter: Increase your brain's creativity, energy, and focus*. New York: Free Press.

Chen, P., Chavez, O., Ong, D., & Gunderson, B. (2017). Strategic Resource Use for Learning: A Self-Administered Intervention That Guides Self-Reflection on Effective Resource Use Enhances Academic Performance. Psychological Science, 28(6), 774-785.

Chillakuri, B., & Mahanandia, R. (2018). Generation Z entering the workforce: The need for sustainable strategies in maximizing their talent. Human Resource Management International Digest, 26(4), 34-38.

Clark, A. C., & Ernst, J. V. (2009). Gaming in technology education: The study of gaming can teach life skills for the twenty-first century that employers want...These include analytical thinking, team building, multitasking, and problem solving under duress. The Technology Teacher, 68(5), 21e27

Csikszentmihalyi, M. (2009). Flow: The psychology of optimal experience. New York: Harper Row.

Dochy, F., Berghmans, I., Koenen, A. K., & Segers, M. (2015). Bouwstenen voor high impact learning [Building blocks for high impact learning]. Amsterdam, The Netherlands: Boom Uitgevers.

Duke, & Montag. (2017). Smartphone addiction, daily interruptions and self-reported productivity. *Addictive Behaviors Reports, 6*, 90-95.

Drucker, Peter. (1999) *Management Challenges for the 21st Century*. HarperCollins.

Epayne, P., Levine, P.A., & Crane-Godreau M. A. (2015). Somatic Experiencing: Using interoception and proprioception as core elements of trauma therapy. Frontiers in Psychology, 6, 93.

Francis, T., & Hoefel, F. (2018, November). 'True Gen': Generation Z and its implications for companies. Retrieved April 14, 2019, from https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/true-gen-generation-z-and-its-implications-for-companies

Frankl, Viktor E. (1978) *Mans Search for Meaning: an Introd. to Logotherapy*. Hodder & Stoughton.

Fryer, Bronwyn. “Are You Working Too Hard?” *Harvard Business Review*, 1 Aug. 2014, hbr.org/2005/11/are-you-working-too-hard.

Füstös, J., Gramann, K., Herbert, B., & Pollatos, O. (2013). On the embodiment of emotion regulation: Interoceptive awareness facilitates reappraisal. *Social Cognitive and Affective Neuroscience, 8*(8), 911-917.

Garfield, C. F., Dorsey, E. R., Zhu, S., Huskamp, H. A., Conti, R., Dusetzina, S. B., . . . Alexander, G. C. (2012). Trends in Attention Deficit Hyperactivity Disorder Ambulatory Diagnosis and Medical Treatment in the United States, 2000–2010. *Academic Pediatrics, 12*(2), 110-116. doi:10.1016/j.acap.2012.01.003

Gelb, M. J. (1994). Body learning. London: Aurum.

George, J. , & Dane, E. (2016). Affect, emotion, and decision making. *Organizational Behavior and Human Decision Processes*, *136*, 47-55.

Goldhill, O. (2016, July 07). Neuroscientists say multitasking literally drains the energy reserves of your brain. Retrieved from https://qz.com/722661/neuroscientists-say-multitasking-literally-drains-the-energy-reserves-of-your-brain/

Harari, Y. N. (2017). *Homo Deus: A Brief History of Tomorrow*. New York, New York: HarperCollins .

Hanson, R. (2014, October 6). Grow Inner Strengths. Retrieved June 26, 2019, from https://www.psychologytoday.com/us/blog/your-wise-brain/201410/grow-inner-strengths

Hanson, R. (2014). *Hardwiring happiness: The new brain science of contentment, calm, and confidence* (Unabridged ed.). [Melbourne, Vic.]: Bolinda audio.

Heatherton, T. (2011) Neuroscience of Self and Self-Regulation. Annual Review of Psychology, 62(1), 363-390.

Hilbert, M. (2012). How much information is there in the “information society”? Significance, 9(4), 8-12.

Horowitz, J. M., & Graf, N. (2019, February 21). Most U.S. Teens See Anxiety, Depression as Major Problems. Retrieved from https://www.pewsocialtrends.org/2019/02/20/most-u-s-teens-see-anxiety-and-depression-as-a-major-problem-among-their-peers

Identify Employees Who Are Good at Multitasking | BG Staffing Inc. (2016, December 15). Retrieved from https://www.bgstaffing.com/2015/05/19/identify-employees-good-multitaking-austin-tx-employment/

Issel, L. (2012). Learning from storytelling. *Health Care Management Review*, *37*(2), 109.

Kalyuga, S. (2012). Interactive distance education: A cognitive load perspective. *Journal of Computing in Higher Education, 24*(3), 182-208. doi:10.1007/s12528-012-9060-4

Killingsworth, M. A., & Gilbert, D. T. (2010, November 12). A wandering mind is an unhappy mind. *Science, New Series, 330*(6006). doi:10.1037/e634112013-170

Kim, S., & Baek, S. (2014). The effect of Alexander technique training program: A qualitative study of ordinary behavior application. Journal of Exercise Rehabilitation, 10(6), 357-61.

Kirschner, & De Bruyckere. (2017). The myths of the digital native and the multitasker. Teaching and Teacher Education, 67, 135-142.

Kushlev, K., Proulx, J., & Dunn, E. (2016). "Silence Your Phones": Smartphone Notifications Increase Inattention and Hyperactivity Symptoms. Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, 1011-1020.

Kwon, M., Lee, J. Y., Won, W. Y., Park, J. W., Min, J. A., Hahn, C., ... Kim, D. J. (2013). Development and validation of a smartphone addiction scale (SAS). PloS One, 8(2), e56936

Lanaj, K., Johnson, R. E., & Barnes, C. M. (2014). Beginning the workday yet already depleted? Consequences of late-night smartphone use and sleep. Organizational Behavior and Human Decision Processes, 124(1), 11–23.

Lerner, J., Li, Y., Valdesolo, P., & Kassam, K. (2015). Emotion and Decision Making. *Annual Review of Psychology, 66*, 799.

Levitin, D. J. (2015, January 18). Why the modern world is bad for your brain. Retrieved from https://www.theguardian.com/science/2015/jan/18/modern-world-bad-for-brain-daniel-j-levitin-organized-mind-information-overload

Liu, J. (2011). Reducing Cognitive Load in Multimedia-based College English Teaching. *TPLS Theory and Practice in Language Studies, 1*(3). doi:10.4304/tpls.1.3.306-308

Loh, K., & Kanai, R. (2014). Higher Media Multi-Tasking Activity Is Associated with Smaller Gray-Matter Density in the Anterior Cingulate Cortex. PLoS One, 9(9), E106698.

Merriam, S. B., & Bierema, L. L. (2014). Adult learning: linking theory and practice. San Francisco, CA: Jossey-Bass, a Wiley brand.

Montag, C., & Walla, P. (2016). Carpe diem instead of losing your social mind: Beyond digital addiction and why we all suffer from digital overuse. *Cogent Psychology*, 3(1), 1157281.

Microsoft (Ed.). (2015). Attention Spans. *Consumer Insights,* 1-52. Retrieved November 1, 2016, from Attention spans - Microsoft Advertising

Naval Ravikant – The Joe Rogan Experience [Audio blog interview]. (2019, June 4). Retrieved June 08, 2019, from https://www.youtube.com/watch?v=3qHkcs3kG44

Ocasio, W. (2011). Attention to Attention. *Organization Science, 22*(5), 1286-1296. doi:10.1287/orsc.1100.0602

Ophir, E., Nass, C., & Wagner, A. D. (2009). Cognitive control in media multitaskers. Proceedings of the National Academy of Sciences, 106(37), 15583-15587. doi:10.1073/pnas.0903620106

Pastorino, E. E. & Doyle-Portillo, S. M. (2013). What Is Psychology?: Essentials. Belmont, CA: Wadsworth, Cengage Learning.

Pollatos, O., Matthias, E., & Keller, J. (2015). When interoception helps to overcome negative feelings caused by social exclusion. Frontiers In Psychology, 6, 786.

Posner, & Rothbart. (2009). Toward a physical basis of attention and self-regulation. Physics of Life Reviews, 6(2), 103-120.

Ra, C. K., Cho, J., Stone, M. D., Cerda, J. D., Goldenson, N. I., Moroney, E., . . . Leventhal, A. M. (2018). Association of Digital Media Use With Subsequent Symptoms of Attention-Deficit/Hyperactivity Disorder Among Adolescents. Jama, 320(3), 255. doi:10.1001/jama.2018.8931

Robin, B. (2005). The Educational uses of digital storytelling. Retrieved January 29, 2010 from Educational Uses of Digital Storytelling http://digitalstorytelling.coe.uh.edu/powerpoint.html

Robin, B. (2008). Digital Storytelling: A Powerful Technology Tool for the 21st Century Classroom. Theory Into Practice, 47(3), 220-228.

Santos, H. C., Varnum, M. E. W., & Grossmann, I. (2017). Global Increases in Individualism. Psychological Science, 28(9), 1228–1239. https://doi.org/10.1177/0956797617700622

Schweizer, S. , Grahn, J. , Hampshire, A. , Mobbs, D. , & Dalgleish, T. (2013). Training the emotional brain: Improving affective control through emotional working memory

training. *The Journal of Neuroscience : The Official Journal of the Society for Neuroscience*, *33*(12), 5301.

Skiba, D., & Barton, A. (2006). Adapting your teaching to accommodate the next generation of learners. Online Journal of Issues in Nursing, 11(2). Retrieved from: http://www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume112006/No2May06/tpc30_416076.aspx.

Sullivan, M., Erb, M., Schmalzl, L., Moonaz, S., Noggle Taylor, J., & Porges, S. (2018). Yoga Therapy and Polyvagal Theory: The Convergence of Traditional Wisdom and Contemporary Neuroscience for Self-Regulation and Resilience. *Frontiers in Human Neuroscience, 12*, 67.

SurveyMonkey. (2019, May 25). Retrieved from https://en.wikipedia.org/wiki/SurveyMonkey

Squarespace. (2019, June 21). Retrieved from https://en.wikipedia.org/wiki/Squarespace

Sweller, J. (1988). Cognitive Load During Problem Solving: Effects on Learning. *Cognitive Science, 12*(2), 257-285.

Sweller, J. (2006). The worked example effect and human cognition. Learning and Instruction, 16(2), 165-169.

Tang, & Posner. (2009). Attention training and attention state training. Trends in Cognitive Sciences, 13(5), 222-227.

Teixeira, T., Wedel, M., & Pieters, R. (2012, April 1). Emotion-Induced Engagement in Internet Video Advertisements. *Journal of Marketing Research, 49*(2), 144-159. doi:10.1509/jmr.10.0207

Uncapher, M., Thieu, R., & Wagner, M. (2016). Media multitasking and memory: Differences in working memory and long-term memory. Psychonomic Bulletin & Review, 23(2), 483-490.

U.S. Department of Education (2017). Https://tech.ed.gov/files/2017/01/NETP17.pdf. Retrieved May 2, 2017, from https://tech.ed.gov/files/2017/01/NETP17.pdf

Van Der Kolk, B. (2015). The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma by Bessel van der Kolk, MD | Key Takeaways, Analysis & Review. San Francisco: IDreamBooks.

Vasile, C., Marhan, A., Singer, F. M., & Stoicescu, D. (2011). Academic self-efficacy and cognitive load in students. *Procedia - Social and Behavioral Sciences, 12*, 478-482. doi:10.1016/j.sbspro.2011.02.059

Vyond. (2019, June 22). Retrieved from https://en.wikipedia.org/wiki/Vyond

West, J., Liang, B., Spinazzola, J., & Siu, Oi Ling. (2017). Trauma Sensitive Yoga as a Complementary Treatment for Posttraumatic Stress Disorder: A Qualitative Descriptive Analysis. *International Journal of Stress Management, 24*(2), 173-195.

Xu G, Strathearn L, Liu B, Yang B, Bao W. Twenty-Year Trends in Diagnosed Attention-Deficit/Hyperactivity Disorder Among US Children and Adolescents, 1997-2016. JAMA Netw Open. 2018;1(4):e181471. doi:10.1001/jamanetworkopen.2018.1471

Yilmaz, Kaya. (2011). The Cognitive Perspective on Learning: Its Theoretical Underpinnings and Implications for Classroom Practices. Clearing House: A Journal of Educational Strategies, Issues and Ideas, 84(5), 204-212.

Appendix A

Completed Subject Matter Expert Evaluation Forms

An additional form was completed by an Instructional Designer after the response deadline had passed. This 7th feedback form is included within this appendix (continued on the next page).

Mental Downtime Evaluation SurveyMonkey

#1

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Thursday, June 13, 2019 8:50:43 AM
Last Modified:	Thursday, June 13, 2019 8:56:12 AM
Time Spent:	00:05:29
IP Address:	75.111.83.234

Page 1

Q1 How often do you find yourself operating two or more pieces of technology at a time?

Sometimes **1**

Q2 Are you encouraged to spend less time media multitasking after having completed this course? **Yes**

Q3 Did your views on multitasking change after having completed this lesson? **Yes**

Q4 If so, how?

I definitely turn to caffeine when I get overwhelmed so I liked learning about that .

Q5 Did you schedule mental breaks throughout your day prior to completing this course? **Yes**

Q6 Do you plan to schedule mental breaks throughout your day after having completed this lesson? **Yes**

Q7 Why or why not?

I feel line I am pretty good about this but will try this before reaching for caffeine or sugar.

Q8 How did you feel after having completed the 20-minute nervous system reset at the end of the course? **Respondent skipped this question**

Q9 What I liked the most about Mental Downtime was:

I am doing this in a crowded house and wasn't able to participate in the practice :/

Q10 What I disliked the most about Mental Downtime was:

I feel like people always think you are weird when you are just sitting doing nothing.

Mental Downtime Evaluation SurveyMonkey

#2

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Thursday, June 13, 2019 11:11:13 AM
Last Modified:	Thursday, June 13, 2019 11:19:36 AM
Time Spent:	00:08:23
IP Address:	73.55.20.46

Page 1

Q1 How often do you find yourself operating two or more pieces of technology at a time?

Always **5**

Q2 Are you encouraged to spend less time media multitasking after having completed this course? **Yes**

Q3 Did your views on multitasking change after having completed this lesson? **Yes**

Q4 If so, how?

I spend a lot of my time drawing while also listening to podcasts or YouTube videos and normally how I would take a break is to eat and watch anime or lay down and scroll on Twitter. I would only meditate if I felt extremely stressed out but not for regular breaks. Plus most of the time I find myself working for long periods of time with only taking breaks to eat

Q5 Did you schedule mental breaks throughout your day prior to completing this course? **No**

Q6 Do you plan to schedule mental breaks throughout your day after having completed this lesson? **Yes**

Q7 Why or why not?

Sometimes I would schedule like an hour long break after three to four hours of working but most of the time it's just to eat and watch anime not to pay attention to how I'm feeling

Q8 How did you feel after having completed the 20-minute nervous system reset at the end of the course?

I felt really good! It was a nice stretch and I think if I took more time to take breaks like that I would be more productive

Mental Downtime Evaluation SurveyMonkey

Q9 What I liked the most about Mental Downtime was:

I liked how informative the information was. I've never thought of my phone as an addictive slot machine before but it does make sense based on how it's designed. It's also crazy how humans basic reward system can be taken advantage of so easily it's almost scary.

Q10 What I disliked the most about Mental Downtime was:

There wasn't too much I disliked. I think sometimes there were some larger technical terms I didn't understand but most of the time they were explained right after.

Mental Downtime Evaluation SurveyMonkey

#3

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Thursday, June 13, 2019 4:04:48 PM
Last Modified:	Thursday, June 13, 2019 4:11:02 PM
Time Spent:	00:06:14
IP Address:	47.147.145.152

Page 1

Q1 How often do you find yourself operating two or more pieces of technology at a time?

Sometimes **1**

Q2 Are you encouraged to spend less time media multitasking after having completed this course? **Yes**

Q3 Did your views on multitasking change after having completed this lesson? **Yes**

Q4 If so, how?

first off - task switching. what a game changer. Second, I feel that the information provided was concise and direct. I gained good insight into how it is effecting my productivity and health.

Q5 Did you schedule mental breaks throughout your day prior to completing this course? **Yes**

Q6 Do you plan to schedule mental breaks throughout your day after having completed this lesson? **Yes**

Q7 Why or why not? **Respondent skipped this question**

Q8 How did you feel after having completed the 20-minute nervous system reset at the end of the course?

sleepy :) and calm. great pace, good cuing.

Mental Downtime Evaluation SurveyMonkey

Q9 What I liked the most about Mental Downtime was:

the first video (minus all the ads) it was enlightening to hear the slot machine reference. it was information I "knew" but hadn't applied to this concept.

The pace of the audio/voiceover was spot on.

also, yoga :)

Q10 What I disliked the most about Mental Downtime was:

The ads in the first video were quite distracting, and also for things that may not support your cause.

Also the mouth visual and the voice in the beginning of the yoga video didn't match up.

nothing major. I felt it was informative without being overly content driven.

Mental Downtime Evaluation SurveyMonkey

#4

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Friday, June 14, 2019 2:04:51 PM
Last Modified:	Friday, June 14, 2019 2:31:33 PM
Time Spent:	00:26:42
IP Address:	76.217.199.87

Page 1

Q1 How often do you find yourself operating two or more pieces of technology at a time?

Usually **1**

Q2 Are you encouraged to spend less time media multitasking after having completed this course? **Yes**

Q3 Did your views on multitasking change after having completed this lesson? **Yes**

Q4 If so, how?

I need to focus more on one task instead of trying to do multiple tasks at the same time.

Q5 Did you schedule mental breaks throughout your day prior to completing this course? **No**

Q6 Do you plan to schedule mental breaks throughout your day after having completed this lesson? **Yes**

Q7 Why or why not?

To recharge my brain. I was one that thought taking a break and check the facebook feed was relaxing, but not anymore. Need to clearly step away and relax.

Q8 How did you feel after having completed the 20-minute nervous system reset at the end of the course?

Recharged. Will need to have that on the desktop so I can access at any time.

Q9 What I liked the most about Mental Downtime was:

The Nervous system reset and the way the course was chunked to very small doses of information. I didn't feel overwhelmed and my attention didn't wander as I moved through each chapter.

Q10 What I disliked the most about Mental Downtime was:

I'd be nit-picking because I believe all the information provided in the course is vital to tell the story. However, I liked the short videos or the one -two page articles. I'm a cliff notes kind of reader. I like to get to my information quickly and without a lot of brain effort. great job on this though. I can see a lot of potential into reducing stress in the workplace.

Mental Downtime Evaluation SurveyMonkey

#5

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Wednesday, June 19, 2019 6:13:25 PM
Last Modified:	Wednesday, June 19, 2019 6:18:03 PM
Time Spent:	00:04:38
IP Address:	73.182.117.108

Page 1

Q1 How often do you find yourself operating two or more pieces of technology at a time?

Always	**4**
Usually	**1**
Sometimes	**2**
Rarely	**3**
Never	**5**

Q2 Are you encouraged to spend less time media multitasking after having completed this course? **Yes**

Q3 Did your views on multitasking change after having completed this lesson? **Yes**

Q4 If so, how?

As an educator, I understood the inefficiencies inherent in multitasking. Due to my learning throughout this course, I know more clearly recognize the correlations between health issues, stress, and lack of body awareness.

Q5 Did you schedule mental breaks throughout your day prior to completing this course? **No**

Q6 Do you plan to schedule mental breaks throughout your day after having completed this lesson? **Yes**

Q7 Why or why not?

I had been planning to implement Pomodoros in my work. This reinforces the need for that ritual.

Q8 How did you feel after having completed the 20-minute nervous system reset at the end of the course?

Balanced, centered, less stuck in fight-or-flight

Mental Downtime Evaluation SurveyMonkey

Q9 What I liked the most about Mental Downtime was:

The supporting theory and causation, coupled with a practical exercise

Q10 What I disliked the most about Mental Downtime was:

I don't always have 20 minutes. While this exercise is great for longer break opportunities, I would be interested in shorter 5-7 min exercises I can leverage during Pomodoro breaks.

Mental Downtime Evaluation SurveyMonkey

#6

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Wednesday, July 03, 2019 10:38:26 AM
Last Modified:	Wednesday, July 03, 2019 10:47:05 AM
Time Spent:	00:08:39
IP Address:	47.13.55.180

Page 1

Q1 How often do you find yourself operating two or more pieces of technology at a time?

Always	**1**
Usually	**3**
Sometimes	**2**
Rarely	**4**
Never	**5**

Q2 Are you encouraged to spend less time media multitasking after having completed this course? **Yes**

Q3 Did your views on multitasking change after having completed this lesson? **Yes**

Q4 If so, how?

I didn't realize how much energy I was depleting by attempting to focus on more than one thing at a time. I always felt like I was accomplishing tasks quicker by being overly engaged but now I know it's just a lie we tell ourselves! I will try to focus on one task at a time from now on!

Q5 Did you schedule mental breaks throughout your day prior to completing this course? **No**

Q6 Do you plan to schedule mental breaks throughout your day after having completed this lesson? **Yes**

Q7 Why or why not?

I love the 90 minute break advice. I plan to schedule quick workouts or a walk around the neighborhood to break up my day. I am interested to see how it improves my mental state during the week.

Mental Downtime Evaluation SurveyMonkey

Q8 How did you feel after having completed the 20-minute nervous system reset at the end of the course?

Amazing!!! It was needed more than I had realized. I feel so much more relaxed and less tense.

Q9 What I liked the most about Mental Downtime was:

The 20-minute nervous system reset

Q10 What I disliked the most about Mental Downtime was:

I really enjoyed the entire course. I liked that if I needed more explanation it was available. I thought it was really well designed!

Mental Downtime Evaluation SurveyMonkey

#7

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Tuesday, July 09, 2019 10:35:18 AM
Last Modified:	Tuesday, July 09, 2019 10:39:36 AM
Time Spent:	00:04:18
IP Address:	107.141.184.194

Page 1

Q1 How often do you find yourself operating two or more pieces of technology at a time?

Always **3**

Q2 Are you encouraged to spend less time media multitasking after having completed this course? **Yes**

Q3 Did your views on multitasking change after having completed this lesson? **Yes**

Q4 If so, how?

Actually recognizing that I'm doing it and taking breaks instead of just pushing through fatigue or feeding it with sugar or caffeine. It will take time to adjust.

Q5 Did you schedule mental breaks throughout your day prior to completing this course? **No**

Q6 Do you plan to schedule mental breaks throughout your day after having completed this lesson? **Yes**

Q7 Why or why not?

It's important for my health-after having recent downtime due to illness, I noticed a significant difference in my mindset and that my body wasn't always tense to the point of unrelenting pain.

Q8 How did you feel after having completed the 20-minute nervous system reset at the end of the course?

Amazing!

Q9 What I liked the most about Mental Downtime was:

It was the time I needed to focus on me, which I never do.

Mental Downtime Evaluation SurveyMonkey

Q10 What I disliked the most about Mental Downtime was:

It wasn't long enough!

Appendix B

Completed Instructional Design Evaluation Form

ITEM	ACCEPTABLE	NEEDS WORK	COMMENTS
Subject matter	X		I loved this topic. I think it was very informative and easy to understand even if the user knows nothing about the subject beforehand.
Content structure	X		
Content accuracy	X		
Language – style - grammar	X		
Reading Level	X		Easy to understand – plenty of explanation
Cultural bias - language	X		
Cultural bias - reference	X		
Spelling, grammar, and punctuation	X		
Glossary			I did not see a glossary but I am not sure one is necessary
Hot Words	X		

Auxiliary Information			
Introduction	X		
Directions	X		
Help *(There was none. Was it needed?)*	X		I did not think a help section was necessary. There was plenty of explanation for the topic, and the navigation was user friendly.
Conclusion	X		I loved ending with the 20 minute mental downtime. I think it drove home the message and shows the user what it feels like to truly disconnect.

Affective Considerations			
Motivation	X		The course made me want to make adjustments in my day to day life.

Interface			
Displays	X		

Graphic quality	X		
Text quality	X		
Audio	X		
Video	X		
Animation	X		
Controls	X		
Font consistency	X		
Spacing of elements	X		

Interface			
Displays	X		
Graphic quality	X		I love the use of consistent imagery throughout the course
Text quality	X		
Audio	X		
Video	X		The videos were well designed and easy to follow
Animation	X		
Controls	X		
Font consistency	X		

Spacing of elements	X		

Navigation			The course was easy to navigate. Plenty of extra information available and I did not have any trouble completing the course.
Aids	X		
Consistency	X		I liked the consistent use of continue buttons to guide the user from topic to topic. I knew when I saw a button it was time to discuss a new idea.
Restarting	X		
Passive Bookmarking	X		
Active Bookmarking	X		

Pedagogy			
Methodology	X		
Interactivity	X		
Cognitive Capacity	X		

User Control	X		
Questions	X		
Quality of Feedback	X		
Format of Feedback	X		
Mastery level	X		

Robustness			
For normal user actions	X		
For uusual user actions	X		
On different computers, software, and browsers	X		The course displayed well on both phone and desktop.

Supplementary Materials			
Manual	X		
Auxiliary materials	X		
Other resources	X		

Appendix C

Subject Matter Expert Email Request

Hello [Subject Matter Expert]

Mental Downtime - the course I've created in pursuit of my Master of Science in Instructional Design and Technology (MSIDT) degree - is ready for SMEs for review.

I would absolutely LOVE to have you as an SME. As [Insert Comment Unique to Individual], your feedback would be ***extremely*** beneficial.

Understand I make this request with no expectations.

SMEs would be required to complete the following by Wednesday - June 26th.

- Complete Mental Downtime - roughly one hour
- Complete 10-Question Evaluation Survey - roughly 20 minutes

Thank you for your consideration,

Christa Pozzi

Appendix D

Table 1: Personnel and Task Analysis

TASK	PERSONNEL	ESTIMATED HOURS
Phase 1: Planning		
Needs analysis	Instructional Designer	8
Learner analysis	Instructional Designer	8
Content research	Instructional Designer	80
Scope, goal, and objectives	Instructional Designer	8
Evaluation form	Instructional Designer	4
Phase 2: Design		
Create mood board	Instructional Designer	4
Write script	Instructional Designer	20
Curate content (linked assets)	Instructional Designer	8
Draw flowchart	Instructional Designer	4
Create storyboard	Instructional Designer	12
Phase 3: Development		
Create animated GIF images	Instructional Designer	30
Record V.O.	Instructional Designer	8
Edit V.O with background music	Instructional Designer	8
Edit MP4 Videos	Instructional Designer	18
Develop interactions	Instructional Designer	4
Test alpha version	Instructional Designer	4
Debug alpha version	Computer Programmer	8
Update alpha version	Instructional Designer	8
Publish beta version	Instructional Designer	3
Create evaluation survey	Instructional Designer	3
Provide beta version to SMEs	Instructional Designer	2
Evaluate beta version	Subject Matter Experts	2x6
Collect and review evaluations	Instructional Designer	4
Study feasibility of proposed changes	Instructional Designer	4
Make recommended changes	Instructional Designer	8
Publish final tutorial	Instructional Designer	4
Total Hours		
	Instructional Designer	264
	Computer Programmer	8
	Subject Matter Experts	2x6

Appendix E

Table 2: Production Work Plan

TASK	***PROJECT STARTED***	***PROJECT COMPLETION***
Content Research	06/01/17	12/31/18
Learner Analysis	06/01/17	08/30/17
Project Proposal and Preliminary Flowchart	02/24/19	03/03/19
Planning Documents	03/05/19	03/15/19
IRB Approval Request	06/05/19	06/10/19
Alpha Prototype Development	01/01/19	05/01/19
Alpha Prototype Evaluations and Revisions	05/01/19	05/15/19
Beta Prototype Evaluation by SMEs	05/15/19	06/30/19
Beta Evaluation Review	06/30/19	07/07/19
Final Tutorial Development	07/07/19	07/30/19
Final Tutorial Published	08/01/19	08/10/19

Appendix F

IRB Request

From: Christa Pozzi Date: 06/11/19

To:
MSIDT Faculty
California State University, Fullerton
MSIDT Faculty

The purpose of this letter is to request that my project titled Mental Downtime be given exempt status from review by the CSUF institutional review board (IRB). I am submitting this letter so as to expedite the IRB process.

As a student in the Master of Science in Instructional Design and Technology Program at CSUF, I am required to submit a digital learning product that demonstrates the knowledge and skills that I have acquired in the program. The MSIDT program focuses on the application of technology for teaching, learning and curriculum development used by professionals. A requirement for completion of the program is the development and evaluation of a digital learning product that can be used to meet an instructional need.

Along with this letter, I am submitting an abstract that describes my digital learning product in detail. Once this digital learning product has been developed, I will need to conduct an evaluation that will evaluate the digital learning product's effectiveness with a group of Subject Matter Experts. This evaluation will also provide me with information that will help me improve the instructional product. The evaluation is qualitative in nature and as such will not be

generalizable to other situations. The results of the evaluation will only appear in my Master's project.

If you have any questions or concerns please do not hesitate to contact me at the following address:

Address: [redacted]

Cell phone: [redacted]

Email: [redacted]

Cohort #: [redacted]

I appreciate your help with this matter, as this will facilitate the completion of my final digital learning product for the MSIDT program.

Sincerely

Christa Pozzi

Appendix G

IRB Approval

Master of Science
Instructional Design & Technology
College of Education
2600 Nutwood Avenue
Fullerton, CA 92831
657-278-3786

June 1, 2019

Christa Pozzi,

Your IRB proposal letter has been received and reviewed. Your Master of Science in Instructional Design and Technology project qualifies for an IRB waiver. Your digital project is not designed to develop or contribute to generalizable knowledge as described in CFR 46.102(d). The primary focus of your project is based on the production and evaluation of a digital instructional product which does not involve human participants, a formal IRB review is not required and you may commence the development and evaluation of your digital instructional product.

Dr. Cynthia Gautreau, Director

MS Instructional Design and Technology

College of Education

California State University Fullerton

Appendix H

Table 3: Estimated Budget

ELEMENT	ESTIMATED HOURS	COST PER HOUR	TOTAL COST
Phase 1: Planning			
Research	80	$75	$6,000
Planning Documents	24	$75	$1800
Software Purchase	-	-	$300
Phase 2: Design			
Instructional Designer	60	$75	$4500
Phase 3: Development			
Instructional Designer	100	$75	$7500
Computer Programmer	8	$50	$400
SME Evaluations:			
Beta Version			
SME 1	2	$100	$200
SME 2	2	$100	$200
SME 3	2	$100	$200
SME 4	2	$100	$200
SME 5	2	$100	$200
SME 6	2	$100	$200
Total Cost			**$21.700**

Appendix I

PDF Copy of Instructional Product

Mental Downtime

Mental Downtime was built into the routines of our ancestors. Today...we have smartphones.

Lesson 1 of 8

Chapter One: Then vs. Now

For the majority of human history, human life moved at a relatively slow pace...in rhythm with the sun and nature.

CONTINUE

The digital revolution has changed the game; providing us the ability to access, create, and share an abundance of information quicker than ever before.

CONTINUE

This new way of life comes with many benefits, but also...its challenges...

"Busyness and stress disorders are familiar companions in contemporary society. The danger of burnout has become increasingly imminent in our cyber age, with its constant onslaught of stimulation. Mobile technology alone means that we are never out of others' reach and have an almost limitless selection of entertainment and distraction literally to hand. The new reality is that too many of us run around doing things that are counter-productive and in the process burn ourselves out. Often,

being busy can be a poor excuse for living an unhealthy life. **Busyness can be as addictive as a drug."**

- Doing Nothing and Nothing to Do: The Hidden Value of Empty Time and Boredom

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CONTINUE

Lesson 2 of 8

Chapter Two: The Rise of Media Multitasking

Have you ever found yourself multitasking with media?

Browsing Instagram as you watch TV...?

Listening to podcasts as you reply to email....?

Texting friends while YouTube plays in the background...?

Complete the content above before moving on.

If you're anything like the rest of us....these are likely familiar behaviors.

"Indeed, while overall media use among America's youth increased by 20 percent over the past decade, the amount of time spent multitasking with media (simultaneously interacting with more than one form of media) increased by over 119 percent over the same period."

--Media Multitasking Is Associated with Symptoms of Depression and Social Anxiety

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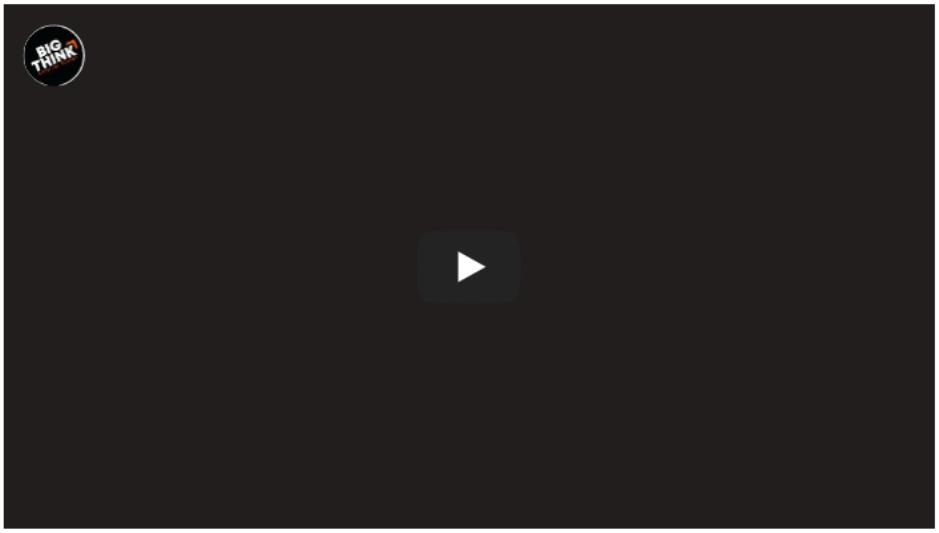
CONTINUE

So...if overall media use among America's youth has only increased by 20%...why has media multitasking increased by **119%**?

CONTINUE

THEORY

Increases in media multitasking might have something to do with the (increasingly clever) techniques social media and other online platforms use to capture our attention. Or maybe not! This is only a theory. Either way, what Tristan Harris has to say in the video below is certainly interesting.



CONTINUE

Lesson 3 of 8

Chapter Three: The Myth of Multitasking

To understand why the rise of media multitasking is so concerning, let's take a step back and define what "multitasking" actually means.

CONTINUE

FUN FACT

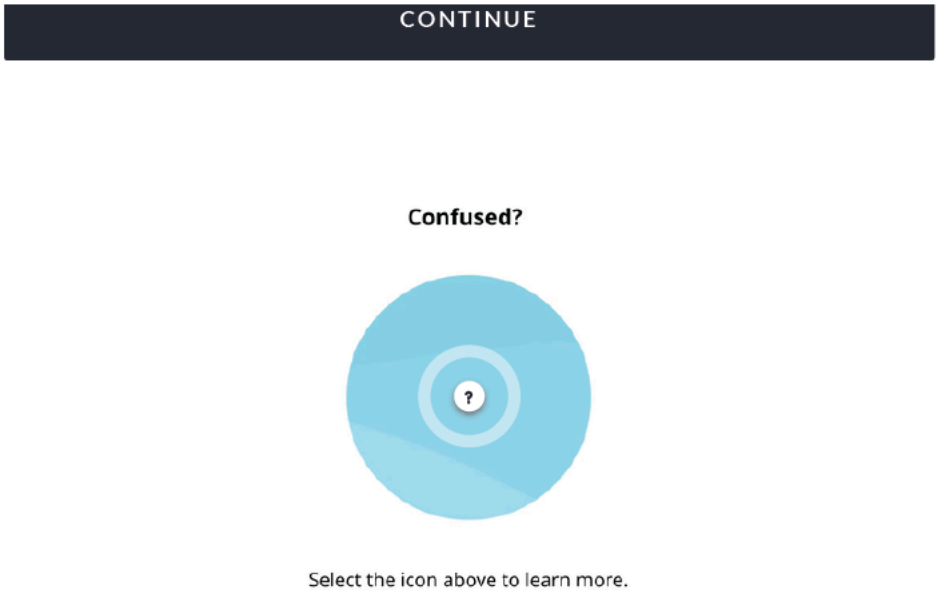
The term "multitasking" was first used in 1965 within the context of computer science.

CONTINUE

The term described a computer capable of processing two separate pieces of information simultaneously.

CONTINUE

We have since applied this same term to human behavior despite the fact **human beings cannot multitask**.


CONTINUE
Confused?
Select the icon above to learn more.

Confused?

Select the icon above to learn more.

Human Beings Cannot Multitask

Well...okay. If a task is **FULLY** automated (i.e. you know how to walk), you can do more than one thing at once. You can walk and chew gum. Yes.

However. If the two acts require ***cognitive processing***...for example:

1. Reading a news article
2. Replying to a friend on social media

...you simply can't do both at the same time.

If the human brain attempts to process two disparate pieces of information at once...that's not multitasking.

That's task-switching...

and it comes with a cognitive cost.

CONTINUE

Throughout the remainder of this course, **"multitasking" will now be referred to as "task-switching."** To understand why, watch the video below.

CONTINUE

Lesson 4 of 8

Chapter Four: Sugar for the Brain

With so many reasons NOT to task-switch, why do we find ourselves doing it more and more?

CONTINUE

THEORY

Task-switching is addictive. Watch the video below wherein I argue **why**.

CONTINUE

Here's what Eyal Ophir, one of the authors of *Cognitive Control in Media Multitaskers* has to say...

"This is certainly a hot topic, and one of the big questions that still has to be answered. I am no expert on addiction, but I think media in general, and media multitasking in particular, especially the tendency to constantly look for the next unknown, exciting tidbit, may be addictive. The relationship between media, media

multitasking, and the brain's most basic pleasure and reward mechanisms is an area of very active research that may provide an answer."

- Eyal Ophir (after being asked whether or not he thinks multitasking - i.e. task-switching - is addictive).

CONTINUE

Naval Ravikant - CEO and co-founder of AngelList - has a different take...

"These are addictive - Facebook, Instagram, Twitter - these are weaponized. You have social statisticians and scientists and researchers and people in lab coats - literally the best minds of our generation figuring out how to addict you to the news. And if you fall for it - if you get addicted - your brain will get destroyed."

- Naval Ravikant on the Joe Rogan Podcast

CONTINUE

Lesson 5 of 8

Chapter Five: Take a Break

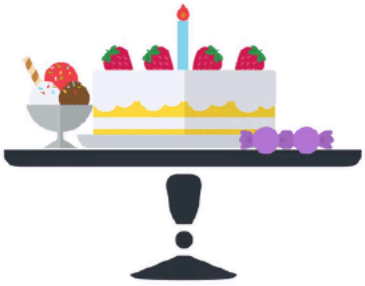
Whether or not task-switching is addictive, it certainly taxes our systems...

CONTINUE

When we encounter that mental fog, it's our brain's way of saying, "hey, I'm out of resources! I need a break to refuel please!"

CONTINUE

Yet....rather then take a break and allow our brain to recharge, most of us source externalities for that extra cognitive energy.



Some of us turn to food...

Some of us turn to caffeine...

Some of us return to task-switching.

Complete the content above before moving on.

What we *really* need...**is a break**...

"Task-switching comes with a biological cost that ends up making us feel tired much more quickly than if we sustain attention on one thing. People eat more, they take more caffeine. Often what you really need in that moment isn't caffeine, but just a break. If you aren't taking regular breaks every couple of hours, your brain won't benefit from that extra cup of coffee."

-

Daniel Levitin, professor of behavioral neuroscience at McGill University

---

CONTINUE

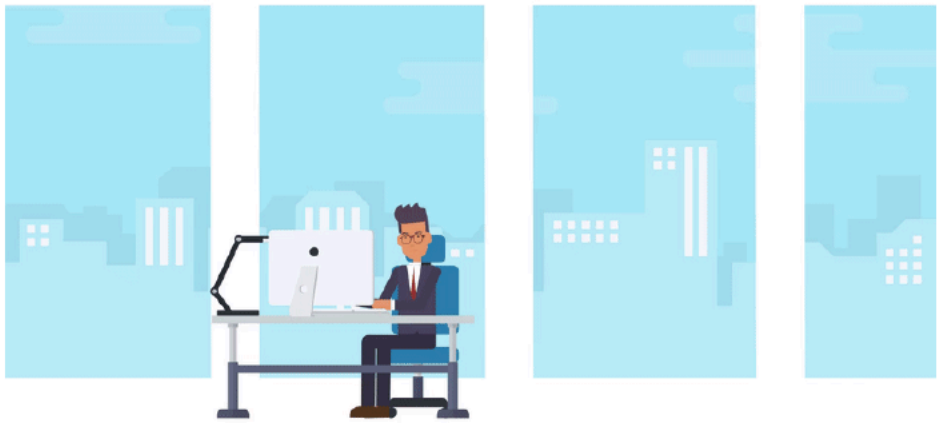
Lesson 6 of 8

Chapter Six: A Case Study

Counterintuitive as it may seem...taking breaks require discipline.

CONTINUE

It takes strength to step away...especially if we've learned to rely on that extra buzz of energy that momentum and stress so generously provide.



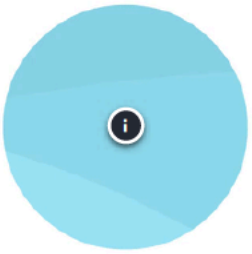
CONTINUE

If your mind is trapped in the "I can't relax until it's finished" paradigm...here's a case study to consider...

The Greek Epic Study

Select the icon above to learn more.

The Greek Epic Study



Select the icon above to learn more.

The Power of "Siesta"

At the turn of the millennium, Greece abandoned the tradition of the afternoon siesta.

Researchers from Harvard School of Health, curious to know how this decision would impact the population, studied more than 2,300 Greek adults (ages 20-83) across a 6-year period.

At the beginning of the study, none of the participants had a history of coronary heart disease or stroke.

At the end of the study, those who abandoned their afternoon nap experienced a 37% increased risk of death due to heart disease.

For working men...their risk of death from heart disease increased by **OVER 60%!**

CONTINUE

While taking breaks won't solve all our problems...not taking breaks could create more.

"Considerable evidence shows that overwork is not just neutral — it hurts us and the companies we work for. Numerous studies by Marianna Virtanen of the Finnish Institute of Occupational Health and her colleagues (as well as other studies) have found that overwork and the resulting stress can lead to all sorts of health problems, including impaired sleep, depression, heavy drinking, diabetes, impaired memory, and heart disease. Of course, those are bad on their own. But they're also terrible for a company's bottom line, showing up as absenteeism, turnover, and rising health insurance costs."

- The Research Is Clear: Long Hours Backfire for People and for Companies

CONTINUE

Lesson 7 of 8

Chapter Seven: Every 90 Minutes

SUGGESTION

Replace a brain-draining activity with a brain-replenishing one. As we know media multitasking is bad for us - and breaks are good - **allow media multitasking to operate as a stimulus for rest**.

CONTINUE

When you notice yourself media multitasking, it's a pretty good indicator that the brain is tired and looking for bursts of dopamine to keep it going.

CONTINUE

Rather than continuing to deplete your resources with passive scrolling, take a break and fuel yourself from the inside out.

CONTINUE

According to ultradian rhythms, we should be doing this every 90 minutes.

"We are capable of overriding these natural cycles, but, only by summoning the fight-or-flight response and flooding our bodies with stress hormones that are designed to help us handle emergencies. The long-term cost is that toxins build up inside us. **We can only push so hard for so long without breaking down and burning out.**"

- The Power of Full Engagement

CONTINUE

Lesson 8 of 8

Chapter Eight: Slowing it Down

There is no "right" way to take a break.

CONTINUE

Whatever gets you out of the mind and into the body...do that.

CONTINUE

"Body awareness puts us in touch with our inner world, the landscape of our organism. Simply noticing our annoyance, nervousness, or anxiety immediately helps us shift our perspective and opens up new options other than our automatic, habitual reactions. When we pay focused attention to our bodily sensations, we can recognize the ebb and flow of our emotions and, with that, increase our control over them."

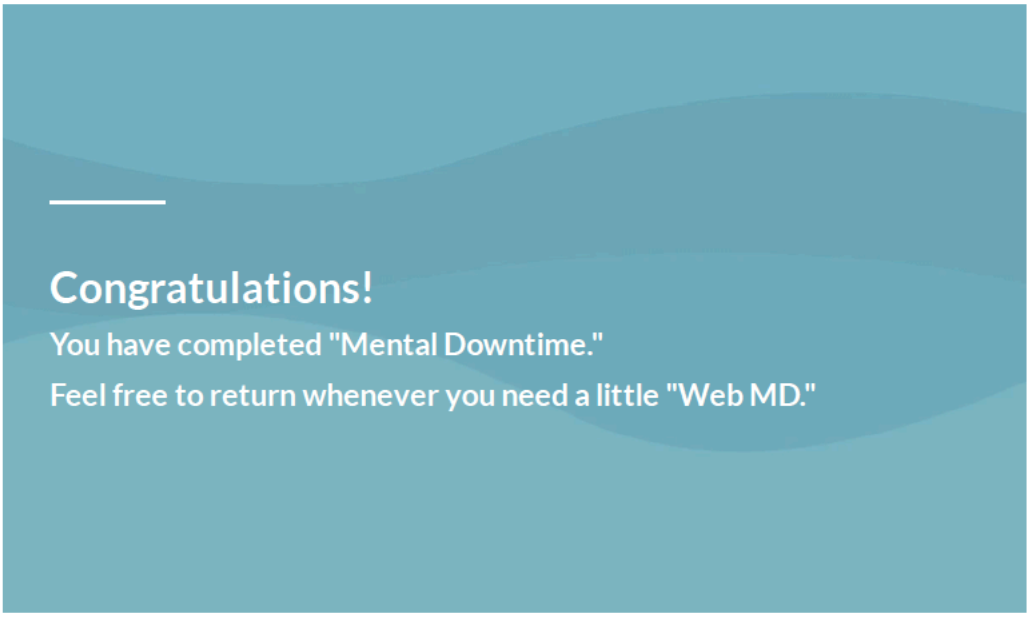
- The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma

CONTINUE

MENTAL DOWNTIME

If you find body awareness challenging - or are open to something new - the following yin-inspired class was designed to shift the nervous system from fight-or-flight to rest-and-digest. For 20 minutes, we take a gentle approach to movement (working with fascia, not muscle). This might be difficult if you're used to go-go-go...but remember...**we need rest just as much as we need stress**.

CONTINUE


Congratulations!
You have completed "Mental Downtime."
Feel free to return whenever you need a little "Web MD."