Mindfulness: A Look into the Effects on Performance in the Academic, Work, and Athletic Spaces

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Mindfulness: A Look into the Effects on Performance in the
Academic, Work, and Athletic Spaces

submitted to
Professor Jay Conger

by
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for
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Abstract

Mindfulness and meditation offer many benefits to people in all aspects of life. This paper provides insight to how mindfulness and meditation can affect an individual’s performance. Mindfulness and mediation has emerged as a very popular tool in western therapies in the last 60 years. Through reviewing lots of prior research and literature, the results show that mindfulness can help increase performance. This is done through three mechanisms: emotional regulation, flow state, and cognitive functions. Mindfulness increases an individual's emotional regulation systems through reduced depression and anxiety, increased happiness, and development of emotional intelligence. Mindfulness also increases the frequency of the flow state for an individual. Lastly, it helps maximize optimal cognitive functions such as increased awareness and concentration, better memory, reduced fatigue, and better decision making. When all of these pieces are combined, it helps an individual perform better. This is seen through performance in the classroom, workplace, and athletics.

Keywords: mindfulness, meditation, performance
Chapter 1: Mindfulness

Mindfulness and meditation are trending topics in psychology currently with tons of growing and ongoing research being conducted. Mindfulness is described as the quality or state of being conscious or aware of something (Mindfulness - Quick Search Results | Oxford English Dictionary, n.d.), and meditation is widely accepted as the practice of bringing one’s full attention to a single topic or idea (Cleveland Clinic, 2022). Mindfulness is a relatively new subject in the West as it started gaining traction in the 60s; however, their origins started thousands of years before in Buddhist traditions. It is important to know the origins to fully understand how and why we use them today and appreciate the people who invented the practice.

Origins of Mindfulness and Early Practices

The roots of Buddhism start in 400 BCE with Siddhartha Gautama, also known as the Buddha which translates to “the awakened one.” His teachings have now spread throughout all of Asia and most of the world. He started this religion with the goal of becoming enlightened (Brown, 2002). Enlightenment is the state of being awakened. The Buddha tried to achieve this state through many rituals such as fasting or asceticism; however, nothing worked until he used meditation. This shows that meditation is a crucial step to becoming enlightened. This practice is referred to as “sati” in Buddhism. Buddha gave his teachings to his disciples and they continued to share his practice with the world. In his most popular teaching called “The Discourse on the Foundations of Mindfulness,” he says how there are four foundations of mindfulness that are key. The first is called the contemplation of the body. This is also known as “kayanupassana.” This consists of five sections: breath, four postures, clear comprehension, parts and elements, and death and impermanence. Each are important aspects that individuals need to grasp. The breath involves taking notice of ones in breath and out breath, the speed of these cycles, and the
effects that the breath has on the body and the surroundings. The four postures are walking, standing, sitting, and lying down. It also involves the transition from one posture to another and taking notice of how the body and mind feel in each position. Clear comprehension involves being mindful in everyday activities that are mundane such as eating, driving, socializing, and sleeping. This allows for one to have a mindful lifestyle and prohibits us from taking this life for granted. Parts and elements involve categorizing the body into the four physical elements: air, fire, water, and earth. This allows for us to think of ourselves as natural beings. It can help us understand that we are inhabitants of the Earth instead of its owners. Lastly, death and impermanence involves one acknowledging that life comes to an end, and the body will eventually decompensate into the earth. This grounds us into understanding the cycle of life (Bodhi, 2023).

The second foundation is the contemplation of the feeling. This is known as “vedananupassana.” Here is where we develop the basic feelings of life which are pleasant, unpleasant, or neutral. These feelings have the potential to cause us suffering. It is important to make the distinction from us being our feelings and consuming us to us having feelings that come and go. We tend to try to elongate feelings of pleasure and minimize feelings of unpleasantness. These are learned urges through operant conditioning. Mindfulness can help us decipher the appropriate actions to move forward. We can look inward to see if allowing us to place these labels will be beneficial or not. This will, in turn, help reduce suffering since we are mindfully deciding how to view situations. For example, if someone cuts you off while you’re driving, you may get angry with them for not having proper driving etiquette, but in doing so you’re ignoring the beautiful road you are driving on. You labeled an experience as unpleasant
when there were pleasantries there as well (Noble, 2012). This hinders mindfulness since the individual isn’t allowing themselves to experience the moment as a whole (Bodhi, 2023).

The third foundation is the contemplation of the mind. This is known as “cittanupassana.” This is about how one observes the states of your mind. There are 16 mental states that we can be in. They are divided up into pairs: “the mind with lust and without lust; with aversion and without aversion; with delusion and without delusion; the cramped mind and the scattered mind; the developed mind and the undeveloped mind; the surpassable mind and the unsurpassable mind; the concentrated mind and the uncentered mind; and the freed mind and the bound mind.” Each of these pairs of states can be present concurrently or solo. It is important to be aware of the state that the mind is in because your thoughts and feelings about the situation can vary based on the state of mind. It helps us have a better understanding of situations and be more mindful (Bodhi, 2023).

Lastly, the fourth foundation is the contemplation of Dhammas. This is known as “dhammanupassana.” There are five groups within this section: “the five hindrances, the five aggregates (skandhas), the six pairs of sense bases, the seven factors of enlightenment, and the four noble truths.” Dhamma means to uphold. The Buddha preaches we need to uphold these five categories. The five hindrances refer to possible obstacles that we could encounter on our meditation journey. The five aggregates, also known as the skandhas, are the components of “craving or clinging”. These are things that we can get easily distracted by and deter us from living mindfully. The six senses are eye, ear, nose, tongue, body, and mind. These are different from the five senses we have in the West since in Buddhist tradition they focus a lot on the power of the mind. The seven factors of enlightenment are mindfulness, investigation, energy, rapture, tranquility, concentration, and equanimity. This is a linear model to reach enlightenment where
every step needs to be accomplished to move to the next step to reach enlightenment. Lastly, the four noble truths are the truth of suffering, the truth of the cause of suffering, the truth of the end of suffering, and the truth of the path that leads to the end of suffering. These are the inevitables that Buddha believes all humans will go through. All of these together make up the dhamma (Bodhi, 2023).

The Buddha attracted many followers with his practice since people aligned themselves with its intention. There are also roots of meditation in Hinduism. Here meditation is known as dhyana. The purpose was to become aware of one's true self. Although mindfulness and meditation originated in Buddhism and Hinduism, they have been ingrained and intertwined in many other cultures in Asian countries such as Burma, Cambodia, Thailand, India, Tibet, Nepal and religions such as Taoism (Folberg, 1983).

**Mindfulness in the West**

Mindfulness gained lots of traction in the West when the Beatles started using meditation. They met Maharishi Mahesh Yogi while he was in England, and they had an amazing initial experience which led them to have a meditation journey in India. They specifically enjoyed transcendental meditation which is a practice that involves the individual repeating a phrase to themselves such as “ohm.” They continued to talk about it in interviews which spread knowledge and awareness about mediation (Mary Swift, 2022). They had a major influence on mediation being popularized especially in young people.

Mindfulness also started having a major presence in the West when Jon Kabat-Zinn started implementing these techniques in treatments for chronic pain patients. He was an M.D. at University of Massachusetts and was desperate when his patients were complaining more and more of pain. He started a clinical trial to apply meditation into Western medicine and was
astonished by the results as his patients experienced less pain after using the practice. Kabat-Zinn
continued to spread his knowledge to the world so that many more could reap the benefits of this
wonderful practice (LaPlante, 2023). Through these experiences, he developed the most widely
known form of practicing mindfulness in the Western world. This is known as Mindfulness
Based Stress Reduction (MBSR). This is an eight week program that teaches people how to use
mindfulness in everyday life. It is heavily influenced by the Buddhist meditation practices. It is
very popular today because of its flexible nature. It is being used in many different settings for
different reasons. Therapists are integrating mindfulness into their practices with their clients.
Healthcare professionals are recommending it to their patients for reduced symptoms and pain.
Ordinary people are using it as a self-help tool to help with problems such as weight loss,
relationship problems, and making more money (Harrington & Dunne, 2015). A major benefit
for this practice is the ease of it since everyone can find a purpose and take away from this
practice (Ackerman, 2017).

Jon Kabat-Zinn introduced seven key pillars of mindfulness in his book “Full Catastrophe
Living” where he also outlined his practices of MBSR. First is that mindfulness is
non-judgmental. As humans, it is natural to observe everything around us and form an opinion
on it; this includes thoughts that come into our mind. We tend to attach a label to these thoughts
as good or bad. By doing this, we are having our minds spiral which makes it hard for us to have
peace of mind. When we allow a thought to enter our mind without judgment, we are one step
closer to being mindful. Second is patience. He relates patience to wisdom. Thoughts and actions
will unfold the way they will unfold at their own pace. By disturbing the timing of these
thoughts, we are not allowing them to come as they please which is in direct conflict to being
mindful. Third is having a beginner’s mindset. There are certain biases that we have toward
certain feelings and experiences based on our learning history. It is important to let these preconceived notions go since we should focus on how we feel in the moment versus how we think we should feel based on the past. Next is trust. As individuals in a hierarchical society, we tend to listen and follow those who have more knowledge than us. Although this is very useful in some situations, it is contradictory in mindfulness practices. You should listen to your own thoughts and feelings rather than your authority figure. While it is helpful to use them as a guide, you should guide your practice based on your beliefs, thoughts, and feelings. It is important to trust yourself otherwise your practice will not benefit you. Then there is having a non-striving attitude. In our lives we should have a purpose for our actions; otherwise there will be chaos. We ditch this mindset in mindfulness practices as we focus on what actually is happening versus what we want to happen or what we think should happen. It goes against the nature of mindfulness to not do so. Next is acceptance. Practices like these focus on the importance of the present moment. To fully appreciate this, we need to accept the present moment for what it is. This goes hand in hand with the non-judgmental nature as we shouldn’t attach a label to the present moment other than what it is. Finally there is letting go. This can also be called non-attachment. As humans we want to manipulate the way we feel by changing our thinking. This could be in a positive or negative way where we hold on to positive feelings to extend our happiness or move on very quickly from negative experiences so we don’t have to think about them. Mindfulness doesn’t focus on letting the feeling of the experience go, but instead letting go of the instinct to control your thoughts and feelings about the experience (Kabat-Zinn, 2013).

**Other Common Forms of Mindfulness and Meditation Today**

Mindfulness and meditation started gaining traction with the public in the 60s with the Beatles and Jon Kabat-Zinn, and around that time is when it started gaining popularity with
psychologists. For a while there were clashing views amongst the Western psychologists and meditation experts. The Western psychologists thought meditation was problematic while the meditation experts thought western psychology was shallow. This divide was diminished with education from both parties about the other. The closing of the gap allowed space for scientific studies and empirical research. In the past 60 years there has been an influx of research on mindfulness and meditation (Walsh et al., 2006).

There are many different methods of practicing mindfulness and meditation. These practices have evolved throughout time and can be adapted to fit the needs of the individual. The most common form of mindfulness is mindfulness based interventions (MBIs). This includes many forms of mindfulness, including mindfulness based stress reduction (MBSR). As mentioned before this was invented by Jon Kabat-Zinn. The program includes 2-2.5 hours of guided practice, daily practices at home, and a day-long mindfulness retreat. Common forms of practice include body scans, stretching, and yoga. The goal is to be mindfully aware of one’s body and life. There have been many different practices that have been based on MBSR (Creswell, 2017). Other forms of MBIs include mindfulness-based cognitive therapy, dialectical behavior therapy, and acceptance and commitment therapy (Good Therapy, 2018). Mindfulness can also be self implemented through behaviors such as practicing a mindful life. This can be executed through mindfully walking, eating, and other mundane daily activities. In order to do a task mindfully, one must perform it very slowly and take in as much as you can such as the smells, the sounds, and the feelings (physical and emotional) (Rezvan, 2014). Breathing exercises are also very common in mindfulness and meditation. There are many different styles and techniques such as Whim Hoff breathing, box breathing, alternate nostril breathing, belly breathing, 4-7-8 breathing, lion’s breath, pursed lip breathing, and many more. These are all
commonly practiced and recommended to be continued for 10 minutes; however, breathing exercises can be executed at any point in the day. If you are getting worked up about a problem, you can take a few deep breaths to feel more mindful. There are also many different forms of meditation practices. Some common ones include compassionate meditation, Zen meditation, transcendental meditation, progressive muscle relaxation, yoga, tai chi, mantra meditation, sound bath and many more (Headspace, 2020).

**Chapter 2: Emotional Regulation**

People use emotional regulation in their everyday life without realizing it. It is used for every emotion one could feel: happy, sad, anger, frustration, fear and many more. It is being used when we don’t scream at a child when they knock over a glass of milk or when we don't get frustrated at someone when we are explaining a concept, and they still don’t understand. It is common for people to believe that the purpose of emotional regulation is solely for controlling the reaction when negative emotions are shown when this is only covering part of its nature. We can also use emotional regulation to maintain emotions so that we can reap the benefits of the effects (Langston, 1994). This could look like displaying sadness in court to humanize the victim or boost a friend's confidence after a romantic breakup. While in these situations emotions help us keep a level of positive stimulation, an excess of emotions is counterproductive. It’s hard in some situations to understand the delicate balance that helps us function optimally, and it is the job of emotional regulation to help us navigate that path. Researchers have thought of and defined emotional regulation as “how we try to influence which emotions we have, when we have them, and how we experience and express these emotions.” The vocabulary was very particular since they wanted to emphasize the nature of the emotions being regulated by the individual and other emotions rather than the emotions regulating other things (Lewis et al.,
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2010). The part of our body responsible for regulation of our innate bodily functions is called the autonomic nervous system. These things include breathing rate, heart rate, sweat glands, sexual arousal, and much more. It is made up of two components: sympathetic nervous system and parasympathetic nervous system. The sympathetic nervous system is responsible for activating and stimulating the body. It has the fight or flight response. This could be seen through faster breathing, paranoia, and increased awareness. Meanwhile the parasympathetic nervous system is the opposite. It is responsible for calming the body down; this is called the rest and digest process. This could be seen through lower heart rate, contracted pupils, and decreased blood pressure (Cleveland Clinic, 2022). Emotional regulation would fall under the autonomic nervous system and use both sympathetic and parasympathetic nervous system qualities. A common visual representation of emotional regulation taught by Professor Wei-Chin Hwang is thinking of a cup. When an individual feels certain emotions, the cup gets filled with water. When a person is stimulated by an emotion, water gets added to the cup. When an individual is overstimulated, water continuously pours into the cup and it would overflow. It is the job of the emotional regulation to decrease the level of water in the cup. Mindfulness helps in this example not through decreasing the initial emotions but by increasing the size of the cup to where you are less likely to overflow and get overwhelmed. People have long researched the effects of emotional regulation on all aspects of life such as mood, well-being, etc.

Positive Outcomes from Emotional Regulation

When an individual is able to regulate their emotions, it can have lots of positive effects. These effects are widespread as they have been shown to affect the well-being of people. Amelia Aldao and her team sought to look into the relationships between emotional regulation strategies and psychopathology. These results showed that there is a significant relationship between ER
strategies and anxiety and depression (Aldao et al., 2010). A person is better equipped to handle their emotions from anxiety and depression when they practice emotional regulation since his or her cup is bigger. Emotional regulation can aid in developing emotional intelligence. This construct is known as the ability to understand your own and other’s emotions (Mental Health America, 2024). By definition these two concepts are intertwined as an individual would only have the ability to regulate emotions if they are able to identify and understand their emotions. Emotional exhaustion and emotional regulation are also related through definition. Emotional exhaustion is defined as the feeling when stress begins to collect and the individual is overwhelmed by feelings of negative emotions (Mayo Clinic Health System, 2024). This directly relates to the cup analogy. The individual can use emotional regulation to reduce the effects of stress by increasing the size of the cup. This means that as the water rises, the water line is farther from the top than it was before causing less feelings of being overwhelmed. Emotional regulation can also lead to happier individuals. Christina Marie Clare Bond developed a study that looked at the relationship between emotional regulation and well-being. In this study well-being was defined as happiness. She found a relationship between these two factors as the control group showed significantly less happiness than the treatment group (Bond, 2019). Having a developed emotional regulation system can help in many aspects of life, including performance.

**Emotional Regulation to Performance**

Emotional regulation can help with performance in the workplace, school, and athletics. While a certain level of stress is needed for maximizing efficient performance, excessive stress will decrease productivity and decrease job satisfaction. There is a bell curve relationship between stress and productivity. It is described as the inverted-U hypothesis where as stress
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increases, performance increases until it reaches a peak where then it decreases (Arent & Landers, 2003). When individuals are hitting the peak of the curve, they are functioning at their highest potential. This automatically means they are increasing their performance. The inverted-U curve is different for each individual. People have different baselines of stress and are able to tolerate different levels of stress depending on various factors such as personality types or level of experience (MindTools, 2022). Emotional regulation can help individuals stay within their optimal limit by decreasing the amount of stress since it is more common that workers feel over stressed than under. Within the workplace, emotion regulation has shown to increase performance through use of emotional intelligence. Emotional intelligence has been a major indicator of job and academic performance along with many other components of life such as negotiation, leadership, emotional labor, trust, work–family conflict, and stress. In the workplace it is essential that people are aware of their emotions in order to produce the best work and have an exceptional experience. Having a developed emotional regulation system can also increase work related factors such as engagement, productivity, job satisfaction, and more. A meta-analysis study done by Ernest H. O’Boyle and other researchers tested different methods of determining emotional intelligence to figure out the best method and most accurate at predicting job performance. They used the idea that was made by Ashkanasy and Daus that emotional intelligence is classified into three different streams. Stream 1 was ability-based methods which was made popular by Peter Salovey and John D. Mayer with the four branch model which included perceiving emotions, using emotions to facilitate thought, understanding emotions, and managing emotions. Stream 2 was trait-based which was based on the model made by Salovey and Mayer which used self-report and peer-report methods (Ashkanasy & Daus, 2005). Stream 3 was the mixed model because it incorporates other factors that aren’t represented in Salovey and
Mayer’s model such as self-awareness, self-regulation, social awareness, relationship management, and motivation (Cherniss & Goleman, 2001). O’Boyle hypothesized that all three streams will be a significant indicator for job performance. The data and analysis supported the hypothesis as there was a significant and positive relationship between emotional intelligence and job performance. All three streams were shown to be as effective as each other since there was no significant difference in job performance from each stream when doing comparative analysis. In these studies job performance was measured through task performance measures which were different based on the nature of the job for each individual (O’Boyle et al., 2011).

Past literature relating to mindfulness interventions on emotional regulation confirms that mindfulness will help with performance. U.R. Hülsheger developed a series of two studies to prove that mindfulness can decrease emotional exhaustion which will, in turn, increase job satisfaction. When an individual is more satisfied with their job, the more likely they are to succeed at that job (Judge et al., 2001). The first study was a diary study of employees over five days in which they looked for key themes. The researchers found that there was a positive correlation between mindfulness and job satisfaction and negative correlation between mindfulness and emotional exhaustion. The purpose of the second study was to establish a causal relationship between these factors which led to them setting up an experimental design. The results were consistent with the first study as the control group experienced higher emotional exhaustion and lower job satisfaction than the mindfulness group (Hülsheger et al., 2013).

Emotional exhaustion is significantly related to work-related outcomes which affects performance (Wright & Cropanzano, 1998). Therefore it is in the best interest of the company and the individual to reduce emotional exhaustion because of its relationship with job performance. The connection was explained through a meta-analytic review done by Chao Miao
and other researchers. They looked at the associations between trait mindfulness and emotional intelligence. There was proven to be a positive relationship between these two factors. An interesting finding was that the type of scale for mindfulness affected the strength of the relationship. While all the relationships were positively correlated, some were stronger than others. For example, the Mindful Attention Awareness Scale (MAAS) had the least effect size while Five Facet Mindfulness Questionnaire (FFMQ) had the highest effect size. This was due to the nature of the scale as the FFMQ focuses more on emotions than the MAAS (Miao et al., 2018). The difference is important for people to understand since they want to be maximizing their mindfulness practice and its effects.

Students are inclined to deal with lots of emotional stressors. This comes from difficulties managing their time with deadlines, relationships with teachers and professors, and dealing with the pressure to get good grades. This triggers them to suffer from anxiety and depression (Allison et al., 2013). It is important that students have the ability to regulate their emotions of feeling anxious and depressed. If they don’t, it can have significant impacts on the student's performance since instead of focusing on the material, they are focusing on these stressors. When individuals, particularly students, suffer from anxiety or depression, they are less likely to succeed in school relative to their peers who don’t have feelings of anxiety and depression (Owens, 2012). Achievement and performance are linked with each other since high performance is needed for high achievement. There is an interesting relationship between anxiety and achievements. Higher achievement leads to lower anxiety; however, higher anxiety leads to lower achievement. This is a very delicate balance. Evren Erzen conducted a meta-analysis looking into the effect of anxiety on student achievements. The 151 studies included in this meta-analysis showed that anxiety had a significant and negative effect on achievement (Erzen, 2017). When students are able to work
through their emotions of feeling anxious and depressed from school stressors, they are more likely to succeed in their academic performance. This is due to the students having a better mindset for studying. They feel this decreased level of anxiety since they are performing well which goes back to the complicated relationship between performance and anxiety.

Emotional regulation is also advantageous for athletes. Athletes can easily feel stressed especially when they are in season. This can be due to the pressure of performing well and not letting down their coaches, teammates, family, and fans. It can get more intense in the game with the looming anticipation ahead which can lead to lots of athletes choking. This fear and anxiety can get into an athlete's head. This is known as performance anxiety. It has similar effects that an anxious or depressed student has on performance as stress is also known to affect performance. Too little mental stimulation doesn’t prepare the athlete for the competition they are about to be in. They feel a lack of confidence and motivation driving them to perform well. Too much mental stimulation overwhelms the athlete and causes them to not have a clear mindset going into the competition. This could lead to burnout and exhaustion causing the athlete to fail or quit.

Within the field of sports, it is known as the stress response curve which has a similar structure as the inverted-U hypothesis described with job performance (Giulia Tossici et al., 2024). Emotional regulation techniques can serve as a catalyst for change in the way that athletes handle these feelings.

Additionally emotional regulation can help people in leadership positions in sports. Individuals who display a sense of level-headedness are more likely to effectively communicate the game plan or strategy with the team. This is very powerful and should be used to their advantage to boost their player’s performance which will increase the score leading to a victory.

Isabel Mercader-Rubio and her team of psychologists conducted a cross-sectional study looking
at the relationship between informal sports leadership positions and emotional intelligence. The operational definition of emotional intelligence in this study is made up of three skills which are emotional regulation, attention, and clarity. Having a high level of emotional regulation and clarity is shown to have an effect on the effectiveness of a leader (Mercader-Rubio, 2023). It allows the leader to have a better understanding of the athlete and have a healthy relationship with them which includes effective communication and support. The conclusions drawn from this study was that coaches can have a positive influence on the athlete’s and team’s performance. Additionally, there is proof that a coach’s teaching strategy has an impact on an athlete’s ability to regulate emotions. The use of autocratic leadership is shown to increase suppression of the athlete’s emotion as shown by the study done by Adem Solakumur. He looked at the effect of leadership behaviors on athlete’s emotional regulation strategies (Solakumur, 2023). Coaches should consider all repercussions of their behaviors on the athletes. They are major role models for the athletes and can influence the way their players perform based on the emotional regulation strategies they develop from their coach. This can also impact the individual for the rest of their life.

**Mindfulness to Emotional Regulation**

Mindfulness has been shown by many researchers to increase emotional regulation. Through emotional regulation, mindfulness can increase happiness, decrease emotional exhaustion, develop emotional intelligence, decrease anxiety and depression, and help with managing stress and frustration. All of which have been shown to increase an individual's performance.

There was a study done in a Spanish hospital to test the impact of MBIs on happiness and performance in the workplace of hospital employees. They tested for mindfulness, work
engagement, happiness, and job performance. They implemented an eight-week study to test this and found that this type of intervention program is the standard. The results showed that MBIs are effective in increasing all the hypothesized factors. It was shown that people who practice mindfulness are more likely to handle day to day problems better due to their skills they’ve developed with emotional regulation (Coo & Salanova, 2017).

Mindfulness is proven to have a negative relationship with emotional exhaustion as shown in the 2016 studies done by Jochen Reb and his team where they conducted a study to test the relationship between these factors. The researchers operationalized emotional exhaustion with turnover intentions. The control group showed significantly lower turnover intentions than the treatment group. The results of the study confirmed the inverse relationship (Reb, 2016). This shows that a worker is less likely to succumb to the pressures of the job and quit if they are practicing mindfulness, and if a worker is feeling upset enough to the point of wanting to quit, their performance is likely to follow.

One can also gain higher emotional intelligence through mindfulness practices. There have been numerous studies on this including Nerea Jiménez-Picón’s systematic review on healthcare professionals which showed the positive effects that mindfulness has on emotional intelligence. The final review included 10 studies that all pointed to the conclusion that mindfulness is a strong way to develop one’s emotional intelligence (Jiménez-Picón, 2021). There were many different types of studies and scales included which reduces the limitations of the review and increases the credibility of the finding.

A 2018 meta analysis done by Mandy D. Bamber and her team examined the effects of mindfulness meditation on anxiety in college students. They found that as MBIs are introduced to college students, anxiety and stress significantly decreases. It was shown that interventions
with more sessions were more successful in reducing anxiety and stress than those with fewer sessions (Bamber & Morpeth, 2018). These findings are consistent with other studies and meta-analyses that weren’t included in Bamber’s review such as Alethea Desrosiers’ study about mindfulness and emotional regulation in anxiety and depression. She wanted to see if different types of emotional regulation strategies had an effect on the relationship between mindfulness and depression and anxiety. The specific types of emotional regulation strategies were rumination, reappraisal, worry, and nonacceptance. The results showed that anxiety and depression react differently to different types of emotional regulation since there was a significant mediation between rumination and worry on mindfulness and anxiety and a significant mediation between rumination and reappraisal on mindfulness and depression. Rumination is said to be attributed to mindfulness due to the nature and definition of both of these factors (Desrosiers et al., 2013). Rumination is the deep thought about something. One of the key pieces of mindfulness is the nonjudgmental nature of it. These go hand in hand since a thought will enter the mind and the individual must be accepting and nonjudgmental of these ideas. When people can regulate their emotions, they are better equipped to handle stressful situations, manage anxiety and depression, develop strong relationships with those around them, and be more aware of their surroundings and current situation. Mindfulness plays a key role in this process since one is able to achieve emotional regulation through these strategies which makes the individual better off.

**Conclusion**

Developing strong emotional regulation skills will increase performance in many areas such as in the workplace, academics, and athletics. This process happens through many avenues such as increasing happiness, developing emotional intelligence, and reducing anxiety,
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depression, and stress. Mindfulness affects these factors, either positively or negatively, and the outcome is higher performance. By understanding the importance of these practices and implementing effective strategies, institutions can increase people’s performance which is usually the goal for leaders. Emotional regulation is a broad category that encompasses many facets. In conclusion, mindfulness affects emotional regulation and can help in improving performance in the workplace, academics, and athletics.

Chapter 3: Flow

There are many terms that capture the idea of being in a rhythm or in the zone. In the psychology community we describe this as being in the flow state. This term was invented by Mihaly Csikszentmihaly in the 1990s. He described it as “a state of concentration so focused that it amounts to absolute absorption in an activity” (Csikszentmihalyi, 1990). This is a very pleasant and satisfying feeling. It is a feeling of focus, alertness, control, and concentration. He developed this concept through a series of interviews with individuals from across the world who are interested in and specialize in different fields. He had a few major takeaways from the experience. Firstly, everyone described their enjoyment very similarly. This was regardless of the activity they were doing. It was the same for athletes, musicians, hobbyists, and everyone else who participated. The second takeaway was the common feeling of enjoyment specifically when things were going well. Everyone, regardless of their personal demographics, described their optimal state very similarly. This allowed for many key elements for flow and the optimal experience to emerge including challenge-skill balance, action-awareness merging, clear goals, unambiguous feedback, concentration on the task at hand, sense of control, loss of self-consciousness, transformation of time, and the autotelic experience. The activities that we enjoy the most tend to be mentally stimulating; we need to have a challenge to overcome with
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skill. This keeps it from being mundane. Merging actions and awareness refers to when individuals are so invested in the activity that their body takes over, and they don’t need to tell their brain what to do because it already knows what to do. When we don’t have clear goals, it is hard to feel accomplished which diminishes the optimal experience. Feedback doesn’t necessarily need to come from other people. We can give ourselves feedback to continue or change what we are doing to make the experience better. When an individual is in a flow state, they tend to forget about the other stressors in their life. The most important thing in their life is the current activity. In the flow state individuals feel a sense of control which diminishes their worry. It allows for a sense of calmness to take over since they know that they are in the driver’s seat. When we don’t have a clear definition of self, we are able to push ourselves beyond what we think we could do. Not having a threshold makes us push the prior limits we no longer have. When individuals are in the flow state, they lose a sense of time. It feels like time passes differently than normal. It generally feels like time is moving very slowly. Lastly, there is the element of the autotelic experience. This means that the activity is enjoyable in itself without a reward (Csikszentmihalyi, 1990). For example, playing a card game with your child. Sometimes parents let the child win to make the child feel accomplished, and the adults don’t care about winning but care about the experience of being with their happy child. Flow cannot exist without any of these dimensions.

There are a few different methods for testing flow and seeing the sizable effect it can have. Some common practices are self report questionnaires, interviews, and experience sampling. The most commonly used scale for flow is the Flow State Scale (FSS) which is a 36-item questionnaire that assesses for many different aspects of a person relating to goals, concentration, control, consciousness, time relation, autotelic experiences, and balance. All of
these are crucial points relating to flow. The individual ranks each question on a Likert scale and when adding all the numbers up, a higher score is considered to have a greater flow experience than the lower scores (Lonczak, 2024).

**Flow to Performance**

Flow can help considerably with increasing one’s performance. People are gaining more interest in the effect of the flow state on athletic performance. You can hear it in the post game interviews when an athlete had a stellar performance. When they describe the experience, it sounds like they weren’t even thinking about what they were doing; their mind was in a trance and their body took over. Lots of people describe this as being in the zone. This has been a catalyst for the research in the flow state. A key factor of flow is the autotelic experience. This is known as an experience that is intrinsically driving an individual. A study conducted in 2007 by a group of researchers at universities in Greece and Australia found that high level performance is enjoyable in itself without the reward of winning. This is why some people are satisfied with their performance even if they fail. The regression analysis showed that a significant amount of the variability in subjective performance was due to the autotelic nature of their experience (Stavrou et al., 2007). While this review was about overall performance, there are many studies looking at the effect on athletic performance specifically.

Athletes are well versed with the flow state. Flow is very attainable in sports and can help athletes have an advantage over their opponents. While it isn’t promised that they will beat their competition since there are other factors that influence the outcome like opponent’s skill, it will help the individual with their own and team performance (Birrer et al, 2012). David J. Harris and his colleagues collected an abundance of studies to use in their systematic review about the relationship between flow state and performance. The results showcased findings between flow
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and mindfulness across many different types of performance such as different sports and computer gaming. All of the studies and articles were survey based so the researchers could not establish a causal relationship; however, there was a correlation between the factors (Harris et al., 2021). Luis Eugênio Martiny and his colleagues conducted a review that did include experimental studies. This review focused on the effects of the flow state on athletes specifically on team sports. It showed that when athletes are in the flow state, they are more likely to have a better performance. Most of these interventions of the experimental studies included some form of mindfulness or meditation (Martiny et al., 2023). There is a consistent theme within the past literature about how flow positively affects an athlete's performance.

Flow has also been shown to improve creative performance. This covers artistic performance and creative ways to solve problems. People have developed a growing interest in connecting creativity and flow together. Through many studies there has been an established relationship with creativity and flow. Nicola S. Schutte and John M. Malouff looked at this in their 2019 study. They specifically focused on the relationship between curiosity, flow, and creativity. This experimental study had participants do a novel task then they were asked about their experience with it. The participants self-rated on a few scales that included statements about creativity, curiosity, and flow. The results were consistent with one of their hypotheses; flow had a significant relationship with both creativity and curiosity and served as a mediator for these factors (Schutte & Malouff, 2020). Flow was a mediator since creativity and curiosity were not significantly related between themselves, but both of them had a significant relationship with flow. It showed that flow was necessary to have a better creative performance, and it stemmed from having a curiosity in the activity. This is consistent with the findings in Yongjun Dan and his colleagues’ study looking at the relationships between learning interest, flow, and creativity.
There was a clear path which put flow in the middle of these two variables as the mediator since interest was significantly related to flow and creativity, but flow and creativity weren’t directly related. Within flow, there were dimensions that stood out as more influential than others such as clear goals and enjoyment. This can be attributed to individuals being more creative when they are enjoying themselves in the activity. If they were not, it would require more energy and effort to produce the same creative results. This was more significant than a clear goal; however, it is important in the connection with interest and creativity. When individuals have a clear goal, it instills a sense of purpose in them for the activity. This allows them to be fully immersed in the creative process which will lead to an enhanced creative performance (Dan, 2021). The findings from these two studies are very similar as interest and curiosity were defined very similarly in both of these studies. This can confirm a sense of validity on the subject of flow and creativity which is moderated by a desire to know more.

In some cases with creativity, specifically artistic, it is hard to measure the level of creativity that an individual displays. In sports performance this is not an issue since there is a clear metric (their statistics) to measure how well they performed. There is not a clear measure for visual arts, so we rely on the stories of the artists to paint the picture of flow in the arts. Tatiana Chemi wrote a book about flow within the creative process of the arts. She interviewed and told the stories of 22 well-respected artists. An interesting note about each of these people’s experiences is that they all touched on at least one aspect of the nine dimensions Csikszentmihalyi outlined in flow (Chemi, 2016). This confirms that it is a well established feeling amongst people in the creative process when they are making their art. By being able to manipulate the psychological factors that affect flow, coaches, support staff, and the athletes can increase their chances of success.
Mindfulness to Flow

Mindfulness has been shown to increase the likelihood of the flow state. While mindfulness and flow seem to be contradictory, they are related. This paradox is simple as when you are practicing mindfulness and meditation with the intention to increase performance, you are extremely aware of your thoughts and environment which includes time. However, while in the flow state, individuals lose track of time. These entities are not happening simultaneously. Mindfulness and meditation need to happen prior and individuals cannot practice mindfulness while being in the flow state.

There has been a growing interest in research on this connection. A recent 2022 meta analysis by Nicola S. Schutte covered this link. The analysis consisted of 17 studies amassing over 10,000 subjects. The hypothesis was that a higher level of mindfulness would be associated with higher levels of flow. Higher levels of flow were measured through the experience with it. This was supported by the findings. This is assumed to be due to the fact that mindfulness can help increase each of the dimensions within mindfulness such as challenge-skill balance, clear goals, concentration, action and awareness merging, and loss of self-consciousness. When each of the dimensions are increased, the likelihood that the individual will experience flow more frequently is greater. Within the 17 studies examined in Schutte’s meta-analysis, there were a few experimental studies that outlined the causal relationship between mindfulness and flow such as John Scott-Hamilton’s experiment with competitive cyclists (Schutte & Malouff, 2023). In this experiment, cyclists were randomly assigned to a mindfulness group or control group. The mindfulness interventions consisted of workshops, at home meditation sessions, and mindful spin sessions. All the participants took surveys including many scales that accounted for flow and mindfulness. Unsurprisingly, the mindfulness group displayed an increase in the mindfulness
scales while the control group did not. The mindfulness group also saw an increase in the flow scale while, again, the control group did not (Scott-Hamilton et al., 2016). Studies like these are crucial in the investigation of the relationship between mindfulness and meditation and flow.

There is a large growing interest in mindfulness and the flow state specifically in the athletic community. Many different types of studies have been conducted to look at the relationship between mindfulness and flow, and they all have similar results which further confirms the validity of this relationship. For example, Ying Hwa Kee and John Wang looked at this relationship among college student athletes in Singapore in a cluster analysis. The surveys included scales such as the Mindfulness/Mindlessness Scale, Disposition Flow Scale, and Test of Performance Strategies. They created the clusters based on the level of mindfulness in the individual. All the tests confirm that the high mindfulness cluster had significantly higher flow scores than the other groups. The numbers clearly displayed the high mindfulness cluster with the highest flow followed by the average mindfulness group followed by the low mindfulness group. Although not every flow disposition from Csikszentmihalyi was significantly higher in the high mindfulness group, the overall score was significantly higher indicating a positive relationship between mindfulness and flow (Kee & Wang, 2008). Another popular study using a survey was conducted by Jian-Hong Chen and her team analyzing mental health and flow state in baseball players. All the subjects completed a baseline survey with questions about mental health, flow, and mindfulness. Immediately they participated in a mindfulness workshop that consisted of breathing exercises. For the next month, they were instructed to continue practicing on their own and after the month, they took the survey again. The researchers found a significant and positive correlation between mindfulness and flow state (Chen et al., 2018). This finding is confirmed with a few experimental studies. In 2011, a group of psychologists at University of
College Dublin and University of Western Sydney conducted an experiment to test the effects that mindfulness had on flow within college student athletes. They collected baseline data about each participant’s mindfulness ability and previous experience through the Cognitive and Affective Mindfulness Scale – Revised (CAMS-R) and their experience with flow through the Flow State Scale – 2 (FSS-2). The participants in the treatment group were assigned a six week mindfulness program. Then they, along with the control group, did the two scales again for comparison. The hypotheses were that the treatment group would have a greater flow experience than their baseline and that they would experience flow more than the control group. The hypotheses were supported by the results. There was a large effect size from the pre and post intervention only for the experimental group indicating that mindfulness was the cause for change in flow. They used a variety of mindfulness and mediation techniques to achieve these results such as breath exercises, standing yoga, and a body scan (Aherne et al., 2011). These are all very common forms of mindfulness. While most of the current studies are using athletes as their subjects, researchers are also looking into this relationship with non athletes. Jennifer Meggs and Mark Chen conducted an experimental study using sedentary adults. Again, this result showed the same findings as the other studies signifying that mindfulness interventions increase the flow state for all (Meggs & Chen, 2021). This is useful for many since lots of people don’t consider themselves to be athletes. They are included in the research and can benefit from the flow state through mindfulness just like athletes do. Flow is a tool that we can use to increase our performance, and mindfulness can help us achieve it.

**Conclusion**

The flow state, created by Mihaly Csikszentmihalyi, is a mental state where an individual is completely focused, energized, and happy. The discovery of the flow state was a feeling that
many felt but couldn’t describe. Many researchers have looked into the benefits that flow can bring to individuals such as increased performance, happiness, motivation, and many more. Mindfulness can help individuals achieve the flow state easier which helps increase creative and athletic performance. This has been proven through many experiments and surveys conducted by researchers. When individuals are entering flow state easier, it will trigger them to practice mindfulness more. This is done through operant conditioning as the increased performance from flow is reinforcing the behavior of mindfulness. It is important that athletic departments and sports psychologists recognize the importance of flow on athletic performance and how mindfulness is able to foster it.

Chapter 4: Cognitive Functioning

Cognitive functioning refers to many processes in the brain. This complex procedure includes learning, interpreting, reasoning, perception, attention, and much more. There are many different positive effects from increasing the ability to perform each of the skills above. All of these skills are connected. Individuals have varying levels of baseline concentration. This is inevitable as all humans are born with different capacities; this means there are different levels of awareness of themselves and their surroundings. When individuals are able to be aware of these things, they can retain information since without awareness, there would be no information to retain. This allows them to have a better memory. Along with different levels of concentration, people have different thresholds for fatigue. When an individual has a higher resistance to fatigue, it allows them to be able to continue their craft without pauses which leads to a more efficient result. This can allow for better decision making and problem solving since you’re able to make a better plan when you’re less fatigued mentally and physically. All of these processes are intertwined into a complex system that is called cognitive functions. The effects are
widespread as they help individuals, and mindfulness has the ability to increase the effectiveness of these processes. Mindfulness involves intense awareness which requires a significant amount of concentration. You need to be able to focus on the practice in order to gain the benefits from it. When individuals are fatigued, they are more likely to lose their concentration which affects the quality of their meditation. We need to correctly decide the frequency of our mediation sessions since if we don’t meditate frequently enough or for long enough, it may lead us to not reap the full benefits. It is important to remember our intentions when doing mindfulness and meditation sessions since we can keep track of our progress with mindfulness within ourselves. Mindfulness and meditation are practices that can intervene with these processes to help eliminate suboptimal functioning of them. This is directly related to how an individual can perform.

**Cognitive Functioning to Performance**

Cognitive functions are essential for better performance. This is done through processes such as reduced fatigue, better memory, better awareness and concentration, and increased ability for decision making and problem solving. When individuals are able to withstand burnout and are able to elongate the time before fatigue, their performance will increase. A study done by Darrell J. Glaser showed that academic performance can significantly change based on fatigue. He looked at the exam date and the exam scores for freshman students in the U.S. Naval Academy from 2013-2017. At this school, professors are allowed to schedule exams on any day of the week except for Sunday. This is considered the break day since they don’t have class or exams. After running an OLS estimate, the results showed a higher score for the students that took the exam after the break over the ones that took it before. This affected the letter grade they received by a quarter of a letter grade. This is the difference between a B+ and a B or B+ and A-
which is meaningful to lots of students. This result remained steady after controlling for external factors that could impact grade such as IQ and time of day (Glaser & Insler, 2022). This shows that students need a break in order to perform better. They don’t perform well when fatigued as shown by the exam scores. Their brain is likely overworked and is less likely to function at its maximum potential. It also gives them time to study in a relaxed environment so that they can absorb the material better. Workload is known to have a negative relationship with performance. This is shown through Jialin Fan and Andrew P. Smith’s study. They conducted an experiment with undergraduate students. The independent variable was the workload where students were either assigned to a high or low workload group. They were instructed to complete a fatigue survey before and after their work session. Unsurprisingly, a higher workload was associated with a higher level of fatigue post-session. This can largely be attributed to the length of time working. Extensive statistical analysis was conducted to test the effects that fatigue has on performance, and again, there was a significant finding. Higher levels of fatigue led to reduced performance in the form of higher inaccuracy (Fan & Smith, 2017). Students are unable to retain all the information they are being presented when they are in these fatigued states. These principles are likely to be similar for work related outcomes and performance. When considering fatigue with regard to athletics, there are two types to note: mental fatigue and physical fatigue. Physical fatigue often happens during any type of physical activity especially when participating in a competitive sport. Mental fatigue is also a common issue a lot of athletes face. They feel burned out from the long training hours, tough coaches, and rigorous schedule. This can cause lots of athletes to walk away from their sport. Mental fatigue can decrease the ability to make correct and informed decisions in competition which affects the outcome of the team. Petrus Gantois studied this in an experimental study using soccer players randomly assigned to different
lengths of a Stroop test which is a mentally tough task. Then they played in a soccer game and were analyzed using the Game Performance Assessment Instrument. The high intensity fatigue group showed significantly worse performance related to the moderate and control groups (Gantois et al., 2019). This shows that mental fatigue can affect the performance of an athlete. This should be considered by coaches, support staff, and the athletes so that they can increase their odds of performing well and decrease the amount of people that quit. Physical fatigue can also affect an athlete’s performance. This is no shock. If someone told you to run a mile, you probably would be able to do it well if you are in a good physical condition. But if someone told you to run a mile after you just completed a 10 mile hike, you would probably have a slower time. This phenomenon is confirmed in the systematic review done by Felipe Dambroz on soccer players. Fundamental techniques such as scoring, passing, and dribbling were negatively affected by physical fatigue. Not only will it lead to worse performance, but there were also some studies that focused on how it will lead to injuries (Dambroz et al., 2022). This can be because your body is operating at a high level and you will overlook some movements that can cause injury.

Memory can help increase an individual’s performance. They need to be able to retain information so they can work faster and more efficiently. Researchers refer to this process as working memory or WM. There is proof that a better working memory is associated with better academic performance. E.T. Aronen conducted a study with elementary school children to assess this relationship. 66 students were asked to complete memory tasks on a computer. The results were compared with the student’s academic grade. The comparison showed that more incorrect responses were associated with lower academic performance. This shows a positive correlation between memory and academic performance (Aronen et al., 2005). This is consistent with Mark Ashcraft’s study looking at the effects that WM has on math performance (Ashcraft & Krause,
This can be due to students being able to pick up quicker on topics that they are learning. While this can be overcome with more studying, having a better memory is a quicker solution.

Athletes use memory in a few different ways to help with performance. Working memory can assist sports performance. This is shown through Greg Wood’s study. He put individuals into a low or high working memory capacity group based on a survey. They were instructed to shoot a pistol at a target using a reserve-Stroop task where they shot at the meaning of the word as opposed to the color of the word. An example would be the color blue written in yellow text and the individual would have to hit the blue dot that is next to the word instead of the yellow dot. The high WMC capacity showed significantly higher accuracy than the low WMC group (Wood et al., 2015). Those with a higher capacity could remember the correct strategy and execute the correct game plan by choice, not by chance. They were able to know which target to shoot at since they were able to remember the correct strategy. This can help athletes since they are able to remember the coach’s game plan during competition. They don’t need the constant reminder from their coach of what to do which will help them focus more on the task at hand rather than looking to the sideline for instruction. These findings are confirmed by Robert S. Vaughan’s study on attention, working memory and sports performance; however, he used a basketball task instead of shooting. The subjects were able to shoot the basketball more accurately when they had a higher working memory capacity (Vaughan & Laborde, 2021). Athletes also use motor memory. This is a type of memory that involves a “capacity to remember executed movements” (APA Dictionary of Psychology, n.d.). People develop this through repetitions. This is commonly confused with muscle memory; however, that refers to muscle being regained after a period of muscle loss. Motor memory aids in achieving the flow state since your body knows what to do in competition (Eschmann et al., 2021).
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Having a high level of awareness can increase achievement and performance. Rasha M. Abdelrahman tested this in a survey study. She had 200 upper level psychology college students take a survey to get a baseline understanding of their metacognitive awareness. In the study, metacognitive awareness was broken down into two categories: metacognitive knowledge and metacognitive regulation. These were further broken down into declaration, procedural, and conditional knowledge for the former and planning, information management, and comprehension momentary for the latter. The results supported one of the hypotheses that higher metacognitive awareness helps with higher academic performance. The key takeaway from this study is that when students have a higher awareness of the material, the processes, and their plan for success, they can perform better on the exams. It is important to note that everyone has a different baseline for metacognitive awareness; however, there are skills that can be trained to increase this. This allows for schools to change the fate of their students by implementing training to help with increasing awareness (Abdelrahman, 2020).

Awareness can also help athletic performance although this is in a different way than in the classroom. Situational awareness is what helps athletes thrive. This was defined by Mica Endley as “the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning and the projection of their status in the near future” (Endsley, 1988). This three tiered definition is the most common and popular framework for situational awareness. Achieving all three tiers of this could look something like this. A basketball player sees another player grab the ball on a rebound (perception), then they need to decide whether the person is their teammate or their opponent so they can decide whether protect them or to defend (comprehension), then they need to predict what the player will do based on who it is and their positioning on the court for if they will try to shoot it again or pass it to their
teammate to transition to offense on the other side of the court (prediction) (Huffman et al., 2022). Each level is important to achieve particularly before moving to the next one. The player would not be able to comprehend if the player that has the ball is their teammate or opponent if they don’t see the player. Likewise they can’t predict what the person will do if they don’t know which team they are on because that is the most crucial thing for predicting the next move. It is important that athletes have a fast and accurate understanding of their situation, so they can make their movements efficient and not expend unnecessary energy. Stephen Mark Hadlow went as far as to claim that in order for athletes to reach high performance, situational awareness is mandatory (Hadlow et al., 2018).

Lastly, a huge part of cognitive functioning that can significantly affect performance is decision making. While decision making in the academic space can affect how a student goes about studying and time management, the big findings for decision making were in the workplace and athletic spaces. Within the workplace, decisions are made individually and within a team. It is important in both scenarios, so it can increase both personal and company outcomes. A huge part of decision making is problem solving as the individual needs to be creative to pioneer a solution that will result in the best outcome. With this in mind, individuals come together to create bigger decisions for the company. Developing a strong decision making system can significantly help a company’s performance. It can affect the profitability and financial health of a company which is a major goal for most companies. Yun Zhang and his team conducted a meta analysis to confirm the overall effectiveness of decision making on a firm's performance. According to the researchers, there are two types of decision making processes: causation logic and effectuation logic. “Effectation …. focuses on the given means, attempts to control the future and maintains flexibility and cooperation …. causation focuses on given goals
and established plans and attempts to predict the future in a relatively certain environment” (Zhang et al., 2022). Generally a company uses an effectation decision making approach in the beginning then transfers to a causal approach. This is the practiced standard since in the beginning companies are working with fewer resources and need to be able to make adjustments quickly. (Pfeffer & Khan, 2018). An effectation decision making process will understand their resources and make a plan given that information, and a causation decision making process will set a standard for themselves and do whatever it takes to achieve it. There are different benefits and drawbacks of each type, and different situations and timelines call for each one. There also has been proven benefits that in the right situations applying both can improve performance in “financial and growth performance, investment performance, innovation and research and development (R&D) performance and venture performance.” Both approaches individually can also have a positive and significant impact on performance (Zhang et al., 2022). Company’s decision making can only be successful if the individual’s decision making is adequate. Knowing these different strategies can help individuals within the firm decide the best way to formulate their plan for the company. This is a relatively simple fix for individuals to implement in their business plan that has proven positive effects.

Decision making also affects an athlete's performance, but this is in a different way than the workplace. In athletics, decision making is used to assess the situation to proceed in a way that will yield the best outcome. Athletes are in high pressure situations a lot of the time. This is from competition and the rigorous schedule that it demands. The ability to make decisions in high pressure situations is a tough skill to master; however, if it is done, athletic performance will likely follow (Parkin et al., 2017). Often in high pressure situations athletes are likely to play it safe rather than take the risk to score. This is not always the best choice depending on the
opponent’s skills, your own skill, and the situation; however, athletes in high pressure situations don’t always follow through with the best decision. Developing a better decision making plan is hard to achieve; however, there are mechanisms that can help not only with decision making but with all the processes that are mentioned above.

**Mindfulness to Cognition**

Mindfulness has been shown to help increase cognitive functioning in individuals. Many meta analyses and systematic reviews have been conducted to link mindfulness and cognitive functioning together such as the one conducted by Sungjin Im and his team. Through their extensive research, they found that mindfulness based interventions can improve cognitive functions. This is done through executive functioning such as generating plans and organization (Im et al., 2021). This is consistent with the other literature such as Tim Whitfield’s and his colleagues’ meta-analysis which shows that mindfulness based programs can increase cognitive functions in adults (Whitfield et al., 2021).

Mindfulness also affects each individual process mentioned earlier. Mindfulness can improve memory significantly. Your working memory capacity has the ability to grow from mindfulness. This was tested by Amishi P. Jha through an experimental study. The subjects in the treatment group were given an eight week mindfulness training course while the control was not. Results indicated that the treatment group showed significant changes in working memory capacity (WMC) while the control group did not (Jha et al., 2010). WMC changes over time, but we have the ability to control whether it increases or decreases or maintains through the use of mindfulness training. It also can increase motor memory. Practicing mediation after a workout or training session can help an athlete absorb the information into their body better (Immink, 2016). This process of reflection on the session allows individuals to comprehend their movements
which will allow them to go into the next session stronger and more confident. Mindfulness can also help with concentration. When one practices meditation, they learn to take in information and their surroundings without judgment and simply acknowledge what is there. This mental skill will transfer to other situations outside of mediation like how they would concentrate on the task at hand in the workplace, classroom, or athletic competition. This can be shown through J. J. Ricarte’s study regarding how MBIs can affect attention, concentration, and mood. This consisted of an experiment with elementary school children. Concentration was significantly increased in the mindfulness group (Ricarte et al., 2015). Common difficulties people face when starting to practice mindfulness and meditation is the ability to focus on the technique or practice. Their mind often wanders to other things such as what they are doing later that day, what they are going to eat, etc. Practicing mindfulness and meditation exercises the concentration part of your mind. The more you practice, the easier it will become. This can then translate to other parts of your life. Mindfulness also helps with fatigue – both physical and mental. Danilo R. Coimbra looked at this with his study on volleyball players. The mindfulness group had significantly less mental fatigue than the other groups. Athletes tend to focus on their physical recovery but don’t pay attention to their mental recovery (Coimbra et al., 2021). Most of the current research for mindfulness’ effect on physical fatigue has been in individuals with a disease or illness. While these aren’t specifically applied to athletes, it is relevant to look at the physical effects that mindfulness can have on the body. There is a space in the current literature that can be filled with a study that specifically targets the effects of mindfulness and meditation on physical fatigue in athletes. Mindfulness can help decision making. Business people are starting to learn of the great effects that mindfulness can have on their business. It has also been spreading to other industries such as law practices, medical staff and many more. Top executives
and CEOs such as Steve Jobs, Ray Dalio and Philipp Hildebrand preach mindfulness within their company and use it themselves. This association has been shown through many studies as well. The researchers believe this is done through changes in brain activity. When an individual engages in short term mindfulness training, it activates the medial prefrontal cortex and the anterior cingulate cortex. Both of these parts of the brain are involved in decision making (Liu et al., 2018). Mindfulness is a powerful tool that can affect the way an individual performs.

**Conclusion**

Mindfulness can affect an individual’s cognitive functioning. This is done through increasing awareness of the situation and themselves. It also helps the individual achieve a better memory, not only within the brain but physically as well. Motor memory can be increased through mindfulness. Mindfulness can help individuals be less prone to fatigue. It helps their mental fatigue by calming them down. It can reduce burnout in people, so they don’t feel neglect toward their specialty. It can help with decision making. People are more likely to make a smarter decision when they practice mindfulness. The effects are widespread. Businesses, athletic departments, and schools need to implement mindfulness into their practices so their people can execute their work to the highest potential and have the best experience possible.

**Conclusion**

Mindfulness is a powerful tool that often gets overlooked. The positive effects are endless. It can help with emotional regulation. People have noticed they are happier when they are mindful. It helps them develop a sense of emotional intelligence. They feel reduced anxiety and depressive symptoms. People feel they are better equipped to deal with stress. Mindfulness also can impact our ease with entering the flow state. Mindfulness helps us build the tools in our
minds to achieve this state easier. This is because the flow state and mindfulness have a lot in common. Lastly, mindfulness allows us to have increased cognitive functioning. We are able to have a greater sense of awareness. Like flow, mindfulness is very integrated with awareness which allows us to make a clear connection between these two. It helps us have a better memory, both in our minds and in our bodies. We are less prone to fatigue, and our bodies and minds can withstand more strain without being exhausted. We are able to make better decisions and problem solve faster than without mindfulness. Individuals often face a lot of stress, and mindfulness helps these individuals make better decisions under pressure. All of these mechanisms increase our performance. As stated above, mindfulness is a powerful tool and as a society we need to reap the benefits of it more than we do currently. It can help in almost every aspect of our life including in the classroom, workplace, and in athletics.

People in power positions in these operations can easily implement mindfulness into their enterprise. Schools can implement some of the practices mentioned earlier into their curriculum. It could be a mandatory activity that students participate in during their homeroom class in K-8 grades and in physical education class in high school and college. They could also assign it as homework and have the students hand in a reflection journal about their experiences once a week. There are also many ways to implement mindfulness and mediation into the workplace. Offices could have a designated mindfulness and meditation space that employees can use throughout the day when needed. The people in charge should encourage employees to use these spaces and take breaks during the day. This can be applied to remote work as well. Companies could buy a meditation pillow for their employees who work from home. This is an easy way to include remote workers in the mindfulness and mediation journey of the company. They can also offer classes and workshops for their employees about mindfulness and mediation. They could
bring in speakers to present on the benefits and ways to practice mindfulness that is custom tailored to their space and situation. Lastly, athletic departments could implement similar versions of mindfulness interventions to help their athletes. They could hold workshops by bringing in sports psychologists to talk about how mindfulness would be able to benefit them. This could be through guided meditations in person before a training session, and they could offer yoga as a physical recovery on their off days or after a training session. They could also teach them breathing techniques to use before competition to prepare them for the game. All of these are examples that can be used in order to be more mindful, and what these leaders will see is increased performance.

Further research should be done in this field in order to fully understand the mechanisms in which mindfulness affects individuals performance. For the academic space, people should research how mindfulness of the family affects children’s academic performance. This should be explored since if there is a philosophy that is taught in school but not at home, it may not be as effective. For the workplace, people should research how mindfulness affects different levels within a bigger organization. This could be useful because there may be different mindfulness techniques that are more effective for associates versus people in the C-suite. For athletics this should be done through looking at how different mindfulness techniques could help different sports. For example, looking into if there are different techniques that benefit team sports more than individual sports and vice versa. While there has been a lot of new research on mindfulness in the past 60 years, there is lots of room for improvement so that as a society we can reap all the benefits of these practices.
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