

AN ABSTRACT OF THE THESIS OF

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This research is an investigation focused on creativity in the workplace and how to effectively bolster it amongst employees. Creativity has been linked to higher job satisfaction, lower retention rates, and higher job performance. Therefore the purpose of this study is to consider the abstracts of creativity and how they affect employees while also looking at the different tools used to measure it. Areas discussed that impact creativity include leadership, motivation, personality, climate/culture, and mindfulness. By understanding the different antecedents that impact motivations, managers can more readily manipulate those antecedents to better create an environment where creativity can thrive. These considerations will benefit organizations by increasing their bottom line and make sure they stay on the cutting edge of their industry.

CREATIVITY IN ORGANIZATIOINS AND HOW TO ELICIT IT AMONGST  
EMPLOYEES

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## Chapter 1

### INTRODUCTION

Creativity could be considered one of the most crucial facets of helping any organization not only succeed but also adapt and survive. One of these reasons is that employee creativity can help organizations gain competitive advantages through innovation and ensure the long-term survival and success of the organization. If an organization is to prosper, they need their employees to be actively involved in their work and to generate novel and suitable products, processes, and approaches (Shalley & Gilson, 2004).

It is becoming abundantly clear how important creativity can be within organizations. Successful companies are those that consistently create new knowledge, disseminate it widely throughout the organization, and rapidly include it in new products. These qualities define a “knowledge creating” company, whose business consists exclusively of continuous originality (Nonaka & Takeuchi, 1995). Original ideas help keep the competitive advantage. Gregor (2007) stated that in the face of the current domestic and international financial markets, along with increasingly focused competition due to the ever increasing globalization, many of the most effective businesses are implementing an original business model founded mainly on using individual creativity to enable organizational innovation.

This statement was made prior to the 2008 recession and indeed the companies who were able to adapt and innovate creative solutions were the ones that came out of that recession less scathed. In addition, even organizations in relatively stable and

predictable environments that do not require change for immediate survival can benefit from creative ideas to improve quality, productivity, safety, or employee satisfaction (Eisenberger et al., 1990).

Enhanced creativity in employees and organizations not only helps companies succeed and grow but it also can be more profitable and create a better environment for employees. But in some cases, lack of creativity can lead to undesirable outcomes.

In the case of The United States Department of Defense (DoD), they rely heavily on creativity to maintain our nation's defense. The DoD is an example of an organization that acknowledges the importance of leveraging the creativity of workforce members in order to transform its culture and business practices. The DoD's ability to fulfil its mission of averting enemy terrorization depends in large part on the extent to which it can develop new capabilities. The DoD has acknowledged the importance of change within the military and supporting organizations and is one of biggest advocate for it stating that "creativity and innovation have been identified by the Office of Secretary of Defense (OSD) as ranking among the most effective means for facilitating the changes necessary for maintaining a competitive advantage" (DiLiello & Houghton, 2008). Our nations defense sees a huge reason why creativity is important in organizations and in the next segment I will explain further.

### **Importance of Creativity**

A study that was conducted by Basadur (1991) found that there were two categories of positive outcomes that organizations should expect if they successfully nurture creativity. They fall under people outcomes and economic outcomes. The people outcomes include: Higher customer satisfaction and improved strategic thinking



throughout the company, higher level of thinking skills that show an association with adaptability, greater ownership of goal congruency, novel leadership skills for managers, better and more rational decision making, stronger cooperation amongst teams, congruent goals across departments, and increases in job enrichment, commitment, involvement, trust, motivation, and job satisfaction.

The economic outcomes include: Increased quality and quantity of services and products coupled with lower costs, new and improved services and products, less absenteeism and turnover, a clearer understanding of the vision and goals of the organization, project completion times become faster, and more successful and appropriate organizational designs.

In theme with Basadur's research, Shalleys (2000) found that there was a relationship between creativity requirements and the employees' intention to leave. Participants that worked in a creative environment were less likely to leave and had higher job satisfaction. However, research has yet to prove if there is a direct positive correlation between creativity (innovation) and employee retention. Stradinger (2015) set up a study to find out if there was indeed a positive correlation between creativity and employee retention. Their hypothesis concluded that: As employee creativity increases, the likelihood they remain with the organization increases.

The sample was a list of 190 employees from a large Midwestern metal manufacturing company. The experiment took place between March 2012 and September 2014. During that time employees were removed from the list due to leaving the company voluntarily and involuntarily. So, the total sample size was trimmed down to 99 participants. To measure creativity, the authors used data from the organization. In order

to generate data, they set up a program to incentivize the generation and implementation of ideas or innovation. The program is called the Issues of New Ideas Program (INI Program) and is supposed to incentivize employees to submit creative ideas and implement them to receive a quarterly bonus. The number of ideas submitted would then be correlated to how long after the 365 day sampling period that employees continued to work at the company.

The results showed that the total number of new ideas implemented strongly affects employee retention. Employees that do participate in creativity initiatives within their organization are less likely to quit. The impact of higher retention rates would inevitably decrease turnover costs, training costs, keep company knowledge within the company, and increase organizational innovation. Using such creativity initiative programs would help with the bottom line and provide a healthy workplace for employees to succeed in the long run.

Creative Employees have also been linked to increased job performance. Research by Jalali & Heidari (2016) conducted a study on whether there was a positive correlation between creativity and job performance using primary school teachers in Ramhormoz City. They hypothesized that there would be a significant relationship between creativity and job performance between the teachers there.

The method they used to conduct this research had the participants first take the Randsyp Creativity Inventory which was designed by Randsyp in 1976. This Inventory has been confirmed to have a reliability of .86, .98, .98, .93, .92, and .83, respectively. Then they had the participants take the Patterson job performance questionnaire designed and developed by Patterson (1970) with an estimated reliability coefficient equal to .84.

They then used the Pearson correlation coefficient and multivariate regression to analyze the results.

The results showed that there was a significant and positive relationship between creativity and job performance. They found that creative individuals feel a duty and inner desire to exceed expectations which would then translate to higher job performance. Also employees who displayed creative tendencies came up with better ideas, were able to problem solve, and had better thoughts and notions that in turn showed higher job performance.

Previous research has also shown that there could be a positive correlation between creativity and employee engagement. Cutting the turnover rate and increasing employee retention has huge benefits to companies. Higher retention rates mean lower costs for employers, higher employee satisfaction, and allow the organization to become leaner. Proving that creativity has a direct positive correlation with employee retention has major implications for any organization.

### **Defining Creativity**

I have shown that there are clear and obvious reasons why creativity is an important part of organizations. This includes making sure companies/employees are surviving and thriving to keeping the national defense of our country on the forefront of innovation. Now that we understand the importance of creativity, we need to define it.

Woodman et al. (1993) stated that organizational creativity can be interpreted as the creation of a valuable, useful new product, service idea, procedure or process by individuals working together in a complex system. DiLiello and Jeffrey (2008) concluded

that the value of creativity in organizations may relate to an ability to harvest novel yet appropriate ideas in order to increase organizational efficiencies, solve complex problems, and improve overall effectiveness.

Amabile (1998) believes that creativity is comprised of three determinants. They are a person's expertise, motivation, and creative thinking skills.

The first determinant is expertise which is essentially a person's knowledge, whether it is technical, procedural, or intellectual. Basically, expertise is the culmination of everything that a person knows in their given field. For example, an Organizational Psychologist is tasked with determining why group A is more productive than group B. His expertise is the knowledge and technical abilities in the field of psychology and business. The expertise can manifest via practical education, formal education, or interaction and discussing with other professionals. Interestingly enough Nobel laureate, psychologist, and economist Herb Simon refers to expertise as a "network of possible wanderings" or an intellectual space that a person can use to explore and solve problems. The bigger the space the better.

The second determinant is creative thinking skills. This is how imaginative and flexible people approach problems and the ability to use existing ideas to create new approaches. Personality is one of the major factors in what can determine a person's ability to be a creative thinker. We will touch more on personality later, but if individuals are comfortable disagreeing with others or are inclined to try out solutions that disrupt the status quo, then they are more likely to have better creative thinking skills. Creative thinking skills can be even more enhanced if you use knowledge (expertise) or expertise from other fields. An example could be if the organizational psychologist refers to a

neuro psychologist on what parts of the brain are activated in the group that is more productive. This could lead to more insights in finding a solution.

Another factor that plays a role in creative thinking skills is the work style of the individual. A person who perseveres through difficult problems may eventually come to a breakthrough. However, one's ability to set a difficult task aside, do something else, then return to it with fresh eyes also leads to creative breakthroughs. This process is known as the principle of incubation. However, the way an individual cultivates the process of incubation can determine how creative the breakthrough may be. An interesting experiment conducted by Shin (2015) wanted to look and determine if the different ways that people incubate will make a difference in the creativity of ideas. He collected a group of college students and asked them to write a business proposal on what to do with an empty lot that was located at their university. The groups were randomly assigned. The first group was asked to start the task immediately and propose business ideas. The second group was assigned to procrastinate (incubate) and put off the task to play computer games such as Solitaire, Minesweeper, or FreeCell and then come up with a business proposal. Independent raters evaluated the final proposals and the results showed that the participants who had time to incubate their ideas produced much more novel ideas compared to their non incubating counterparts that proposed more conventional ideas. In fact the business proposals from the individuals that were able to incubate their ideas were 28 percent more creative. This study shows that incubation does affect creativity and done strategically can vastly increase it.

The last determinant of creativity is motivation. I will also touch more on motivation later in this article in the form of using rewards as motivation, but for the time

being we will discuss intrinsic motivation which was found to increase creativity far more than its counterpart extrinsic motivation. Intrinsic motivation can most easily be classified as the inner passion to solve an issue at hand. This would encompass a person's internal desire to do something. For example, the organizational psychologist might be intrinsically motivated to find out why one group is more productive than the other because of their intense interest to know why and how people work. Intrinsic motivation is more about the enjoyment and challenge of their work.

Sternberg and Lubart (1996) partially agree with Amabile on what determinants make up creativity because they do agree that knowledge, thinking styles, motivation, and personality are part of the resources that makes up creativity, but they have added two more resources to give it a more complete picture. They are intelligence and environment.

The first resource we will touch on is intelligence. In order for creativity to come into fruition, one must have the ability to redefine a problem and to look insightfully on that problem, e.g. intelligence. Huge insights can be found by looking at an old problem through a new lens. There are three key skills that people can intelligently use to redefine a problem. The first is called selective encoding which is used to help recognize what information in the problem is the most useful for redefining the problem. The second is selective combination. This skill is the ability to put the pieces of a problem together that interlocks but is not obvious how. The last is selective comparison, which is the process of being able to recognize old information and see how it can be relevant in solving the new problem (Sternberg, 1985).

The other additional resource of creativity is environment, which will also be touched on later. Individuals will be most creative if they are put into an environment where creativity is accepted and actively rewarded. It should also be noted that not all “creative” environments are equal. When one environment might foster creativity in one person, it might not in another. That could be key for managers in knowing what type of environment their employees creativity will thrive.

However, creativity is an abstract concept and many authors have defined it in many different ways. For the benefit of this article we will define creativity as the ability to create novel and innovative ideas by individuals in an organization.

We now know why creativity is important and what some of the better ways that creativity can be defined. Therefore the main goal of this article is to review the literature and antecedents of creativity and the different ways to measure it. I will also be looking at different ways that leaders can foster creativity and some actionable items that will help them generate ideas and inspire creativity. In particular this article will focus on creativity in a business setting and how these creative ideas might be structured, populated, and managed in a way that that help bolster the development of new ideas and encourage the sharing of procedures, practices, and products throughout the organization. The antecedents we will be looking at are leadership, motivation, personality, climate/culture, and mindfulness.

## Chapter 2

### ANTECEDENTS AND MEASUREMENTS

#### Leadership

It is no surprise that leadership plays a role in how creative an organization can be. Leaders make all the decision to allocate resources and ultimately decide what the culture of the company will be. There has been research that shows what type of leaders are the best in fostering creativity in employees and certain things that leaders can do to make sure they get the most creativity out of an organization.

Most people have experienced many different types of leaders, whether it's the completely hands-off leader or the micro manager that needs to control every aspect of the job. Research shows that the style of leadership can help in the creative process. The one style shown to yield the highest results was the supportive leadership style. Supportive leadership style is also known in the literature as transformational leadership. This type of leaderships consists of articulating an inspirational vision, providing intellectual stimulation and challenge, charismatic role modelling, and coaching and mentoring (Bass & Avolio, 1994; Vera & Crossan, 2004). A supportive leadership style has been shown to boost employee creativity as opposed to leaders who were more controlling (Kanter, 1988). A study conducted by Madjar et al. (2002) demonstrated that support from supervisors contributed to employees' positive moods and creativity, and that these moods effectively explained the support-creativity relations. These studies show that a leader who is supportive and works on building a relationship with their employees helps boost creativity amongst individuals.



Some authors argue that the leadership style should be determinant on what stage of the creatively process individuals are on. A study that shows this was conducted by Caniels et al. (2014) and suggests that during idea generation, the leader has the role of an informal facilitator who does not have a formal hierarchical position, and has an equal voice compared to other team members. In contrast, during idea implementation, hierarchy is imperative for success as there needs to be a coordinator who takes decisions and bears final responsibility. Hence, some phases call for a supportive, non-regulating leadership style (idea generation and promotion), while other stages call for a rather strict regime that is combined with effective people management skills (idea implementation).

Leadership styles do play a role in creativity and even though most of the research suggests that a supportive leadership style is the best practice to cultivate creativity, new evidence is suggesting that different types of leaderships are more effective depending on what phase the organization is in with the creative process.

Leaders and managers can all develop a different style of leadership, but what are some tangible methods managers can use to enhance creativity? Amabile (1998) is one of the rock stars when it comes to researching creativity in the workplace and through her countless research six categories kept emerging on what managers can do to enhance employee creativity.

The first method is Challenge. This involves the process of managers having the ability to match employees up with the right assignments. The right match to a position or task can involve something that plays to an employees' expertise and skill. This in turn can ignite their creative abilities and intrinsic motivation. The perfect match also requires that the task allows for some stretch, meaning it is not too difficult or easy. They don't

want their employee to feel bored or overwhelmed. Unfortunately making the perfect match for employees rarely occurs. One of the main reasons why, is that a good match requires that the manager knows a great deal of details about all of their employees and also the different available assignments. This information is often difficult and time consuming to find. The result of this usually means that employees are not matched with their ideal assignment. Managers that take the time to successfully match employees with the correct assignments effectively enhance creativity.

The second method is Freedom. In another word, this means granting employee's autonomy to enhance creativity. This doesn't mean managers shouldn't help guide employees along with the process but should let them figure out their own way to the end. A great metaphor for this is to let your employees decide how to climb the mountain, but not necessarily choose which mountain. Giving employees autonomy to figure out their own process enhances creativity because it allows them a certain amount of freedom inherently increasing intrinsic motivation. It also allows them to approach the problem using their expertise which is a known determinant to creativity. There are two common ways in which leaders mismanage freedom. First, they tend to not clearly define goals or change them frequently. Even when an employee has autonomy of the process, if they don't know where they are going, then it is pointless. The second is simply that managers refuse to grant employees autonomy.

The last method is Resources. There are two resources that affect creativity the most. They are money and time. Deciding how much money and time go into certain projects can either enhance or destroy creativity. Consider money. Employees need resources to complete projects and resources cost money. Managers need to know how

much money the company can afford to go to certain assignments and allocate appropriately. This ensures employees get the necessary resources required to complete the project. When employees don't have the resources needed to complete a project, what tends to happen is they channel their creativity into finding the needed resources instead of completing the project.

Time can also be used to enhance creativity or inhibit it. A way that time can enhance creativity is when employees are on a time crunch to meet a deadline and they feel the work they are doing is important. This makes them want to rise to the challenge inherently increasing intrinsic motivation. However, this process used in the wrong way will instead kill creativity. Too many times in the attempt to increase productivity, managers will create fake deadlines or ones that are impossible to complete. Instead of helping, this causes mistrust and burnout. It should also be noted that creativity does often take time. Managers need to make sure they allow time for exploration and schedule time for incubation periods. A Gallup study showed that executive leaders often schedule time for creativity in their calendar because they felt that it was part of their job. On the other hand, 35% of lower level employees said that they're only given time to be creative a few times a year, or less often. This could be due in part to the need to justify their time with discernable results. Even with employees who strongly agree that their job expects them to be creative only 52% were given the time to do so every day.

The fourth method is Work-Group Features. This refers to a manager's ability to build teams that come up with creative ideas. The design of a team is very important in affecting creativity. The best people used to form creative ideas is a group that mutually supports one another and comes from different perspectives and backgrounds. When

teams have people with different intellectual foundations, different expertise and creative thinking styles along with different viewpoints on approaches to work, the ideas often combine in very novel and useful ways. In order to do this you need to choose members who are excited with the team goals, display a willingness to help teammates even when difficulties or setbacks occur, and must respect one another and their unique perspective and knowledge that they bring to the table.

Creating these types of teams once again requires managers to have a deep understanding of who their employees are. They need to be aware of how well people work together, their collaboration process, what motivates them, and their unique problem-solving style. It also goes to show that if managers want to stifle creativity in teams, then they should make it homogenous. This can be a very tempting concept since often times these teams appear to reach solutions more quickly and with less friction. They often report high morale also, but the research shows that these types of teams do very little to enhance creative thinking or expertise.

The fifth method is Supervisory Encouragement. One very easy way for managers to foster creativity is to give employees praise for creative efforts and this doesn't just mean the successful ones. In order for most employees to sustain passion for their ideas and work, they need to feel that it is important to the organization or a group of people. This also enhances intrinsic motivation. Managers that are part of a successful creative organization recognize the creative work that is done by a group or individual even before the impact of the effort is known.

On the other side of the coin, managers can just as easy kill creativity by not acknowledging that the creative effort was made. Many managers do not look at new

ideas with an open mind and either criticize it or bury it under layers and layers of evaluation and take weeks to respond. Many times they look for reasons not to use a new idea instead of reasons to explore it further. This can have severe consequences for creativity in organizations such as creating a culture where employees only focus on the external rewards and punishments that mitigate intrinsic motivation. Also, it creates a culture of fear which is also detrimental to intrinsic motivation.

Last but not least, managers can increase creativity by acting as role models and exhibiting behaviors and attitudes that they know nurture and encourage creativity. This could be such behaviors as encouraging communication and collaboration within the team or persevering through difficult situations.

The sixth method is Organizational Support. Manager encouragement can certainly enhance creativity, but it doesn't hold a candle to when an organization supports it. This is why leaders in organizations are so important because they need to put in place certain procedures and systems that make it very clear those creative efforts are a top priority. One of the ways to show that creativity is a top priority is by giving out rewards. This can be tricky if not done correctly because some of the research on this topic shows that rewards can be a double-edged sword when it comes to creativity.

As with motivation, there are two types, intrinsic rewards and extrinsic rewards. Intrinsic rewards are the self-satisfaction that one gets from completing a task because that person derives pleasure from it and wants to have mastery. Whereas external reward is based on certain external stimuli such as financial compensation, admiration from peers, or trophies and acknowledgement. Many studies show that people have more original ideas when they are motivated by intrinsic rewards rather than extrinsic rewards

(Anderson & Gasteiger, 2008). External rewards can create performance stress, as the attention is directed to achieving the goal (because of the reward) and not to the process of creating itself (Freund, Hennecke & Riediger, 2010). Therefore, in some cases external rewards can actually hamper the creative process by causing stress and not allowing for the process of internal rewards to create more novel ideas.

On the other hand, external rewards can have a positive impact on employee creativity because it shows that the organization takes an interest in creativity and the act of producing rewards shows the employees that. Oldham (2003) suggests if individuals are to be encouraged to share novel and potentially useful ideas with the organization, rewards should be offered that convey the message that all ideas are valued and that the organization is not interested in evaluating or controlling creativity. For example, it may be that offering relatively small rewards, or offering rewards well after the submission of the idea, decreases their salience but demonstrates the organization's interest in creativity. Another possibility might be to offer nonfinancial rewards (such as plaques and improved parking conditions) instead of financial rewards. Again, employees may perceive such rewards as less controlling but supportive of idea sharing.

This research goes to show that rewards do help play a role in creativity. Internal rewards also help to bolster the creative thought process. Employees who are more motivated by internal rewards tend to experience not only better creative ideas, but more of them. External rewards can derail the creative process if the reward is seen as a way to control or that it's so overwhelming that it might cause stress. For external awards to be effective, they need to be relatively small and appear as not trying to control the employee. If done correctly these awards can show an organization's commitment to

creativity and help employees be more willing to share their creative ideas with the organization.

Another very important strategy organizational leaders can use to enhance creativity is to make sure that all departments are sharing information and collaborating. Making sure this is happening increases three of the main components that make up creativity, which are expertise, creative thinking and motivation. The act of exchanging new ideas and data by collaborating will undoubtedly increase knowledge and expertise. The same concept can be applied to creative thinking by exposing individuals to the different approaches to problem solving. Ultimately this will also increase employee's enjoyment at work, hence bolstering their intrinsic motivation.

Organizational leaders also need to keep on top of office politics and not let any political problems fester. A few political concepts that can damage creativity are gossip, infighting, and politicking because it takes employees attention away from their job. As the research has shown, intrinsic motivation increases when the people around an individual are filled with excitement and purpose for their jobs. So, when employees are fighting or exhibit cliquish behaviors this completely undermines intrinsic motivation because political problems make employees threatened by other people's agenda. Office politics also undermines expertise because it can get in the way of the flow of information and knowledge.

### **Motivation**

Motivation goes hand and hand with rewards because the different kinds of rewards can stimulate the different types of motivation. Even if this is the case, we have

learned that motivation is a determinant of creativity and it must be present for creativity to be present.

Amabile (1996) has done much research on the correlation between creativity and motivation as discussed in early articles, but she also found that employees who lack motivation also have an increased chance of exhibiting other harmful tendencies such as avoiding the workplace, putting little effort into their jobs, leaving the organization, and producing low quality of work.

Motivation has become an issue that managers need to assess as more and more research exposes the importance of it. One of the harder parts about managing motivation is how unstable it can be. Here are few examples of organizational changes that impact how employees feel about their motivation within an organization: Organizational restructuring or downsizing, performance evaluations and how they are conducted, the nature of the work itself, the way in which work is organized, the nature of organizations themselves, and economic and political trends

As these examples change, it could significantly impact the motivation of employees that are working within an organization. Now that we understand some examples how organizations can change motivation let's discuss motivation itself and how it affects creativity.

First, we have intrinsic motivation where people are motivated through self-expression, satisfaction of curiosity, interests, enjoyment, and personal challenge in the work. The second is extrinsic motivation which is when people are motivated by external factors such as to obtain some goal that is apart from the work itself, such as money.



Even though both forms of motivation have shown to enhance creativity, intrinsic is by far the most influential. The reason for this is that when external motivation comes into play it sometimes has the effect of focusing the attention toward the extrinsic motive and away from the task itself. This can be helpful in completing tasks but undermines the creativity of how that task was completed. Since the task will only be looked at as a means to an end, the attention to the task will be narrowed to only solutions that will attain the extrinsic incentive. (Kruglanski, Stein, & Ritter, 1977). However, people who are intrinsically motivated will explore different avenues to find the most interesting connections to a solution.

## **Personality**

As discussed, when explaining the different measures of creativity, personality was a proven factor in what influences creativity. The best way to measure personality is using the Big 5 personality index. On the Big 5 personality index, openness to experience was shown to be one of the highest personality traits correlated to creativeness.

“Open” individuals tend to seek out new and varied experiences. Alternatively, more “closed” individuals tend to be more conventional, conservative, and uncomfortable with complexities. People who are high in openness have greater access to a variety of feelings, perspectives, ideas, and may be more adaptable to changing circumstances. These individuals tend to be able to come up with new ideas that challenge the status quo. Those who are low in openness are more traditional and demonstrate more of a like for ideas that are familiar and conventional, rather than novel (McCrae, 1987).

Research by Oldham (2003) suggests that individuals who score high in openness value conditions in the workplace that tend to support creative idea generation (that is, complex jobs and supportive supervision) and respond to these conditions by exhibiting relatively high levels of creativity. In contrast, those who score lower in openness tend to devalue these conditions and respond less positively to them.

There has also been research on the individuals who are proactive and how that trait can affect creativity. Theoretically, proactive individuals are more likely to display initiatives to change procedures in conducting jobs and organizational environment and thus tend to be creative (Seibert, Kramer, & Cant, 2001). Another study conducted by Seibert et al. (2001) found that proactive personality was positively associated with an individual's innovation behaviors, such as developing new ideas and showing innovation in one's job.

Proactive individuals stimulate change because they focus on doing things rather than sitting back and waiting. Even though the incubation period is an important part of the creative process, proactive people enact the ideas that were generated during that period. Proactive people initiate changes, take action, and persevere until meaningful change occurs in the achievement of their goals. In contrast, passive people just adapt to their undesirable circumstances (Crant, 2000).

This research shows that personality does indeed influence creativity, especially the Big 5 trait personality of "open to experiences" and proactive personalities. The implications for this can be huge when organizations have a hiring need for an employee that they need in a creative capacity. The Big 5 personality test should give them a fairly good indication on who would be creative. It also should be noted that extroversion was

also linked to creativity, but many articles suggested it was because more extroverted individuals were more likely to express creative ideas than their introverted counterparts, so there is no direct evidence that extroverts are more creative than introverts. This brings me to my next topic, willingness to share ideas within an organization and what the climate and culture looks like that is conducive to that.

### **Climate/Culture**

As proposed earlier, no matter how creative an individual is, the ability to express one's idea is almost, if not more important, than developing creativity itself. If an organization is not open and willing to hear people's ideas or does not have a method for those ideas to come into fruition, then there is really no point in fostering creativity within an employee. There are many ways that organizations can improve willingness to share and we will go through some proven methods.

Psychological safety refers to a shared belief that an organization is a safe environment for taking interpersonal risks without needing to fear harmful consequences (Edmondson, 1999). When individuals consider the possibility of making their ideas public, they are essentially considering taking risk and putting their ideas forward for possible evaluation (Albrecht & Hall, 1991). In fact according to a Gallup study only 18% of employees strongly agree that they can take risks at work that could lead to new solutions, products and services. Also only 1 in 5 U.S workers strongly agree that their opinions count at work and only half of workers who are expected to be creative say they're allowed to take risks.

The act of employees putting themselves out there and sharing their ideas can be a terrifying concept to some. Organizations that mock or dismiss ideas can place a dramatic effect on whether or not an employee will put themselves out there and share an idea. That is why it is so important to create a climate in where employees feel psychologically safe to express their ideas in an open and non – judgmental environment. Morrison and Phelps (1999) suggest that an organizational climate that is considered safe and encourages risk-taking is important in motivating individuals to take initiative. Employees are less likely to take initiative if they feel like their ideas will be judged or put under critical evaluation by others. If they feel that expressing themselves will be a threat to their self-image, then they have less willingness to share ideas within their organization. An example of this would be a study conducted by Amabile (1979) where they looked at the effects of critical evaluation of the creativity of artwork that was produced by students. Results showed that individuals who expected their work to be critically evaluated by expert judges submitted less creative artwork than individuals in no-evaluation conditions.

### **Mindfulness**

Mindfulness seems to be an up and coming topic lately, especially the discussion of all the positive things that comes with it and creativity is no exception. An article written by Kudesia (2014) explores the concept of mindfulness being a factor in enhancing creativity in the workplace.

First and foremost, we need to discuss what mindfulness is. To Buddhist monk's mindfulness is comprised of remembering, focusing, and monitoring. In fact, they have a saying to emphasize the importance of remembering their intention of enlightenment,

focusing on their actions in the present moment, and monitoring this activity in a particular way to ensure their actions are consistent with their intentions.

Mindfulness is a tool that is supposed to help people become aware of transgressions and help to re-engage their intention. Those who are high in mindfulness can monitor and adjust their behavior in real time. Mindfulness is great at making people self-aware and getting them out of autopilot and into a more present state. You can say it is more of a self-regulatory process.

To define it in more operational terms, it is categorized into three components that coincide very closely with its original meaning. Those three components are discursive thought, meta-awareness, and attention regulation. (Kudesia and Nyima, 2014)

The first component we will discuss is discursive thought. This is essentially the mental chatter that you have in your brain and that chatter can skew what is happening in the present moment. So, to improve mindfulness one must relinquish discursive thinking, so we can see things as they are and not how we imagine them. A study conducted by Schooler, Ohlsson, and Brooks (1993) found that subjects who verbalized their problem-solving process performed worse on questions that involved creativity. However, for questions that required no creativity the results did not change.

The second component of mindfulness is meta-awareness. This would involve a high level of detached self-observation. For example, it would be the difference of becoming angry, to noticing that you are just having angry thoughts and being more aware of the thoughts and why those thoughts are occurring. This can drastically help in self-regulation. Working memory is a main component of meta-awareness and helps to

override habitual behaviors by holding information in the mind. It has been shown that working memory enhances creativity and mindfulness training increases working memory. Working memory allows individuals to hold more than one idea in their mind at a time simultaneously allowing for the selection of more novel ideas. (Lee and Therriault, 2013)

The third component is attention regulation. This is the ability to maximize your attention towards goal directed behaviors. People who are mindful are better able to engage in complex tasks and more efficiently regulate attention leading to more creative outcomes (Brefczynski-Lewis et al. 2007).

### **Measuring Creativity**

Now that we have looked at some of the antecedents of creativity, the next step in fully understanding creativity is to examine methods of measuring creativity. Measuring creativity is important for a multitude of reasons. The first is that it could help with the hiring process. For example, potential employees could take a creativity assessment to determine their creative capabilities. Also, it will help organizations take an in depth look on whether or not they are lacking in creative power and need to institute some of the ideas proposed in this article. Lastly if these ideas were used, we would need to have a measured comparison on whether the ideas are actually bolstering creativity or not. Here are few metrics that have a high potential for measuring creativity:

#### ***Epstein Creativity Competencies Inventory of Individuals***

I chose the Epstein Creativity Competencies Inventory of Individuals as my first creativity scale to discuss because it also helps in some degree to define creativity.

Epstein (2008) suggested that creative expression depends largely on being able to grasp one or more core competencies that comes from the Generativity Theory. These competencies are capturing, challenging, broadening, and surrounding. Epstein set out to create a scale to capture all of these competencies and also validate its inventory. In order to understand the results, we first must understand the competencies he was trying to capture and how they relate to creativity.

Capturing is the act of preserving new ideas as they occur. This can be as fundamental as carrying a notebook around and jotting down information in it when a new idea or inspiration occurs, so pretty much any form of capturing ideas as they come. For example one of the sample items in the inventory is: "I always keep a recording device by my bed at night."

Challenging involves someone who is able to manage stress and fear associated with failure successfully. Challenging also involves people who set open ended goals and take on difficult tasks. The theory is that if individuals put themselves in difficult situations that they might deem a challenge, such as completing a lofty goal, they will come up with more creative concepts to overcome that challenge. An example of a sample item for this competency would be: "When I set goals for myself, I make sure they are open ended."

Broadening would be the act of seeking out experiences, training, and knowledge outside of a person's current realm of knowledge. For example, through Leonardo Davinci's work on optics, specifically how light strikes a sphere, was the reason that he was able to paint such masterpieces as the "Mona Lisa" and "St. John the Baptist." Showing that knowledge outside your respected field can lead to creative ideas. So a

sample item for this competency would be: “I often read books from outside of my specialty.”

The last competency is surrounding. This would involve changing your physical and social environments regularly and seeking out unusual stimuli. This could be simple concepts such as having wacky objects on your work desk or rearranging furniture on a regular basis. To something a little time consuming such as travelling to different countries and immersing yourself in a different culture.

In light of the last example of surrounding Godart (2015) conducted a study to see whether creativity was affected by people who spent time abroad. He chose to focus on the fashion industry and used ratings from critics and fashion buyers to measure creativity of designers such as Vera Wang, Versace, Donna Karan, and Giorgio Armani. Then he scoured their biographies tracking the designer’s international experiences and correlating it with the creativity ratings. What the researcher found was the highest rating were from the designers that were living abroad at the time of their creation. However, there was a caveat to the findings. Creativity didn’t increase for the designers that were just living abroad, they had to have spent the time abroad working, showing being actively engaged in the work in culture was crucial. This study also shows that surroundings are a viable construct to creativity. A sample item for this competency is: “I redecorate or rearrange my work environment regularly.”

Now that we know all the competencies and how they relate to creativity, let’s jump into the structure of the Epstein Creativity Competencies Inventory for Individuals. The items on the test consists of examples of typical behaviors exhibited by the four competencies. Example items were given under the summary of each competency. There



are 28 items and they are evenly divided amongst the 4 competencies. The answers were recorded using a 5-point Likert Scale with disagree and agree as the extremes. Once the inventory was set up it was then analyzed to determine accuracy. The results concluded five things from the investigations. The inventory accurately measures relatively stable creativity competencies. Competency scores on the inventory predict how frequently people express creativity, as indicated by their own assessment, as well as by the assessments of supervisors and coworkers. The test does not discriminate against people by gender, race, or ethnic group. Creative competencies can be trained. Strengthening creativity competencies appears to lead to a measurable increase in creative expression in an organizational setting.

### ***Life Experience Inventory or LEI***

Biographical factors can be measured to determine creativity. Creativity could be measured with four constructs. The first area was if a person was self-striving or worked on self-improvement. These included qualities such as displaying curiosity, being devoted to an area that interests them, and enjoying and being of a competitive nature. The second construct was parental striving, this involved the need to do well in order to satisfy their parents or had parental emphasis on getting ahead. The third area was social participation and social experience. This encompassed certain attributes such as being part of groups and organizations and helping others with tasks. The fourth and last area is independence training. This area involved when participants were children if they were allowed to judge their own standards and accomplishments, also if they were allowed to pick their own friends (Michael & Colsen, 1979). Out of these four areas the authors developed an inventory called the Life Experience Inventory or LEI. It is a 100 item

inventory that measures the four constructs of creativity. It was used with a cross – validation study on engineers and their real life achievements and obtained a validity coefficient of .62.

### ***Creative Activities Check-List***

The Creative Activities Check-list was developed by Runco (1987). This checklist was essentially created to measure creativity in children grades 5 to 8, but I believe it could be adapted to incorporate an older audience. The premise behind the check-list is to have the participants indicate how frequently they have participated in six activities. Those activities comprised of crafts, arts, science, drama, music, and literature. Creativity is scored by simply adding up the number of times the subjects participated in these events in a given time frame, for example in the last year. Some of these activities can include playing music, acting in a play, writing stories or poems, or anything that might be deemed creative. For an older audience they could come up with the top three most creative things that they have done to date and these things would be rated based on the level of creativity. This check-list has been received an inter-rater reliability of .90 and would be a useful tool in measuring the creativity of an individual.

### ***Torrance Tests of Creative Thinking (TTCT)***

One of the most widely known tests used to measure creativity is the Torrance Tests of Creative Thinking (TTCT) that was developed in 1966 and revised in 1999 (Torrance, 1999). This test consists of a verbal section and a nonverbal section. Both verbal and written sections are then divided into two forms, A and B. The nonverbal tests measure for mental characteristics based on five mental characteristics. Those

characteristics consist of: Abstractness of Titles, Fluency, Originality, Resistance to Premature Closure, and Elaboration. The verbal portion of the test scores on Fluency, Originality and Elaboration. This test boasts an inter-rater reliability as high as .97. A test-retest reliability between .60 and .70. It also has a predictive validity of .7 and has shown to predict students who go on to achieve a reputation for creativity in the public domain.

### ***Big 5 Personality Index***

Another avenue in measuring creativity on an individual level is through the use of personality tests. A study conducted by King, Walker, and Boyles (1996) found that three personality traits taken from the Big 5 Personality Index positively correlated with creative ability and creative accomplishment. What they found was that openness to experience and extraversion had a positive correlation with creative ability. They also found that openness to experience had a relationship with higher levels of creative accomplishment. Participants high in agreeableness and conscientiousness had a negative relationship with creative accomplishments and creative ability. This shows us that testing for personality can indeed predict a degree of creativity and one of the effective ways to test personality is to use the five-factor model of creativity developed by McCrae & Costa, (1984). This is a 44-item version of the Big Five Inventory that looks at the personality traits of Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. This test is known to have high reliability and validity in predicting these five personality traits in individuals.

### Chapter 3

#### DISCUSSION

The purpose of this article was to communicate the importance of creativity for organizations, define what organizational psychologists know about creativity and its abstracts, explain effective ways to capture and measure creativity, and suggest practical methods and strategies that organizations can use to enhance, diffuse, and not stifle creativity.

The research showed that creativity in organizations is important for their long-term success and to remain competitive. Higher levels of creativity have also been shown to improve services and products, lower absenteeism and turnover, help create clearer visions and goals, and quicken the project completion times. The positive outcomes for employees showed an increase in job performance, retention rates, job enrichment, commitment, involvement, trust, motivation, and job satisfaction. It also showed a higher level of cooperation amongst teams and better and more rational decision making.

I chose to define creativity by using Woodman et al. (1993) version which is organizational creativity can be interpreted as the creation of a valuable, useful new product, service idea, procedure or process by individuals working together in a complex system. To make it useful, creativity must also harvest novel ideas, improve efficiencies, solve complex problems and improve effectiveness. The constructs used to comprise creativity consisted of a person's expertise (knowledge), creative thinking skills, motivation, intelligence, and environment.

Many ideas were discussed over which factors play a role in affecting creativity in the workplaces. The first of these factors was leadership and its different styles. I found

that the supportive leadership style did the best to increase employee creativity overall, but different styles were best used for what stage the ideas were in. Managers could also increase creativity by implementing six methods which consisted of Challenge, Freedom, Resources, Work-Group Features, Supervisory Encouragement, and Organizational Encouragement. Motivation was another factor. The research showed that intrinsic motivation was much better at enacting higher levels of creativity amongst employees. Extrinsic motivation can actually hurt creativity by undermining intrinsic motivation, but if implemented correctly it can increase motivation. The best option would be to use the combination of both intrinsic and proper extrinsic methods of motivation to increase creativity. Personality also played a factor in creativity. The types of individual personality traits that increased creativity amongst individuals are open to experiences, extraversion, and proactiveness. Agreeable people were shown to display fewer creative tendencies. An organization's climate or company culture is a major element that impacts creativity. A climate that is considered safe to express ideas and encourages risk motivates employees to be more creative. In fact, Ekyall (1996) found 10 dimensions that led to an organizational climate conducive to creativity. They were emotional involvement, freedom, idea time, trust and openness, dynamism, playfulness, lively debates, conflict, risk taking, and idea support. A surprising precursor to creativity in the workplace was mindfulness. The study conducted by Kudesia (2014) showed that mindfulness can enhance creativity through the process of disrupting discursive thought, increase meta awareness, which is the ability to have a high level of detached self-observation, and attention regulation.

I looked at five of the most popular scales that measured creativity. The first was the Epstein Creativity Competencies Inventory of Individuals. It looked at measuring the constructs of capturing, challenging, broadening, and surrounding. The analysis showed that it accurately measures these constructs. The second scale is Life Experience Inventory or LEI. This scale is used to measure biographical factors related to creativity. It is a 100-item inventory and obtained a validity coefficient of .62. The third scale is the Creative Activities Check-list developed by Runco (1987). It is supposed to indicate how frequently individuals participated in creative activities. This checklist has received an inter-rater reliability of .90. The fourth scale is the Torrance Tests of Creative Thinking. It is one of the most widely known tests used to measure creativity. It measures 5 mental characteristics associated with creativity and has an inter-rater reliability as high as .97. A test-retest reliability between .60 and .70. It also has a predictive validity of .70. The last scale is the Big 5 Personality Index. Three of the personality traits correlated with creativity. Positive relations were openness to experience and extraversion. Agreeableness had a negative relation with creativity.

This research is important because it shows organizations and leaders the importance of creativity and how much of an impact it can have on their company. It also gives them the tools to measure it and applicable ways to generate, enhance, and market creativity in their place of work.

### **Manager Recommendations**

Understanding the benefits of creativity and how it relates to positive results in the workplace is important to managers so that it helps them understand why they need to make a conscious effort to support creativity. For example, implementing creativity

programs, such as the one conducted by Stradinger (2016) not only increased creative ideas but also decreased turnover costs and training costs. This act can effectively improve the bottom line, which could potentially lead to funding other creative endeavors. It also led to happier, more committed employees, showing that the implementation of creative programs has numerous benefits to an organization.

Knowing the best tools and metrics to measure creativity also has many applicable implications. The first being, without a measurement tool there would be no way of knowing whether or not creativity programs were actually working. Metrics can also be used as a creative predictor of potential employees during the hiring process.

Amabile (1998) showed many actionable ways that managers can enhance creativity in the workplace. Managers need to take the time to successfully match employees with assignments that bring out their creativity. Also, they need to clearly define goals and not change them frequently. Micromanaging leaders also have shown to inhibit creativity, showing that leaders need to grant employees more autonomy. Managers also need to make sure that their employees have all the resources they need to complete tasks.

One of the easiest ways for managers to bolster creativity is by simply acknowledging the fact that a creative attempt was made and act as role models that embody behaviors and attitudes known to nurture creativity.

Organizations can enhance creativity more so than individual managers. Oldham (2003) found the best way for them to do this is to show that creativity is one of their top priorities. This can be done by rewarding creativity with rewards to convey that the idea

is valued. Organizations need to also mandate information sharing and collaborating as part of their culture.

Motivation is also an important tool used to impact creativity in the workplace. The takeaway from this should not be that extrinsic motivation does not help with creativity at all, as we discussed previously with using extrinsic rewards as a motivator, they can help enhance creativity if implemented correctly. In fact, using both intrinsic and extrinsic motivation in tandem is the best solution to enhancing creativity. Intrinsic motivation does impact creativity. However, researchers have found six environmental factors that can undermine both intrinsic motivation and creativity.

The first being evaluation which can undermine creativity if employees are expecting it. Another factor is surveillance or when employees feel like they are being watched as they work which has also show to elicit lower levels of creativity. The act of giving rewards that employees perceive to control them has also shown a detrimental effect on creativity. However, rewards implemented the correct way can increase creativity. When employees compete against one another it can undermine creativity. Also, employees who have restricted choice and do not have the capacity to choose how to conduct an activity can have a severe effect on creativity. Lastly the simple act of employees thinking about extrinsic motivators can lead to lower levels of creativity, unless implemented correctly.

Many Organizational changes will impact intrinsic motivation such as the threat of employee termination, increased levels of autonomy and challenges with the increasing presence of new technology. Here are some strategies for management practice.



Due to the complexity of human motivation, a successful manager must be educated about the types of motivation and their effects on performance and creativity. Even though intrinsic motivators are better at enhancing creativity, focusing solely on enhancing them without paying attention to extrinsic motivators will not create a highly creative workforce. Extrinsic motivation is not always helpful and can have negative effects. It is very hard to create extrinsic motivated systems that produce the desired behaviors that managers might want. In fact, nearly all of these systems are flawed, but if employees are also intrinsically motivated, the flaws in the extrinsic system should matter less. Managers also need not make the mistake that all extrinsic motivators are bad. In fact most jobs require them. Managers should never assume that employees are all motivated by the same things. Some people gravitate more towards intrinsic motivation, while others toward extrinsic motivation. Lastly I warn managers to not think of one type of motivation to be better for all types of performance. Extrinsic motivation is best used to help drive a routine task where intrinsic motivation is best used for tasks that need high levels of novelty.

An organizational culture/climate can be highly affected by managers and the correct climate can impact creativity in a major way. Ekvall (1996) found that there were 10 dimensions of an organization's climate that reflects the likelihood that creative behavior will be enabled.

1. Challenge, or how committed and emotionally involved employees are to their work.
2. Freedom, are employees able to decide how to do their job.

3. Idea time, this would be the amount of time employees are allowed to elaborate on ideas.
4. Trust and openness, do employees feel safe speaking their mind and voicing their opinions.
5. Dynamism, or the characteristic of life in the organization.
6. Playfulness, or how relaxed a workplace is.
7. Debates, which is to the degree in which employees engage in lively debates about issues.
8. Conflicts, this encompasses the degree people engage in interpersonal conflicts.
9. Risk taking, which is how employees respond to emerging opportunities and fear of failure.
10. Idea support, stating does the organization have the resources to support innovative ideas.

This shows that creating the right culture and environment for employees to foster creativity involves many different facets but can be attainable by understanding the principles that help create such an environment.

Mindfulness was also a predictor of enhancing creativity in an organization. Kudesia (2014) found that managers can improve mindfulness within their company by using the process of mindfulness training techniques such as meditation.

### ***How Organization's Stifle Creativity***

We know that there are numerous ways to enhance creativity inside an organization, but there are just as many ways that creative innovations can be killed. Usually innovations are initiated within an organization through limited experiments or

tested on certain sectors of an organization. Then if it is successful, it begins what organizational psychologists call diffusion, which is the process of how innovation moves throughout an organization. Unfortunately, this process is harder than it may seem and more often or not the idea is killed and never implemented.

Richard Walton (1975) was curious to why it was so hard for successfully created innovations to diffuse through companies. In order to find out why, he observed eight major companies that at the time were trying to diffuse new innovations throughout their organizations. A few of these companies were Shell, General Foods, Corning Inc., Alcan, and Volvo. Even though the initially pilot innovations for these companies were successful, only one of the eight was able to diffuse the process throughout the entire organization. Walton identified these factors of why seven of the companies were not able to implement their ideas companywide: Did not have support from upper management, attempted to spread certain techniques rather than goals that could be used for certain situations, the technology used in the pilot projects were significantly different than that of others within the organization, managers reward systems were based off traditional performance measures while ignoring the success of implementing the new initiative, fears that the initial project was implemented in a non-unionized environment and wouldn't translate to a unionized portion of the organization, and conflict between the pilot project and other bureaucratic occurrences in the organization such as pay, different policies, or staffing requirements.

These are all reasons why innovation may not spread throughout an organization but Rogers (1995) wanted to find out determinants that would increase the chances that innovation would be adopted company wide. They are as follows:

Relative advantage, new ideas are more easily received when they are perceived as better than the original system. Compatibility, when the new idea is more compatible with the systems already put into place such as values, beliefs, and needs of the people looking to adopt the idea then diffusion is easier. Complexity, if the innovation is too hard to understand or comprehend then it is less likely to be adopted. Trialability, if the new concept is given a limited trial run before implementing companywide, then the chances of diffusion greatly improved. Observability, when you can easily see the results of the new idea, diffusion is more likely to occur.

This shows that how you can market a new idea can greatly impact whether or not it will be adopted or not.

### **Manager Action Items**

A study conducted by Herring, Jones, and Bailey (2009) scoured the psychological literature on the best idea generating techniques. During their research they found 172 different methods to generate ideas and they condensed these ideas into 18 different methods that yielded some of the better results and provided the most utility. Managers can use these idea generation techniques right away to illicit creative ideas. Here are the 18 best methods:

***Role Playing:*** Role playing involves individuals acting out scenarios. The scenarios usually relate to what the individuals found out during the research step in the creative process. They simulate ideas based off what the research uncovered. This technique is a tool for both team-based ideation and communication to clients or users.

***Active Search:*** Active search is where an individual is looking for a solution. For example, they could be looking for a certain image of a car using the web. They could

also use books, magazines, newspapers, etc. to determine the population density of a layout of islands off the coast of Indonesia.

***Attribute List:*** This idea generation technique involves taking an existing system or product and taking it apart then recombining these parts to form a new product or system.

***Brainstorm:*** Brainstorming is the act of developing a lot of solutions to a problem with emphasis on creating a quantity of ideas. Any idea is welcome and unusual ideas are the goal to start thinking outside the box. None of these ideas are evaluated. This method can be implemented by either individuals or groups. Brainstorming was the very first idea generation technique that was created, so it is usually referred to as “the mother of all idea generation techniques.”

***Collaborate:*** Collaborate refers to the act of two or more people coming together to work towards a common goal.

***Concrete Stimuli:*** This refers to when people manipulate physical materials to gain a new perspective on a creative problem. This involves looking or feeling different textures or physically maneuvering objects such as running your hand along a brick wall.

***Critique:*** This idea generation technique, also known as feedback is the act of receiving input from others on current ideas or thoughts. This idea also implements the collaboration idea generation technique where you could get a colleague or friend to critique your idea. It can also be done on an individual level where you critique your own ideas. This technique is best used to find flaws with the current idea.

***Documenting:*** Refers to the writing down ideas. This can be done via electronically or handwritten. Usually it involves the act of taking notes, writing stories, or journaling.

***Expert Opinion:*** Expert opinion is the process of bringing in an expert to evaluate and identify protentional problems with ideas or products. Experts are usually brought in to help with idea generation when individuals are looking for an answer outside of their normal domain of expertise.

***Empathy/User Research:*** This requires individuals to observe other people in everyday situations to develop empathy for them. This may help the individual to get into someone else's head and see things from another perspective.

***Encompass:*** This technique is where a person would gather inspiration by immersing themselves in information that is relevant to their current project. A great example of this would be when actors take on the roles of the people they are trying to replicate in their movies.

***Forced Analogy:*** This involves comparing your current roadblock/problem with something that has little or nothing in common with it. This is done in order to gain a new perspective or insight and helps to generate new ideas of research.

***Incubation:*** Incubation is where you would take a step back from the problem and let your subconscious mind work on it. This usually comes about as an Ah hah moment when least expected.

***Passive Searching:*** This method is closely related to active search but differs in the way that the individual is not looking for anything in particular. The method is used to gain inspiration.

***Prototyping:*** Prototyping involves creating a tangible model of the idea or product. This can be done using any type of physical material such as paper or clay and is used to conceptualize an idea.

**Reflect:** This is where you would review previous work to see if you can draw ideas from past solutions or ideas.

**Socializing:** This method involves talking with others about topics that are completely unrelated to what you are currently working on. This can also be similar to incubation in the way that you are not actively trying to solve the current problem.

**Storyboards:** These are used to help showcase information in the research phase of the idea generation process. Usually pictures, quotes, or other relevant information is put onto a cork board or some type of surface to represent the relationship between the ideas that were generated during the research phase.

Another approach to help foster creativity is the six thinking hats. This was developed by Dr Edward de Bono. This approach is used in a group setting and helps to avoid confrontation and channel critical analysis. It is a great way to argue the pros and cons of a situation or problem, while also remaining objective. It starts with a chairperson facilitating the whole process. Each hat is a color and represents different things. For example, if you want to disagree with someone, you will say ‘wearing the black hat for a moment I don’t think that this idea will work.’ Then that person explains why. After, the facilitator may say to put on the yellow hat now. This forces the previous black hat person to take on the qualities of the yellow hat and now must say what good qualities were in the idea. This forces the person to look at the idea or problem from different perspectives. The hats go as such: Blue hat- Sky Overview, control of the process, agenda, next step, action plans, conclusions. Green hat – growth, new ideas, new slants, options, opportunities. Yellow hat – Sunshine positive, optimism, benefits. Black hat – Caution, legality, judgement, morality. Red hat – fire, warmth feelings, emotion,

intuition, hunches. White hat – neutral – (think of white paper) Information – What do we know? What do we need? What information do we want? (Brown & Kusiak, 2007).

There are many other Idea Generation Techniques that people can use, but these are the ones that companies were most familiar with and yielded some of the better results. Also, these are applicable ideas that business leaders can implement right away to come up with different and unique solutions.

### **Implications for Future Research**

This article talked about numerous antecedents of creativity, but one facet of creativity which is heavily lacking is the effectiveness of creativity training. Various tests have shown contradictory results for the effectiveness of frequently used techniques (Klijn and Tomic, 2010). More research can be conducted on how these techniques are measured and what are the best ways to train managers. This also opens the topic of how much creativity can be learned and how much it is an innate aspect inside all of us. This would determine whether it would be more viable to implement creativity training or to effectively hire for employees who are already more predisposed to creativity output.

Research can also be looked at to determine which antecedents other than the ones proposed in this article would affect creativity in employees. Some avenues to explore would be how competition inspires creativity or how different types of performance appraisals might. Many companies are now using 360 performance appraisals, and it would be interesting to see its effects on creativity. It could be that performance from multiple sources would increase mood, therefore increasing idea generation. It could also be seen that the use of performance appraisals could be seen by employees as controlling, therefore stifling creativity.



Another area of research that should be looked at is if creative employees help every type of industry or if there are certain industries that do not benefit from creativity. This article assumed that creative employees benefit every type of organization, but when it comes to the profession of an accountant, could a creative employee be a hinderance? A creative accountant could interrupt the efficiency of the system already put in place, because creativity has the propensity to negatively affect the efficiency of an already put in place process (Gilson et al., 2005). This doesn't even look at the possibility that more creativity in companies can lead to immoral outcomes. Little is known of the dark side of creativity and does require more investigation on the topic.

### **Conclusion and Limitations**

There is one major limitation that should be considered with this area of research. As mentioned earlier, creativity is a very abstract concept and very subjective. What one individual might deem as creative another might not. Therefore, it can be very difficult to measure. The validity of a lot of the measurement tools can be called into question. One of the reasons is that a lot of these measurement tools are only used in laboratory experiments or as questionnaire surveys which are also subjective and situational. Also if you measure creativity in terms of output only, it can overlook products that might not be deemed as creative (Smith *et al.*, 2000). Creativity can be compared to love. We know it's there and a part of life, but it is very difficult to define and even more difficult to measure, but the more we have of it the better life will be.

Even with the one major implication to the concept of creativity, I sought to explain why it is important to organizations and the methods and theories they can use to enhance it. To do so, I first explained the importance of creativity by researching articles

that found correlations between creativity and positive organizational behaviors and outcomes. I then looked at causes that impact creativity in organizations and the metrics used to measure creativity. Lastly, I showed applicable ways managers can use that information to make organizations more creative as a whole. It is my hope that this can benefit organizations to help in the fight to inspire a more creative workforce.

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