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Playing at Work: Creating a Physically Creative Training Center

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A Project
in Creative Studies
by
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Submitted in Partial Fulfillment
of the Requirements
for the Degree of
Master of Science

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Dates of Approval:

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Project Advisor

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Candidate
Abstract

This project explores the idea of fostering creativity in the physical work environment through the use of a training center. The training center would be a place where employees and management of an organization could learn about the Creative Problem Solving process using elements such as play, incubation, and an individual’s interaction with their physical surroundings. Once the physical requirements of what makes a creative environment are learned in the training center, the techniques could then be applied to the workplace in order to encourage a more productive and positive atmosphere. The research and different studies in this paper help to illustrate what makes a workplace creative, what the benefits of a creative workplace are, and how a training center could teach organizations how to implement a creative environment.
Acknowledgements

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Section One:
Introduction
Creativity and the Workplace

According to Carl J. Neumann (2007), “Although creative individuals are essential, the strong link with the environment indicates that creativity might be greatly enhanced by generating a culture that supports the creative process” (p. 203). Creativity is a business weapon, if a company wishes to survive and thrive their deep pockets will not be enough. They must be able to apply creativity to their workforce. The organizations that do this the best start with their leaders and then apply it to the rest of the company (Firestien, 1996). One unique way in which creativity in the workplace could be achieved is through a training center, where employees and those in managerial positions of an organization could go to learn about the Creative Problem Solving process. In turn, the workers could apply what they learn in the training centers to their work environment, thereby creating an atmosphere that fosters Innovation and creativity. In order to understand how these training centers would operate and what their role would be in teaching creativity for a physical work environment, it is important to first explore the importance of creativity and how it can lead to idea generation, and the different dimensions and components that make up the creative climate as it exists today.

Why creativity?

Some may question the necessity of learning about creativity in a day and age where people are increasingly reliant on technology to do their thinking for them. While it is true that for strictly informational purposes, computers can now outperform the brain, there is still no substitute for idea generation or imagination. These processes must be performed by the brain (Osborn, 1953). Others may believe that idea generation and imagination is unnecessary, either because they believe they do not possess these abilities or because they assume these abilities are only useful for certain occupations such as writing. However, idea generation and imagination is applicable for many areas in a person’s life, and the capacity for both is in everyone. As per Alex Osborn (1953), “An analysis of almost all the
psychological tests ever made points to the conclusion that creative talent is normally distributed - that all of us possess this talent to no lesser or greater degree” (p. 15).

Idea generating is also an important part of brainstorming, which in turn is an important part of the creative process. When brainstorming, the more ideas that are generated, the better, as this will help an individual to have a better chance of coming up with an idea that fits perfectly with their problems. “Creativity, like the art of selling, is a percentage game; if you try once and don’t succeed you will be less successful than your counterparts who are trying until they get a result (Green, 1999 p. 157).” Using creativity to find solutions for problem is a concept that could be useful to everyone despite their occupation or reliance upon computers and other technological devices for information, particularly in the atmosphere of an organization or workplace.

*The Creative Climate*

Understanding the creative climate is an important component of applying creativity in physical work environment. According to Teresa Amabile, there are three components to creativity: expertise, creative-thinking skills, and motivation (Amabile, 1998). Expertise is everything a person knows about a certain subject or skill. For example, a scientist would be hired to develop a drug because of her knowledge, technical abilities, and her talent of thinking scientifically. Creative thinking refers to how people approach the problem and their capacity to put existing ideas together in new combinations. In other words, the person would look to other sources than just that of his or her own knowledge to find more information to help solve the problem. These are the natural materials of a person’s thinking. The third component deals with motivation, which determines what people, will actually do (Amabile, 1998).

There are two different kinds of this motivation: extrinsic motivation, which depends on something external, such as a reward or bonus, and intrinsic motivation, the passion or interest an individual has that will determine what they will do. Both of these types of motivation require creative
thinking, particularly intrinsic, since it is generally linked to passion (Amabile, 1998). This is one element that can be used to help create a creative climate in a workplace, as an individual employee must share the goals of the organization and have something at stake in order to be motivated to make ideas successful (Green, 2009). Therefore, it is important that managers and supervisors keep this in mind when working with their employees.

Amabile developed an assessment called KEYS to help measure an organization’s creative environment that was based on many years of research conducted to help managers to enhance the organizations creativity. It measures 6 categories which demonstrate how management can affect the climate of the workplace. These categories include: challenge, freedom, resources, work-group features, supervisory encouragement, and organizational support. These categories affect our motivation and ultimately our creativity. Amabile stated of the KEYS assessment and her research:

“Even if you believe that your organization fosters creativity, take a hard look at creativity-killers. Some may be flourishing in a dark corner or even in the light. But rooting out creativity-killing behaviors isn’t enough. You have to make conscious effort to support creativity. The result can be a truly innovative company where creativity doesn’t just survive but actually thrives (Amabile, 1998, p. 82).”

Being Negative towards creativity can create an environment of fear, which undermines our intrinsic motivations, or our passion. This will cause employees to become less likely to experiment, explore and connect with their work on a personal level (Amabile, 1998). In the end, your employee’s will be miserable.

In the above quote, Amabile points out that though an organization may seem creative there could be “creativity-killers” lurking that could be a detriment to that creative environment, and as a result, the organization itself. One primary way creativity can be “killed” is through the rejection of
ideas. Rejection can be positive because it provides further evaluation of an idea and can help perfect it, however, other times the idea is as perfected as it can be but is still not accepted due to such declarations as ‘it won’t work’, ‘we have always done it this way’ or ‘it is creative, but not for us’ (Green, 1999). Again, negativity can affect a person’s intrinsic motivations, and make them less likely to come up with another idea in the future.

Another leader in research on the creative climate is Goran Ekvall, who also developed a measurement of an organization’s creative climate. The Climate for Creativity Questionnaire has ten factors to be measured, including freedom, challenge, idea support, trust/openness, liveliness, humor, debates, conflicts, risk-taking, and idea time (Firestien, 1996). Some of these factors are supportive of creativity (idea support, debates, risk-taking, and idea time), although there must be a good balance of these factors to support creativity and innovation (Firestien, 1996). “If the environment for creativity is important and improves results, then it follows that organization is identified as innovative (Firestien, 1996 p. 208).”

It is important for leaders of an organization and/or workplace to get involved in creativity and, furthermore, show an interest in it for the rest of the organization to want to be a part of it. In a study done in the mid 1990’s it was reported that the chances of an employee creating breakthrough product idea that meets the organizations marketplace objectives are a pitiful 1:100. This is because of leaders do not focus how to pursue and idea best, but instead how not to pursue it (Firestien, 1996). A good example of this is shown in Dr. Roger Firestien’s book: Leading on the Creative Edge: Gaining Competitive Advantage Through the Power of Creative Problem Solving. In his book, he discusses a company he trained on the Creative Problem Solving (CPS) process to help the organization become more creative and innovative. The CEO stayed in the seminar for the first five minutes and then left for the rest of the seminar. Dr. Firestien notes that many of the employees said that they had wished he
was there to observe the information that was presented (Firestien, 1996). By leaving, he sent several messages to his employees:

1. He was too busy to be in the training or to improve his skills.
2. He knows everything, and besides it is his employees that need to learn not him.
3. He does not need to be creative, but his people do.
4. While this training session is not worth his time, his employees must sit through the whole thing (Firestien, 1996).

Furthermore, as time goes on, it is likely that his employees will feel as though he was not at all interested in change and that the seminar was a waste of their time (Firestien, 1996). In order to have creative change it is; therefore, extremely important to train the leaders of an organization first so that the employees will feel these seminars are worth their time and that their organization is ready and willing for creative change.
Section Two:

Rationale for Project
“From the moment we are born we respond to the space around us” (Seeling, 2012 p. 87).

Keeping this idea in mind, I will be looking at the other side of the creative climate for this project; that is the role that physical environment plays in developing creativity and how it will benefit a workplace. The physical environment affects individuals of all ages. It has been shown that children who grow up in stimulating environments have brains with a more highly developed neocortex (Seeling, 2012). The physical environment also very important for adults, as when an individual enters a place or an environment, they know their role and what is expected of them (Seeling, 2012). In the case of a workplace or organization, if the company wants inventiveness and initiative from their employees, then it is imperative that their work environment reflects and embraces those qualities (Seeling, 2012).

The goal of this project was to create a training center where a company can take their employees to help come up with more creative ideas and to learn the CPS process. The reason I wanted to create a training center where companies can take their employees to learn about this process is because many corporations would be interested in and would benefit from a training session based on creativity. The great thing about the training center is that it will not only teach them about the CPS process, but will also immerse the organization’s employees in creativity with different activities as well as provide a physical environment that will help foster and bring out their creativity and problem solving skills to use in the workplace. I find the physical environment and its effect on the creative process to be fascinating, and therefore decided to make a place that was designed to be physically creative for employees. It seems as though many companies are starting to value creativity in their employees, so it seemed like the natural next step to surround their workers with a creative environment and help them tap into that creativity.
Section Three:

Review of Pertinent Literature
Incubation

“Incubation often results in ‘bright’ ideas, and perhaps that is why it is said to invite illumination (Osborn, 1953 p. 314).” A classic description of a creative process by Graham Wallas features four stages of thought one of which is incubation. Incubation provides a break from the active pursuit for a solution; it is often described as often times your ideas developing without your full awareness (Puccio, Mance & Murdock, 2011). Illumination is said to follow after incubating, as that is when the pivotal “aha” moment occurs and a solution is found. In other words, incubation is the notion that people have some of their best and most effective ideas when they are doing an activity completely unrelated to the task they are working on, such as while sleeping or when they are out for a jog. Incubation can be an invaluable asset to the creative process: “By forgetting, you stop focusing on unproductive solutions and clear a path for the best solution to emerge” (Puccio, Mance & Murdock, 2011 p.90). This further supports the fact that incubation can enhance creativity (Neumann, 2007). It can also help with evaluating a promising alternative in addition to generating ideas. Incubation can provide a greater understanding of an idea’s strengths and weaknesses (Puccio, Mance & Murdock, 2011). While many work situations do not promote or are unable to allocate time for incubation, it could be a good investment and a different way to inspire creativity in employees.

It is very difficult to measure creativity, however, several attempts have been made; some of which have been measurements of IQ while others have been of the brain. In terms of the brain, “measurement of brain activity showed that creativity correlates with two brain states: a quiescent, relaxed state, and much more active state corresponding to the elaboration stage” (Neumann, 2007, p. 202). The quiescent state is much like dreaming, indicating that concentration on its own is not enough to generate creative breakthroughs, but must be combined with lower activities such as relaxing your mind, or sleeping (Neumann, 2007). Highly creative people seem to be able to switch back and forth
between these two brains this is why periods of incubation or rest can enhance creativity (Neumann, 2007).

Further research into brain activity has shown that some kind of information processing keeps going on in the mind even when an individual is not aware of it. “Cognitive theorists believe the ideas, when deprived of conscious direction, follow simple laws of association. They combine more or less randomly, although seemingly irreverent associations between ideas may occur as a result of a prior connection... “ (Csikszentmihalyi, 1996 p. 216). In fact, dreaming is an extremely important part of incubation. “There are a number of accounts from scientists who were able to visualize in dreams the creative, original and unexpected solution to a challenge they tried hard to solve while being awake” (Chavez-Eakle, 2011 p. 313). Taking the time to “sleep on it” is a way of allowing information to soak in. Letting an idea soak in gives you a greater understanding of its strengths, weaknesses and possible implications (Puccio, Mance & Murdock, 2011). In another study, results showed that brain activity called cyclic alternating pattern (CAP) is found in Non-Rapid Eye Movement sleep during the night and can be related to creative activity. In other words, it helps promote divergent thinking, also known as brainstorming (Chavez-Eakle, 2011).

Play

A common expression is “if you enjoy what you do, you will never have to work a day in your life.” Unfortunately, it is often considered unprofessional to have humor and playfulness in the work environment, and this affects employees in a negative way (Berg, 2001). “When work isn’t fun, people do the minimum they need to survive until they can leave work and have fun outside of work” (Berg, 2001 p. 59). This also relates to Amablie’s work on the creative climate or psychological environment, as she notes that motivating your employees is the key to increased productivity (Amabile, 1998).

Play can provide a safe environment to help expand both personal and professional limitations. It makes experimentation acceptable and establishes that there is no need to have all of the answers, or
in other words, recognizes that no one is perfect (Berg, 2001). It can also allow people to go beyond their boundaries to learn new ways of unleashing skills. Furthermore, play can open up the communication in a group that is needed to surface shared visions (Berg, 2001). It can also help stimulate creative ideas that are needed to meet the challenges in a rapidly changing marketplace, and help to reduce stress and maintain the perspective necessary for successful decision making (Berg, 2001). The ability to form creative and collaborative customer relationships is one of the few remaining competitive advantages that is hard to replicate (Berg, 2001).

Many organizations are starting to see these benefits and use play on a regular basis. Three different organizations provide examples of these benefits. The first is Georgia State Health Agency, which finds that play is extremely important to reduce stress and maintain a perspective on whatever they are working on. They encourage their employees to have toys at their desk, and they developed a rule that the last person to a meeting must lead the meeting. This encourages employees to find different ways of making their co-workers late to meetings (Berg, 2001). The CEO of County Bank in Rolla, MO credits playful activities such as 30 minute games of charades to increased net income by 32 percent (Berg, 2001). Finally, one of the seven operating principles in the Financial Service Corporation in Atlanta is “have fun.” Having fun makes the negative of a job more bearable and in turn enhances both customer service as well as employee satisfaction (Berg, 2001).

The makers of Lego® have developed a program that is designed to engage an organization's workers in play to bring out creative thinking and innovation; it is called “Serious Play.” Most people view play as something frivolous and completely unrelated to work, however, adult play is very different from child’s play in that it is often competitive and with a specific goal in mind (“The science of,” n.d.). There are four purposes of play that are combined to create Lego® Serious Play: social bonding, emotional expression, cognitive development, and constructive competition (“The science of,” n.d.). Social bonding is particularly important in an organization because it brings a sense of partnership, and
cohesion that is an important part of any organization ("The science of," n.d.). Play also can use constructive competition which means that people are not striving just to win but also to enable us to strive to perform at our best ("The science of," n.d.). “The critical feature is that play for adults can be as much tied to the real challenges of life as it is for children. Play is uniquely suited to hone our competitive intelligence ("The science of," n.d.).”

**Teamwork**

Many great projects are often the results of teams and teamwork. A study of a team at IDEO brings the characteristics of what makes a successful team to light (Kelley, 2001). The first is that a team must be dedicated to achieving the end results. Second, the group studied had to face an almost impossible deadline which, in turn, gave them more incentive to work together to get it finished. Third, the group was playful and allowed fun time while they worked. Fourth, the team was extremely comprised of diverse individuals and the group was accepting of this diversity. Fifth, they worked in an open and eclectic space which is ideal for brainstorming and group work, as a result, they felt empowered to look to the outside world for inspiration and real life research (Kelley, 2001). This is a great example of how a team can work together even in a business that teamwork seems to be impossible (Kelley, 2001).

Creating a good team starts with a good mindset, they do not have to have the most exciting project to work on, it is up to the team and its leaders to create that energy (Kelley, 2001). By building enthusiasm into every work week an organization will eventually have a great team (Kelley, 2001). Another key factor to building a great team is to set tangible goals and allow employees to choose the team they get to work in. This will help them to work with something they are passionate about and the end results will be much better when they have a choice of where or what to work on (Kelley, 2001). Many companies are starting to ask employees to work in teams to complete a project or job, which is a great way to help bring out the creativity in the organization.
The Physical Environment

More recently it has become more evident that the attributes of a physical environment can act as a creative catalyst, this can reinforce Ekvall’s dimensions of playfulness, dynamism, and debate. Though there has been very little research on the physical creative climate, it can potentially support the design process, and support problem solving (Moultrie, Nilsson, Dissel, Haner, Janssen & Van der Lugt, 2007). Design firms like IDEO support visualization and inspiration in a creative environment. Pixar is a great example of this as well; each designer is encouraged to create a space that reflects their passions. They have an office that is a gingerbread house, a Lego® castle, and a tiki hut (Seeling, 2012). Everything in IDEO is easily movable, even their wires are put on carts to transport wherever they want them to go. Much like Pixar, they believe that a workers environment should reflect themselves (Kelley, 2001). “If you live and work in an environment that is stimulating, than your mind is open to fresh, new ideas. If, however, the environment is dull and confining, than your creativity is stifled” (Seeling, 2012, p. 90). Leaving a clean desk with no personal belongings has a sense of a sterile environment that inhibits imagination. What seems to invite creativity is personal and idiosyncracies and only flexibility in the environment can make this happen (Kristensen, 2004).

Many things can inspire workers, most of the time it is the cheapest and simplest materials that can be the most inspirational (Kelley, 2001). Many companies would consider junk and clutter to be a distraction or a liability, however at IDEO, they developed a “Tech Box” with all of that junk, things like scrap metal and extras of their products, and when someone needs a little inspiration they reach into the box and grab an object to spark new ideas (Kelley, 2001). Views of the outside world are also a great way of sparking creativity in an organization. Natural views are considered to be an important characteristic of an environment with high creative potential. Having a natural view can be an effective way for exposure while remaining inside (McCoy & Evans, 2002). It can also provide workers with a sense of freedom and helps to reduce cognitive fatigue (McCoy & Evans, 2002). “High levels of spatial...
and visual complexity enhance the creative potential of places. Offering both visual interest and opportunity of discovery, challenging settings may provide intellectual and cognitive stimulation consistent with values of the creative personality...” (McCoy & Evans, 2002, p.424).

Many of the research explored here consists of topics that are not regularly thought of in the business world on a day-to-day basis. For example, many business do not allow the time for play or incubation though as the research above suggests, it is very helpful for making a creative environment. The same goes for teamwork and the elements of the physical environment, without these it would be hard to have a fully creative environment. In the long run the organizations environment will make a difference on whether or not creativity is expressed through their people (Firestien, 1996). In other words if you are looking to support and encourage creativity in your organization, take a look at the environment they work in, what factors promote or demote creative thinking?
Section Three:
Methodology
In this section, I will be putting my research to use, in that I will be creating a training center that is physically creative as well as allows for creative activities. Alex Osborn lists a number of creative activities in his text *How To Become More Creative* and some of the activities are used in this center. The Training Center has another purpose as well, I designed it so that an organization can come in and train on the Creative Problem Solving process, while being in a creative environment. The CPS process is as important to the center as the environment is.

*The CPS Process*

The training center that I am creating is designed to train people in the Creative Problem solving process; therefore a basic knowledge of this process will be needed. I will briefly explain the process as used in the Thinking Skills model developed by Drs. Puccio, Murdock, and Mance. It has six different steps and requires that each step begins with gathering data to see where to proceed next (Puccio, Mance & Murdock, 2011). See Appendix A for a model of the Thinking Skills Model. The steps include: Exploring the Vision, Formulating Challenges, Exploring Ideas, Formulating Solutions, Exploring Acceptance, and finally, Formulating a Plan. There is both divergent and convergent thinking in each step which are both very important for brainstorming. In his text, *Applied Imagination*, Alex Osborn noted that there are four guidelines to divergent thinking.

1. Defer Judgment-Save judgment until later.
2. Strive for Quantity-The more options, the better the chances of finding the right one.
3. Welcome “Freewheeling”—It is easier to tame down an idea than to think up an idea.
4. Seek combination and improvement-Build on other ideas presented (Firestien, 1996).

The convergent thinking stage is the more judgmental part of the brainstorming process. In this stage one must think affirmatively, to look at the strengths and positives first. Be deliberate, make sure there is a plan to help make hard decisions and inform the rest of the group about them first. Don’t overlook
ideas that challenge current assumptions or even new and intriguing ideas. Finally, stay on course, don’t let these new and exciting ideas divert from solving the original problem (Firestien, 1996).

The group will be given ample time based on what they want to get out of a session to incubate as well as work in the rooms provided. The rooms designed for training and working are separate from the rooms designed for incubation and play so as not to confuse the guests. This then gives them a clear understanding where work and social gatherings are permitted (McCoy & Evans, 2002). The rooms should be easily accessible, so there are multiple access points to move between these two floors as well as the outside. Teamwork is important in any organization, and so it is an important focus in my training center, further, “teamwork is valued for achieving high levels of creativity” (McCoy, 2005, p. 168). The spaces that I have provided are large and every different section is easily accessible to help promote teamwork. Breaking the barriers of hierarchy will help teamwork blossom and foster (Kelley, 2001). The play and incubation rooms are a great way to do this by allowing all workers in the organization to be able interact in a more playful and informal environment.

The First Floor

The first floor features the work rooms. Figure 1 shows aerial view of this floor. This is where the group will be introduced to the CPS process. There are four rooms that are set up with tables, chairs, white boards and electronics where most of the training will take place. Figures 2 & 3 shows a close up of a workroom. There are windows on almost all of the walls so that the guests can look out into both the hallways and outside of the building. In a study conducted by McCoy and Evans, they found that environments that were perceived to have a low creative potential were rooms that lacked adequate amount of windows. They noted that the inability to look out a window may make the environment seem nonflexible and could lead to an individual thinking they have lost freedom and openness to experience (2002). There is also a walkway between some of the rooms featuring a garden walk way for
even more exposure to natural elements during the process. Figure 4 shows this walkway and some of the view outside. This way, they can go out and walk around in it quickly without interrupting the process for long periods of time. By having a natural environment inside, they can experience nature without going outside and disrupting the process. Next to each of the workrooms there is a computer room and a library, which can be used for research as well as incubating. Reading genres such as mystery can provide a good creative workout, especially if people read them as participants and try to help solve the mystery (Osborn, 1952). Short stories are also good for creativity because they leave so much to the imagination due to the length. To get the most out of a short story, Osborn suggests to read the first half and then making have that person create their own outline for the rest of the story (Osborn, 1952). IDEO’s buildings have the ability to customize their environment by making everything movable, while not everything here (such as the walls) are movable, the rooms take inspiration from IDEO’s buildings so that almost everything is moveable and guests are encouraged to move what they wish. The d.school in Stanford regularly runs workshops on creative problem solving, one of which had group members asking if they could move into a bigger space to accommodate the work they were about to do. The workshop leader handed them a screwdriver and told them to take down the walls (Seeling, 2011). “The spaces in which we live and work are the stages on which we play or live. As such, they have a huge impact on our thoughts and behavior” (Seeling, 2011 p. 88). Close ups of the Library and Computer room can be found in Appendix G.
Figure 1 An Aerial View of the First Floor.

Figure 2 A View of A Workroom.
Also, like IDEO, each of the work rooms features a “junk” box. This is similar to IDEO’s Tech Box developed by one of their workers Dennis Boyle. Boyle had started collecting random objects, when
lecturing at Stanford he would bring a box full of this junk to show his students. At that time he called it the “magic box”. He brought this idea over to his department at IDEO and is now used under the name of “Tech Box” quite often to spark inspiration (Kelley, 2001). Tom Kelley loves the Tech Box: “It’s a heck of a lot more valuable to our work and culture than the typical corporate art purchase... the Tech Box is our own private beach of imagination, a place to let the sand run through our toes and catch a few waves” (2001 p. 145). This is very similar to what is better known to creativity students as forced connections, or visual connections. Sometimes in the middle of divergent thinking, it is helpful to change the cerebral scenery, or to take a “tropical vacation.” Visual connection is a divergent thinking tool that helps an individual to relax, forget about the challenge one is facing, focus on an unrelated object for awhile, and return to the action with fresh ideas. The results are often quite novel and unusual (Miller, Vehar, Firestien, Thruber, Nielsen, 2011).”

Figure 5 An Aerial View of the Second Floor
The Second Floor

This is the floor where all the fun happens. Figure 5 above shows an aerial view of this. It includes little separation between the different activities featured so that guests feel welcome to play, if they choose to, in groups or separately is up to them, either way they will play together. This will help reinforce teamwork and really help to break down the barriers of hierarchy in a team. The only rooms that are completely closed off is the “rest” room, the music room and the Lego® room. The reason I chose to close of the “rest” room was to keep noise out, and for the music room to keep the sound in, but they can prop open the doors if others want to hear the music. The Lego® room I chose to enclose in case a small group wanted to meet together and use this tool to overcome an obstacle without fearing as though others are overhearing them. The music and Lego® rooms both have all windows for the same reason as on the first floor. There are all windows on the first floor, so that the people can see nature, and feel freer as they are working. Figures 6 & 7 show a close up of these rooms. The “rest” room does not have many windows so that the room can remain dark for sleeping purposes. I picked the different parts of this floor based on Alex Osborn’s How To Become More Creative and some other research as noted throughout this paper (e.g. Chavez-Eakle, and Ryan). In Osborn’s text, he writes about different activities that inspire the mind and bring forth creative thinking, and I decided that I would take a cue from him and put these activities in the center.
Beginning with the sections of the floor that involves physical activity. There is a section that provides the guests with exercise equipment; more specifically, treadmills and weight benches (see
Figure 8). While Osborn notes that indoor sports do very little in developing creativity, it is a great time to incubate and restore thinking (Osborn, 1952). I have also included a few pool tables in the middle of the floor. While it calls for significantly less creative thinking than billiards; billiards is just not a popular game to play anymore. Pool will relax our minds and give it time for incubation, much like exercising will (Osborn, 1952). Another topic addressed in this book is sedentary games, so I have created a section of the floor that has games such as cards, board games, puzzles, etc. Thomas Edison felt that puzzles were a creative pastime and so did Osborn, he thought that crossword puzzles were the most creative because one must work their minds backwards and forwards and by doing this, it tones the creative fiber (Osborn, 1952). These games are located in the toy boxes throughout the floor. This is the biggest section of the floor because people can come there and play the games. There are walls for aesthetic purposes but there are archways so that anyone can go in and out as they please. Figures 9 & 10 show this room.
The practice of fine arts can help nurture creativity and provide happiness (Osborn, 1952). This is why I built a room for making and playing music as well as drawing, painting and photography. Of
course, the music rooms are enclosed with sound proof walls and windows so as to keep the sound out, in case others do not want to listen to the music. Composing music is highly creative and so I have provided the room with guitars (a fairly popular instrument) and sheet music as well as recording devices so that they can show off their results. In the art section I also include paints, crayons, paper, canvas, and easel for whatever they want to create. Even if they just use the art supplies for interaction, they are still using their creativity (Ryan, 2011). There is an amateur painting on the wall and guests are encouraged to hang up their own work as well. Figure 11 shows the section of the floor dedicated to painting and drawing.

The next section is the “rest” room, which, is also enclosed so that guests can take a nap. Sleep is great for incubation and so I added it in for those who may feel that a cat nap will either help to clear their mind or help them come up with more ideas. Mendeleyev, the inventor of the Periodic Table of Elements, is said to have come up with the idea in a dream. In fact, throughout history there have been many reports that dreams are a source of creative inspiration (Chavez-Eakle, 2011). The rooms have
multiple beds with partitions separating each bed for privacy. There is a nightstand, a table lamp, and an iPod, all things that seem to be essential to sleep. I made the room a dark color to keep it dark enough for those to sleep; there are partitions between the beds as well so that people will not be disturbing each other. Again, this room is meant for a quick catnap and, therefore, lacks the luxury of a hotel room. Figure 12 shows a closer view of this room. There is also a kitchen that serves multiple purposes, one being for nourishment and the other being incubation. I included multiple areas to sit and reflect on their own or in a group; again no activity is confined to one area. Throughout the floors, there are many objects and plants for something to look at and possibly get ideas. Figures 13 & 14 show these rooms.
In the corner of the room there is a TV with chairs, this serves multiple purposes (Figure 15). The first is that people can relax by watching the news or an educational program, or they could play a
Many video games ask for both strategic and creative thinking and it will also allow time for incubation and set them up for that “aha” moment. Next to this section we have a Lego® Serious Play section. Lego® Serious Play has been used in many businesses to help creative thinking and so I thought it would be a great addition to the center, and who doesn’t love playing with Lego’s®? The guests are encouraged to play with the Lego's® any way they choose, but they can use them to help with any challenges they have as well. The smaller tables have the Legos in them and there is a table in the middle of the room that is large so that everyone can sit together and work on the Lego’s®. Refer to Figure 7 for the view of the Lego® room. The smaller tables are shaped like turtles, to hopefully encourage silliness, and make it a fun time for the whole group. Figure 16 shows the turtle table.
Ultimately, the “play” floor is designed to help bring the group together by getting rid of boundaries and allowing them to have fun together. It is an open space to promote teamwork and a sense of community. Almost everything there, much like on the first floor, can be moved around to help customize the environment much like how IDEO’s design firms are. There are windows everywhere to help allow the guests to experience nature without going outside. In addition to stairs and elevators I offer another option of getting from one room to the next, a slide is attached to the stairs as well; it allows for fun and gives a person a new perspective. Figure 17 shows the slide.
The outdoor gardens

The gardens are designed for people to be able to go outside instead of playing inside and also for something to see through the windows. There is sports equipment, although the equipment is not entirely encouraged for creative thinking, it is still a great time to incubate. Alex Osborn’s favorite outdoor activity was fishing and so in honor of him I have a pond where guests can go fishing (Osborn, 1952). There is a horse barn and trails for those adventurous enough to try that as well. During the winter there is an alternative option for those seeking to be around nature, they can of course brave the elements if they want, however, I have a green house to bring them nature without the cold and rain. Natural elements are important to creativity as discussed earlier and so accessibility to these elements is important during both incubation and the CPS process. Figures 18-21 show these outside activities.
Figure 18 The Horse Barn

Figure 19 Statue of Alex Osborn/ The Greenhouse
Figure 20 A Closer View of The Greenhouse

Figure 21 The Fishing Pond
Section Four:

Results
What I strived for in the beginning of this paper was to create an environment that helps stimulate the mind and open it up for creative thought. After much research I am proud of the building I have created and feel that allowing the guest ample time to incubate, and play have given them an opportunity to open up their creative mind while they learn the process of Creative Problem Solving. What I created gave the guests many opportunities at seeing things in new perspectives, this can help them incubate and open their eyes to ideas they have never thought of before. The physical environment of the office has five different components: spatial organization, architectonic details, views, resources, and ambient conditions (McCoy, 2005). I mainly focused on spatial organization, architectonic details, and views.

Spatial organization is generally the size and shape of a work environment. Ideally, it provides adequate space and easy access between teams and can help influence productivity by simplifying the work. Furthermore, spaces flexible enough for team members to reorganize can help identify leadership and leadership style (McCoy, 2005). I made different rooms easily accessible and there were multiple ways to get to and from each floor. The second floor had almost no separation between the different activities to help promote this teamwork.

Next, the architectonic detail is the fixed or stationary aesthetics of the place, materials intended to embellish an environment but not involving structural organization. This element can be overlooked; however, some case studies suggest that decorative styles, signs and artwork can encourage a team’s sense of identity and purpose (McCoy, 2005). Everything about this center is decorative and allows for personalization by having almost everything movable which, is another important factor in architectonic details as it allows for self-expression (McCoy, 2005).

Finally, views are observable features visible within or from the work area, including what can be seen near the work area and through the windows. Views can have a restorative value, also having
windows, views, and access to nature can communicate in a nonverbal way the value of the team to the organization (McCoy, 2005). The abundance of windows in my training center can show that I also made views important to my creative environment, I also feel like it gives the guest an essence of freedom from the work they are doing.

The purpose of this training center is to not only teach the guests the CPS process, but to also allow them time in a creative environment to help them incubate on the challenges that their organization faces. From the research that I found, I attempted to create an environment that is aesthetically creative, as well as choose activities that help foster creative thinking and incubating. I tried to have bright colors in the rooms as much as possible due to research that shows environments with cool colors had a significant negative correlation to creative potential (McCoy, Evans, 2002). I also tried to make it so that there were as many natural elements in the rooms, as rooms with natural materials had a positive correlation with creative potential, implying that it enhanced creative performance (McCoy, Evans, 2002). I also made sure there was ample space for collaboration both in the “play” rooms and the work rooms to help people interact (Kristensen, 2004). Some people like to be left alone during the incubation stage while others prefer to be in a group (Kristensen, 2004). This is why I made the “play” rooms an open space with a few exceptions so that if people felt that they wanted to be by themselves they could or they could do things in a group.

This space gives individuals a place where creativity is acceptable and more importantly, encouraged. Looking back at Amabile’s dimensions for the creative climate of: challenge, freedom, resources, work-group features, supervisory encouragement, and organizational support, most of which I strived to achieve with the physical environment instead of the psychological environment. Freedom resources and work group features were very prevalent in my center, and hopefully they will find creative problem solving challenging (in a good way). They also reinforce some of the dimensions
discussed in Ekvall’s Climate Questionnaire, including freedom, challenge, ideas support, humor, and idea time. Idea time is probably the most important factor in this center as I allow for incubation, which is essentially idea time. In the end, I hope that what they learn, and most importantly experienced in the center can be something they will keep in mind in their everyday lives and apply to their workplace.
Section Five:

Summary
Throughout my research for this project I found that there is very little information on the physical creative environment, which is something I did not realize when I first started. I am glad that I focused my training center on the physical environment because it further reinforces the importance of it and will hopefully spark someone else’s interest so it can be studied more in depth. I hope to simply bring awareness of the importance of the physical creative environment in the workplace. I thoroughly enjoyed creating this training center and am very glad that I researched what I did for this project. I am now very knowledgeable in play and creativity as well as incubation, which in turn will help me to create an atmosphere of creativity in any place I plan to work in.

Using the computer game *The Sims™* I was able to create this training center with ease. I decided to separate the “play” rooms from the work rooms so that the guests understood where they should be taking things more seriously and where they can just have fun. I personally find incubation to be an extremely important part of the creative process, and it is an important factor that I address in this project. I made sure there were as many activities as possible so that everyone could find something they liked to do during incubation time. I based a lot of the design of the training center off of research I found on IDEO, and Alex Osborn’s work. Of course, I used other research as well but found *The Art of Innovation* by David Kelley and *How To Become More Creative* by Alex Osborn the most inspiring when it came to designing my rooms.

The research that I found on play and incubation in the workplace was also extremely important to this project. They are the major factors for why I built what I did. I have briefly learned the importance of play in the creative process, but researching it a little more I found that it is really something that every work place should have. I was lucky enough to stumble upon Lego® Serious Play which is a program designed to bring play into the creative process in professional organizations. I watched a few videos on YouTube and just knew I had to include it in my center. I use Lego’s® in my
creative problem solving facilitations for a forced connection and find it very helpful there, so one can only imagine if they had more time to actually play with the Leg’s©. Again as noted earlier I know that there has been some criticism on the Serious Play program and really only used it for playing purposes. Incubation is something that many people already use and do not even realize it, my center points out what incubation is and brings awareness to this extremely important part of the process.

As the reader can see I just barely discuss the things like play, incubation, and all the other topics in my literature review. There is much more that needs to be studied in these areas to really understand them, but for the sake of time and my sanity I kept them brief but enough for everyone to understand their importance in this project and why I created what I did. Essentially the “play” rooms that I created are meant for incubation during the creative process as well as to open up their creative minds through play. I also did not cover the CPS process in depth, this is the process they are coming to the center to learn and while a brief overview was needed I felt there was really no need to go too in depth with it. In my introduction I introduce the creative psychological environment or the creative climate this is still a very important part of any environment I simply just chose to focus my efforts on the physical instead of the psychological environment. I focused my efforts in research on cue-rich environments and did not even look at environments that are devoid. In my research I also found that many creative environments are customizable and I did not look into environments that are not and how they can be creative as well. In the end, I really enjoyed what I focused my project on and I hope that one day it will be able to help an organization turn their workplace into a more creative environment physically.

What I learned from this project is that there is no one room that is considered the perfect example of a creative room. It is often linked to a person’s personal preference and is why companies such as IDEO make equipment movable so that people can work in areas that are best suited for their
individual employees to work in. I have also learned that by creating a fun environment in a workplace, the creativity will follow, so while having some physical elements in an environment are certainly important it is also very important that there atmosphere of fun through some of the activities mentioned earlier in this project. In other words, making a room that is physically creative and not allowing workers to have any fun will not make the organization that much more creative. The creative environment has both psychological and physical elements by using these elements together you can create a superior creative environment. While I focused my efforts on the physical environment, there still needs to be a focus on the psychological environment as well to have a true creative environment.
Section Six: References
References


Section Seven: Appendices
Appendix A

Here is a picture of the Creative Problem Solving Thinking Skill Model as shown in the text *Creative Leadership: Skills That Drive Change*. This is what the guests of the center will be taught to help them overcome challenges in the business world.
Appendix B

Bibliography for Further Reading:


Appendix C

This is a screen shot of the website page for Lego® Serious Play®; this shot describes the essence of the program. Taken from: http://www.seriousplay.com/11375/THE%20ESSENCE

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The underlying values of LEGO® SERIOUS PLAY® include the belief in the potential of people, and also the belief that everyone within an organization can contribute to the discussion, solutions, and outcomes.

GIVE YOUR BRAIN A HAND

When you as a leader or manager want to gather the total individual and team brain power to work on complex business issues such as developing strategy plans, resolving conflicts, forming and developing teams and working with turnaround and restructuring—then LEGO SERIOUS PLAY is the method of choice.

Consider how such gatherings take place—typically as meetings and workshops. Think about all those meetings you have participated in over the years. Just imagine how valuable it would be for the organization and the business if everyone left those meeting rooms feeling that:

- everyone’s insight, knowledge and ideas were brought fully to the table.
- other participant’s insight, knowledge and ideas were fully integrated as each person’s insights.
- the entire team had experienced new knowledge, developed clearer perceptions, and greater awareness, gained and delivered informed opinions.
- everyone is MORE confident about what happened in the meeting, that it REALLY will make a difference RIGHT NOW, and they had both the insight and the confidence to make it happen.
- every participant ALSO left those meetings feeling a stronger commitment to go about their work and take action in accordance with what was shared, because the meetings also created a social bond and increased the shared sense of responsibility.

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“Building is very impactful. It allows us to listen to the whole person/team. To hear people’s fears, intentions, and aspirations... LEGO SERIOUS PLAY provides a tool to have fierce (= passionate, unedited, powerful, intense, eager) conversations.”

Valeria Maltoni
Communications Director
Cerexa, Inc., USA
Appendix D

This is a screen shot of the Starter Kit for Lego® Serious Play® Taken from the website:
http://www.seriousplay.com/19609/2000414

2000414 Starter Kit

Description
The standard LEGO® SERIOUS PLAY® Starter Kit for each participant in a LEGO SERIOUS PLAY workshop according to the LEGO SERIOUS PLAY methodology. The Starter Kit provides the LEGO bricks needed for the basic skills building exercises required to start a LEGO SERIOUS PLAY session — building metaphors, creative story making and applying imagination.

Includes:
- Selection of standard LEGO bricks combined with a few DUPLO elements.
- Selection of special elements such as wheels, tires, windows, trees, minifigure parts, sticks, globes and small base plates
- Imaginopedia for Core Process

PRICE excl. VAT
38.99 USD
26.99 €
Appendix E

This is a screen shot that discusses briefly how Lego® Serious Play® works. Taken from http://www.seriousplay.com/11475/THE%20EXPERIENCE

LEGO SERIOUS PLAY uses LEGO bricks and elements and a unique method where people are empowered to "think through their fingers" - unleashing insight, inspiration and imagination. In a very direct way, you will be able to see what everyone knows inside the company – and what they don't know they know! Within a surprisingly short time, an organization can have a clear, shared direction with people who are confidently aligned and committed to a course of action.

IT'S PLAY WITH A PURPOSE

You will explore the relationships and connections between people and their world, to observe the dynamics both internal and external, to explore various hypothetical scenarios, and to gain awareness of the possibilities.

You will be building landscape models with LEGO bricks, giving them meaning through storytelling, and playing-out various possible scenarios, which deepens understanding, sharpens insight and socially "bonds" together the group who "plays" together. LEGO SERIOUS PLAY will guide you into free and honest exchange of opinion. The physical and tangible construction allows for you to have conversations to flow without the fear of treading on personal feelings. You will experience that the real issues are addressed and ultimately allows you to see things through the eyes of your colleagues – and have them see through yours.

LEGO SERIOUS PLAY invites all participants to take an active part in the process. The common language – the bricks – treats everyone as equals and allows all opinions and aspects to be heard. In a very direct way, you will be able to see what everyone knows inside the company – and what they don't know they know!
Appendix F

This is a picture of what IDEO’s Tech Box looks like. Taken from the book: *The Art of Innovation: Lessons from IDEO, America’s Leading Design Firm.*

(Kelley, 2001)
Appendix G

These are the extra pictures from the center I made; I did not have room for all of them in the text so for the readers benefit I have them here.

G1- A view inside the Library

G2- A view from the Computer Lab
G5- An Aerial View of the Gym

G6- Another View of the “Rest” Room