

Fostering Creativity in an Educational Environment

Meaghan A. Dee
Virginia Tech
203 Draper Road
Blacksburg, Virginia 24061
1-541-632-4426
meaghand@vt.edu

ABSTRACT

Many believe creativity is something you're born with, rather than a skill you can learn. But, being a professor of graphic design, I believe teachers can and should foster creative thinking, regardless of the subject matter. Every child is naturally imaginative, but as they grow up they're taught to conform. One way to encourage students to uncover their originality is to build an environment that is free of judgment. To be creative is to be abnormal, in that it requires thinking in unique ways. In order to be comfortable with artistic expression, students must feel free to make "mistakes" – they must even be encouraged to do so. We've all heard the mantra "fail faster." There's no way to know if an idea will be successful until you try it out, so the more you can explore, the better. But this might be easier said than done, as fear of failure can be paralyzing. Twyla Tharp, in *The Creative Habit*, combats her fears by writing them down and physically destroying them. For any creative person trying to get "unstuck," this sort of ritual can be a first step in getting moving on a project. Under this line of thinking, helping creativity flourish should be integrated into every graphic design course. I focus on creativity in my curriculum by implementing mini exercises, discussions, and by approaching each project with a unique methodology – so students have a chance to learn and make in diverse ways.

Keywords

Design Thinking, Creativity, Higher Education, Failure

1. INTRODUCTION

"To make great ideals a reality, we must act, experiment, fail, adapt, and learn on a daily basis" (citation from Scott Branson, *Forward*).

Being both a graphic designer and a design educator, I have personally struggled to produce work and have helped my students tap into their creativity. Throughout this paper, I discuss how to tap into natural abilities, overcome fears, find focus, establish a routine, and find inspiration. I present various methodologies that can be used for yourself or as tools for helping students or coworkers foster their own creativity.

2. FOSTERING CREATIVITY

Born Creative

judgment. It also means nurturing an atmosphere of encouragement and of pushing each individual to reach his or her full potential. This does *not* mean that people should be afraid to give negative critiques. In fact, constructive criticism is essential when getting any design to its best possible state.

To be creative is to be abnormal, in that it requires thinking in unique ways. In order to be comfortable with artistic expression, students must feel free to make “mistakes” – they must even be encouraged to do so. It can be incredibly uncomfortable to be different from those around you, from a social perspective. We are taught to try to fit in, and if we embrace our oddities, we are vulnerable to being exposed as weird. Yet, in order to excel as an artist or designer, you must be able to *think differently*. That Apple mantra always resonated with me, particularly in their 1997 commercial:

“Here’s to the crazy ones. The misfits. The rebels. The trouble-makers. The round pegs in the square holes. The ones who see things differently. They’re not fond of rules. And they have no respect for the status quo. You can quote them, disagree with them, glorify or vilify them. About the only thing you can’t do is ignore them. Because they change things. They push the human race forward. And while some may see them as the crazy ones, we see genius. Because the people who are crazy enough to change the world are the ones who do.” (Apple / Isaacson, 1997)

Whether it is a company, like Apple, or an individual’s creative mind, the ability to leap-frog or to see *that which is not already in existence* is an incredible talent. Conformity does not lend itself to innovation. Nor does the creative process work well with a fear of judgment or failure. Not every idea is a great one. Not every sketch is a work of art. But in order to get to the best, we must go through the process of creating, which often involves failure.

In Malcolm Gladwell’s book Outliers, the author describes the “10,000 hour rule”: where, in any field, in order to become an expert, one must complete around 10,000 hours of an activity (Gladwell, 2011). For instance, musicians do not start as distinguished maestros – they must practice. The Beatles didn’t start off as the Beatles. In fact, before they became one of the world’s most famous bands, they played over 1,200 shows in Germany. During this process, they amassed the performance time necessary to become great (Gladwell, 2011). This does not mean that every person starts with identical capabilities. However, it would have been a shame if the Beatles played once, deemed the music inadequate, and stopped forever.

For graphic design, I see practice and experimentation as having two key elements. First, designers must put in the time to become better designers – as is the case for every industry. Second, the nature of the design process involves failure. Designing is not a straight-lined diagram from idea to fruition. Rather, it should be a squiggly line, a large net of ideas that through testing and refinement are narrowed into a solution. I’ve found Damien Newman’s “The Design Process Simplified” chart to be an accurate portrayal of my view (Figure 1):

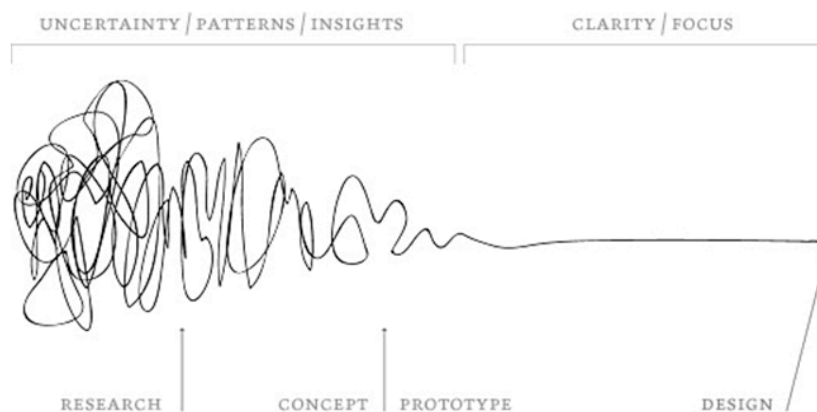


Figure 1. “The Design Process Simplified” (Newman, 2000)

Newman’s chart illustrates how, in the beginning / research phase of a project, designers explore and try many different options. As they move forward with their work, the most appropriate solution comes into focus and they begin wandering less. Near the end of a project, a designer begins refining a perfecting their work.

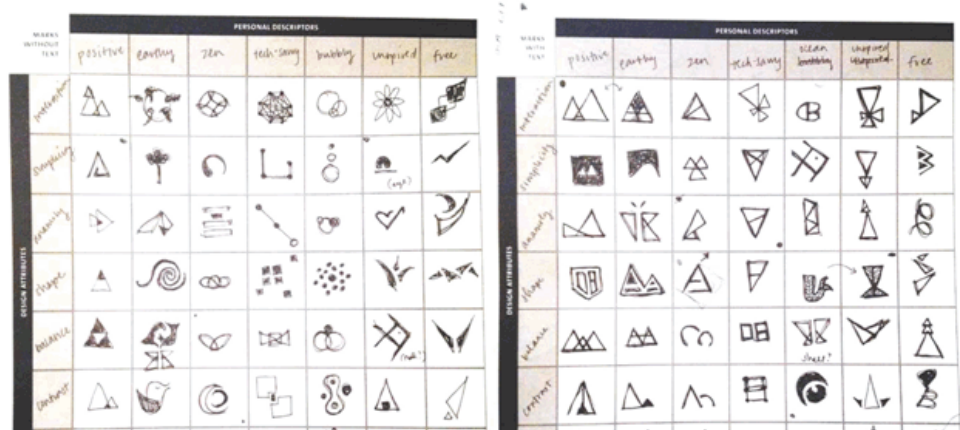
There’s no way to know if an idea will be successful until you try it out, so the more you can make and ideate, the better. Graphic design involves trial and error. So in a sense, these “failures” are really hypotheses: hats you try on until you find the right fit for the occasion. Design is an iterative activity; in order to design you must be all right with making mistakes.

In my Advanced Visual Communication Design class, I’ve used an iterative methodology based on what one of my colleagues, Dr. Troy Abel, used at Iowa State University. The students begin by creating a list of relevant adjectives for the brand. Then they generate a list of design principles (e.g. repetition, scale, balance, symmetry). They put these into a matrix (Figure 2) that is used to produce numerous sketches of icons. Once the students complete the matrix (or matrices), they do familial sketches based on their favorites. By the time the process is complete, dozens and dozens of ideas are rejected – simply because there can be only one solution.

3. OVERCOMING FEAR

Fear can be paralyzing. Twyla Tharp, in The Creative Habit, combats her fears (e.g. failure, inadequacy, ageing) by writing them down and physically destroying them, as a way for her to mentally overcome these obstacles (Tharp, 2003). For any creative person trying to get “unstuck,” this sort of ritual can be a first step in getting moving on a project. Although I don’t take Tharp’s advice literally, I do find benefit in identifying career-based fears: in doing so, I am able to face them. Although everyone’s individual concerns are different, *fear of failure* and *worry about being judged* are two of the most common that I’ve seen among graphic designers.

Creative Confidence, by Tom and David Kelley of IDEO, is an inspirational book for both those who are in artistic industries and those who are not. The underlying theme of the book is: creative thinking, regardless of your discipline, can make you a better employee and happier. The book provides many exercises to loosen up people’s imaginations and get out of their comfort zones (Kelley, 2013). In the “make a change” section of the book, they state: “Don’t be afraid to try and fail. The worst thing you can do is play it safe, stick with the familiarity of the status quo, and not try at all” (Kelley, 2013, p. 170). Most people won’t even go this far. So, simply by showing up and trying out ideas, you’re already ahead of the average person.



Whether it's a blank canvas, an empty screen with a blinking cursor, or a crisp white page in a sketchbook, starting a project can be daunting. For me, the scariest part of a project is often the unknown. Yet, I've realized that if I just begin, I can reach the finish line. This is easier said than done, in part because of the prevalence of distractions. So to get started, one must be able to find his or her focus.

Finding Focus

In order to be productive, you must be proactive about establishing your priorities. Many of our modern tools set us up for a "reactionary workflow" (Glei, 2013, p. 26). That means we respond to emails or the requests of others rather than completing tasks that we deem valuable. This often occurs because, in the words of graphic designer James Victore, it is "easier to do urgent things than important" (Glei, 2013, p. 162). I find a sense of accomplishment in having an empty inbox or a clean house. Additionally, these tasks tend to take less time than the important work. Most large-scale creative tasks, whether writing a novel or designing a poster, take many hours to complete, often days or weeks, so they do not yield instant gratification. Additionally, creative works have no guarantee of success. You might spend 20 hours designing a logo that a client hates. In order to be successful, you must work in spite of the chance of failure, and you must avoid distractions.

Checking email is a huge temptation. The psychologist B.F. Skinner invented the concept of "random reinforcement" (Glei, 2013, p. 91). Skinner ran studies on rats in which they would be given food every time they pulled a lever. But it turned out that if you *randomly* provided food, rather than every time they pulled the lever, the rats were much more excited. Email and other social networks are examples of random reinforcement (Glei, 2013, p. 91). For the most part, our emails and Facebook status updates are quite ordinary. But, every so often, we get thrilling news. Meaning that, we monitor these closely because we hope for that one exciting email or update. Psychologically speaking, email is incredibly difficult to avoid.

The McKinsey Global Institute conducted a study that showed 28% of the average employee's work week is spent checking email (Glei, 2013, p. 123). Although email offers the illusion of productivity, in reality, it usually results in quite the opposite. To accomplish the most in a day, set specific times to check your email. I find this to be quite a challenge because I have students and colleagues who want immediate feedback. But in order to be long-term productive, you have to work on your short-term restraint. Producing creative work is not about *waiting for inspiration*, but rather about finding routines that stimulate work.

4. ESTABLISHING A ROUTINE

Be proactive about what matters to you. To accomplish this, you must first define your priorities. I personally "chunk" out time in my calendar to accomplish creative tasks, just as I would schedule any other meeting. Once you set aside time for yourself, you must also preserve this time as you would with any other meeting, avoiding scheduling conflicting events. People are accustomed to respecting appointments, so treat your work time as you would any other important activity. In addition to establishing a window to work, you must also focus on your goals and not be distracted by smaller daily tasks that make you *feel* productive. These chores can keep you from focusing on your designated tasks. We all need to keep up with email, file taxes, and pay bills – but in reality, most things can wait, and if something is truly urgent, you'll likely get a phone call (Ferriss, 2009). If you do not schedule time to work on creative activities, other items in your life will likely take priority.

Do not wait for inspiration to strike. Instead, get to work. Not every session will be fruitful, but the more you exercise creative thinking, the easier it will come, as your brain gets accustomed to working in such a way – such as by making unique mental connections of seemingly unrelated items. Being in the industry of graphic design, one of the biggest challenges I encounter is the expectation of producing

stack of relevant books, and scrap paper to jot down thoughts. On the other hand, if I'm setting out to collage, I work best in a mess, surrounded by random scraps of paper and materials. For any task, I know I work best in a well-lit room, alone. This said, being a bit of a perfectionist, I find it easy to come up with excuses about how my environment isn't quite right. It's one thing to know what surroundings work best and another to use the imperfection as an excuse to not produce. Regardless of my physical environment or location, scheduling regular time to produce work strongly increases my productivity.

Creating daily (or weekly) rituals should help get you going. The book Daily Rituals is a lovely collection of the routines of authors, musicians, and artists (Currey, 2013). For me that book was both interesting and pushed me to think about my own habits. Some of those featured had rigid schedules, like that of Joan Miró:

At six o'clock he got up, washed and had coffee with a few slices of bread for breakfast; at seven he went into the studio and worked non-stop until twelve, when he stopped to do an hour of energetic exercise, like boxing or running; at one o'clock he sat down for a frugal but well-prepared lunch, which he finished off with a coffee and three cigarettes, neither more nor less; then he practiced his "Mediterranean yoga," a nap, but for just five minutes; at two he would receive a friend, deal with business matters or write letters; at three he returned to the studio, where he stayed until dinner time at eight o'clock; after dinner he would read for a while or listen to music (Currey, 2013, pp. 48-49).

Benjamin Franklin also had an ideal structure for his day (Figure 3). While Franklin admits to having rarely stuck to his routine, he said that when he did, he was immensely more productive. Others led more spontaneous lives, but for the most part, the artists had set times to generate work. The other element of Daily Rituals that stayed with me was considering the artist as a whole person. How you eat, sleep, drink, exercise, and socialize affects your work. To pretend that parts of one's self do not affect others is foolish. Yet, in America, we often look at ourselves in a compartmentalized manner. In addition to this holistic view of inspiration and overall health, we must strike balance in life.

Yet, being a design educator, my class schedule changes semester to semester. Sometimes I teach in the mornings, other times in the afternoons and evenings. Additionally, I need to be able to produce work consistently in the unstructured summer months. So it is difficult for me to have a consistent routine. I use a number of simple tools to help me keep track of my priorities. For starters, I use a calendar to schedule time to work on tasks — anything from writing a paper to designing a website. Some items need larger blocks of time than others, so I start by scheduling the more time-consuming bits. Stefan Sagmeister (cited in Gleib, 2013, p. 196) visualizes his time planning in relationship to the metaphor of a jar full of rocks. If you have a small pile of rocks, one of tiny stones, and one of sand, they will all fit in your glass jar, but only if you put the rocks in first. If you start with the sand, there won't be any room left for the larger pieces.

In addition to scheduling time for present-day tasks, I also keep an ongoing to-do list. To successfully manage tasks, my system must be simple and accessible from multiple locations. For years I used good, old-fashioned Post-it Notes that I updated at the end of each day. For starters, there's something immensely satisfying about scratching off a task, and it was also easy to keep up with. The downside to the Post-it method was that I couldn't access my list if I didn't physically carry it with me. So I moved to Stickies, a Post-it-like app on my computer. For the most part, Stickies was both simple and quick, and I could access it whenever I had my laptop. The digitized version also had the advantage of being able to include links, and I never had to re-scribe details or dates. Recently, I discovered Google Keep, a free Google App. It's basically a glorified notes/lists application, but it also allows you to set reminders, archive completed tasks, and access your lists from any computer. The point of all this is: find a method that works for you and revise it as you see fit. Just make sure you don't spend more time getting organized than producing work.

SCHEME.		
	Hours.	
MORNING.	5	Rise, wash, and address <i>Powerful Goodness!</i> Contrive day's business, and take the resolution of the day; prosecute the present study, and breakfast.
The <i>Question.</i> What good shall I do this day?	6	
	7	
	8	Work.
	9	
	10	
	11	
NOON.	12	Read, or look over my accounts, and dine.
	1	
AFTERNOON.	2	Work.
	3	
	4	
	5	
EVENING.	6	Put things in their places. Supper. Music or diversion, or conversation. Examination of the day.
The <i>Question.</i> What good have I done to-day?	7	
	8	
	9	
NIGHT.	10	Sleep.
	11	
	12	
	1	
	2	
	3	
	4	

Figure 3. Benjamin Franklin's ideal daily routine from his autobiography (Currey 2013).

Your Brain as It Relates to Creativity

Surgeon, Charles Limb, researches creativity and how it relates to the brain. He set out with the following concept:

Artistic creativity, it's magical, but it's not magic, meaning that it's a product of the brain. There's not too many brain-dead people creating art. And so with this notion that artistic creativity is in fact a neurologic product, I took this thesis that we could study it just like we study any other complex neurologic process (Limb 2010).

With this premise, Dr. Limb began a series of tests using MRIs to measure the brain activity of individuals, while they performed creative tasks, such as playing jazz, and contrasted that to the blood flow in the brain when they performed non-creative activities, such as playing a memorized piece of music. Based on his studies, he formed the hypothesis that "to be creative, you have to have this weird dissociation in your frontal lobe. One area turns on, and a big area shuts off, so that you're not inhibited, so that you're willing to make mistakes, so that you're not constantly shutting down all of these new generative impulses" (Limb 2010). In essence, spontaneous creative activities require that you do less self-monitoring and allow yourself to make mistakes in order to generate self-expression.

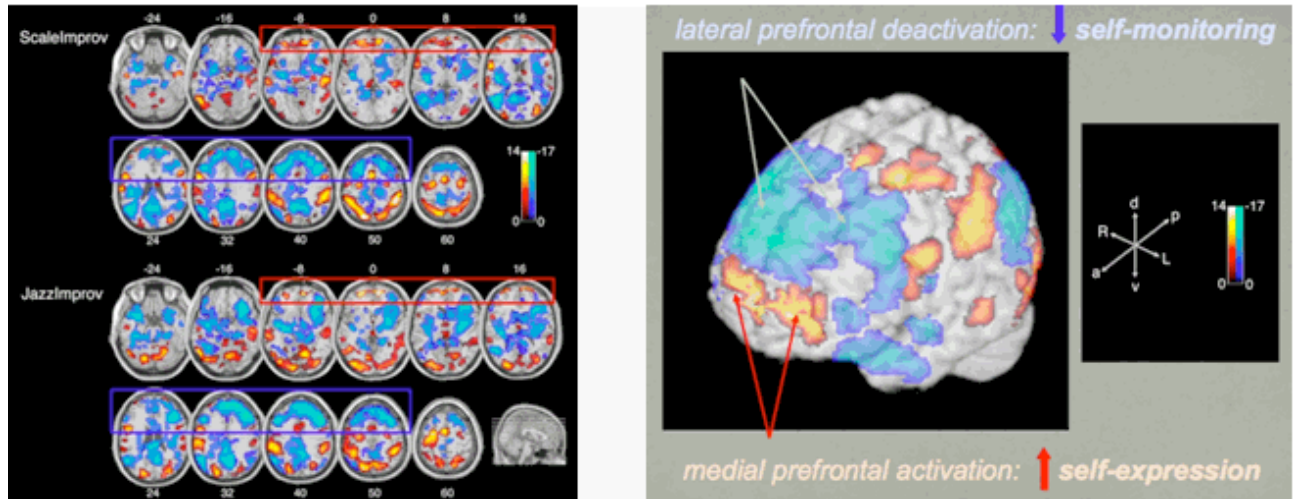


Figure 4. (Left) Contrast showing subtractions between what changes when you're improvising versus when you're doing something memorized. In red is an area that is active in the prefrontal cortex, the frontal lobe of the brain, and in blue is this area that was deactivated. This shows that the area called the medial prefrontal cortex that went way up in activity. Additionally, this portion called the lateral prefrontal cortex that went way down in activity. (Right) Close up diagram showing that the “self-monitoring” area of the brain went down in activity during creative activity, and the “self-expression” area of the brain went up (Limb 2010).

Finding Inspiration

One of the most influential courses in my graduate education was a design course I took with (now retired) Professor Rob Carter at Virginia Commonwealth University. The first day of class, Carter gave us a list of 50 people, places, and things. The idea was that each day, for 50 days, we would experiment with the corresponding list item. One day you would play with string. Another, you would be asked to interact with a stranger. Additionally, we often used our class time to travel to new places, such as Hollywood Cemetery and the Botanical Gardens. On these days, we’d be asked to bring our “tools” — for me it was usually a camera, a sketchbook, and some pencils. The structure of this class emphasized exploration. It encouraged me to find inspiration in ordinary objects, and it pushed me to get away from the computer and to go wandering into the world. A moment from one of these classes resonated with me: Carter came up to me and gestured out to the river. He talked about how he saw inspiration for compositions everywhere — that he could see the rocks on the water as words on a page. If you view the world as a source for design inspiration, it will leave you with endless possibilities. A project I’ve used in teaching, and I’ve seen others use similar methodologies, is to photograph either architectural or natural environments and then digitally translate them into grid structures for design compositions. In addition to looking to nature or manmade environments for visual references, changing your state of mind can also help foster creativity. By making yourself open to serendipitous opportunity, you are more likely to find inspiration.

Use everything in your life when you design. Take photos, sketch, write, read, reflect. In essence, gather information and be mindful about the world around you. Rob Carter’s diagram (Carter, 2006) on the Design Process (Figure 4) shows how he believes designing is a cyclical combination of realizing, defining, gathering, ideating, and synthesizing. All of these actions affect one another. For instance, once you have defined a design problem, you will be gathering information differently than you were before you took that step. Whenever I’m given a design task, I find myself focusing on items I wouldn’t normally notice. If I’m tasked with designing signage and a menu board for a restaurant, I suddenly find

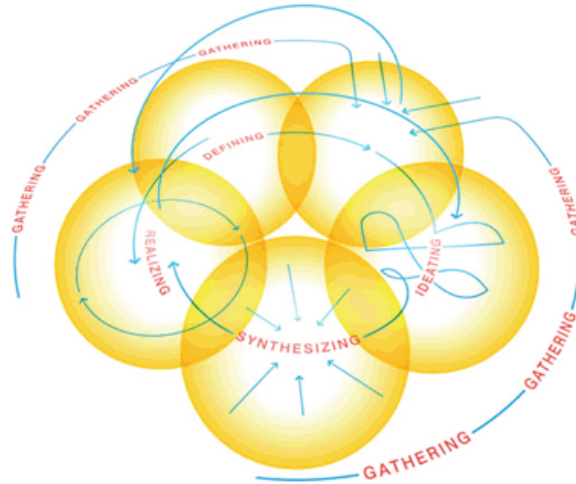


Figure 5. Design Process: “A well-known model of the design process consists of five steps. Traditionally, these steps have been thought to occur in a linear manner, beginning with defining the problem and progressing towards realizing the solution. But rarely, if ever, is the process so smooth and predictable. Design formulas certainly can be devised and followed letter by letter, ending in solutions lacking imagination and mental rigor. But perhaps it is more helpful to think of the process as five fields of activity that overlap each other in a multidimensional environment of intellectual discourse. The process is not linear; rather, it is one of interaction and ambiguity where paths appear to meander aimlessly towards durable and innovative solutions.” (Carter, 2006)

5. CREATIVE EXERCISES FOR YOURSELF AND YOUR STUDENTS

Don’t underestimate the power of *play*. Games are a wonderful way of encouraging creative thinking, whether or not it directly relates to a current assignment. Simply by completing tasks that require you to think in new ways, you are training your brain to make unique connections for future scenarios. Jeff Mogil, Professor of Pain Studies at McGill University, researches how play can even make people more empathetic (TED, 2015), and empathy is a central component of human centered design practice. Additionally, the sense of play can take the hard work out of creativity. You should love what you do. You spend too much of your life at a job to hate it. And if you’re going to have a career you disdain, choose something that pays better than an artistic endeavor.

Many board games are great creativity exercises: Apples to Apples, Boggle, Cranium, Loaded Questions, and Scrabble, to name a few. All of these games encourage people to form unique connections between seemingly unrelated items or forces people to come up with solutions within certain constraints. One game in particular is excellent for encouraging innovation. Disruptus is a board game that engages “disruptive thinking.” As described by the manufacturer, Funnybone Toys, this methodology “has been used to create ideas and objects like digital music, camera phones, and car sharing programs. Disruptive thinking is looking at an object or idea and coming up with an entirely different way to achieve the same end” (Disruptus, 2015). The game teaches about creating, improving, transforming, and disrupting, by taking existing images (the cards) and asking participants to look at them in a new way. For example, one might be given a card with a fork and asked to find a new use for the item (e.g. hairbrush, perforator, etc.). Or the prompt could ask how to improve something, like a vending machine (e.g. the vending items could all be healthy, or everything is free). By playing games, the mind is primed to look at the world through an exploratory lens.

Existing board games are not the only option for play. Twyla Tharp does a number of physical exercises to inspire her choreography and dance. One that she mentions in *The Creative Habit* is a game

“squirm,” “dart,” or “twirl” and then embodies it through movement (Tharp, 2003). All of these games are ways to start physical artistic endeavors — and beginning is so often the most difficult task.

Creative Confidence also includes a number of “creativity challenges,” including a quick one that I often do with my design classes. To start this game, Jump-Start an Ideation Session, simply print a sheet with a 30 equal-sized computer-generated circles on it. Then give participants the sheet and a pencil. Give them three minutes to turn as many circles as possible into recognizable objects and compare the results (Kelley, 2013, pp. 219-220). In practice, I love this because students can start class with a high-energy exercise that doesn’t take much time away from other activities. Additionally, I view this as a way of loosening up. It can be nerve-racking to draw in front of peers, but there is very little pressure on such quick sketches.

A personal favorite creative game is to do an “exquisite corpse.” I have seen many variations on this concept. Generally, you get a small group of people together, and each person starts by writing a sentence on a piece of paper. You then pass the piece of paper, and the next person illustrates the sentence. The third person then looks at the illustration (without having seen the first sentence) and creates a caption for it. The game is simple, is fun, and encourages play and group work. A variation on this is to create collaborative drawings by one person making a mark, the next person adding to it, and so forth. The results of these illustrative games are always unexpected, in part because no one person is controlling the result.

Although these games in and of themselves might not be *how to become a great graphic designer*, they do encourage creative action. And, as a teacher, I believe it is my job to teach students not only about design principles and software, but also how to think creatively.

6. CONCLUSION

Creativity is not just something you’re born with; it is a skill you can develop in yourself or foster in others. Innovation takes guts. To think uniquely, you risk being considered strange, so you mustn’t worry about being judged. And to be successful as a designer, you must get past a fear of failure. The design process includes trial and error, editing and reworking. To have small failures is not the same as being a failure, it’s just part of the process. But being able to think creatively is only half of the designer’s challenge — *getting to work* is the rest. You must be able to shut out distractions and find focus. Establish a routine and schedule time to generate work. Creativity may seem like an overwhelming endeavor, but the more you exercise your creative muscles, the easier it will come.

7. REFERENCES

1. Apple Think Different ad. (1997). Retrieved February 1, 2015, from <https://www.youtube.com/watch?v=nmwXdGm89Tk>
2. Carter, Rob, Meggs, Phillip B., & Day, B. (2006). *Design Process. Typographic Design: Form and Communication (4th Edition)*. Retrieved from <http://www.typographicdesign4e.com> process.html
3. Currey, M. (2013). *Daily Rituals: How Artists Work*. New York & Toronto: Alfred A. Knopf, a division of Random House of Canada.
4. Disruptus - Funnybone Products. Retrieved February 1, 2015, from <https://www.funnyboneproducts.com/product/disruptus/>

7. Gleib, J. (2013). *Manage your Day-to-Day: Build your Routine, Find your Focus & Sharpen your Creative Mind*. Las Vegas: Amazon Publishing.
8. Isaacson, W. (2011). *Steve Jobs*. New York: Simon & Schuster.
9. Kelley, T. & Kelley, D. (2013). *Creative Confidence*. New York: Crown Publishing Group.
10. Limb, C. (2010, November). *Your brain on improv*. Retrieved from http://www.ted.com/talks/charles_limb_your_brain_on_improv#t-160165
11. Newman, D. *The Design Process Simplified* (2008, November 23). Retrieved February 1, 2015, from <http://www.designsojournal.com/design-processed-explained>
12. Tharp, T & Reiter, M. (2003). *The Creative Habit: Learn it and use it for Life: A Practical Guide*. New York: Simon & Schuster.
13. TED Radio Hour (2015). *Press Play*. Retrieved October 27, 2015, from <http://www.npr.org/programs/ted-radio-hour/3902490>