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SUNY – Buffalo State

International Center for Studies in Creativity

Understanding, Teaching and Nurturing Creativity: Who Is Going To Do It?

A Project

in Creative Studies

by

Brent C. Minet

Submitted in Partial Fulfillment

of the Requirements for the Degree of

Master of Science

May 2014

ABSTRACT

Understanding, Teaching and Nurturing Creativity: Who Is Going To Do It?

This project investigates what creativity is and whether or not it can be taught. An investigation of the current education system was conducted. Research has shown that our education system is not doing a satisfactory job when it comes to nurturing creativity in students. Our educational systems lack focus in the area of creativity. It is up to the parents to demonstrate and nurture creativity for their children in the home. In order for this to take place, parents must first understand what creativity is, its importance in society and the economy, the fact that it is teachable and learnable and what action they must take in order to teach it and nurture it in their children. In order to get this information to the parents, I've created a blog in which I will publish articles. The articles on this blog will educate parents as to what creativity is and how to teach it and nurture it in their children.

Key words: creativity, education, teaching, parent, school, classroom, curriculum, learning

9/17/14

Date

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Introduction:

The purpose of this project is to divert a decline in the area of creativity that has led to what scholars are referring to as the creativity crisis. In order to halt the creativity crisis, it is essential to first understand what creativity is, the importance of creativity in the modern society and economy, whether or not schools are a positive environment for developing and nurturing creativity, whether or not creativity is teachable, and if so, how and who will teach it. Along with the inevitable change that we are faced with in our society is the need to adapt. We are finding more and more every day that there is a crucial need for creativity in this ever changing environment that we live in. Unfortunately, while the importance of creativity in our society increases, the creative performance of people in our society is decreasing and resulting in a creativity crisis of sorts. This paper will attempt to carry out the daunting task of defining creativity as it is important to have some kind of framework before one can begin working toward a solution of the creativity crisis. When considering the important role that creativity has in our economy, we realize that it is imperative that we figure out if it is teachable and if so, how can it be taught and who should teach it? The problem is that tests measuring creativity such as those conceived and developed by E. P. Torrance are showing a steady decline in overall creativity in the United States that starts at 1990 (Kim, 2011).

While the decline of creativity appears to be a problem, it is actually a symptom of many other problems that need to be addressed. The problem that is going to be addressed in this project is that of the schools not nurturing creativity in students and what action should be taken and by whom to counter act this problem. While the lack of attention given to creativity

in schools is a problem that results in the above symptom, it is important to address what the parents can do at home. Most parents do not understand what creativity really is, let alone how to develop it or nurture it in their children. It is very important that we get this message to the parents, but how? It is the objective of this project to construct a working blog that will be open for the public to read and comment on whenever they want. My reason for choosing to construct a blog is because it is a faster medium to publish information. Further, blogs are cost effective and they can be interactive for those who use them.

What is Creativity?

"The neglect of this subject by psychologists is appalling… To obtain a more tangible idea of the situation, I examined the index of the Psychological Abstracts for each year since its origin. Of approximately 121,000 titles listed in the past 23 years, only 186 were indexed as definitely bearing on the subject of creativity" (p. 445). These words that were spoken by Guilford (1950) during his inauguration as the president of the American Psychological Association are what prompted the interest and start of research in the area of creativity. It was on this day that Guilford expressed his concern about the lack of research in creativity, as only two tenths of 1% of the articles and books written in the area of psychology were directed toward the understanding of creativity. Guilford was one of the few early pioneers who understood that there was more to understanding intelligence than IQ. He knew that creativity was an area that needed serious research. One of the reasons there had been such a lack of research in creativity is that nobody really understood what it was. Further, many

scholars also linked it with intelligence and IQ, which according to Guilford (1950) was much of the reason for the lack of understanding in creativity. Still today, there are as many ideas as to what creativity is as there are people trying to figure out what it is. Many are still linking it with intelligence to this day. According to Puccio et al. (2012) "creativity research has been as reliable as the weather. Which is to say, that just as the weather always is with us, so too is the exploration into creativity. And just as predicting weather is not an exact science; understanding creativity can be just as elusive" (p. 21).

Creativity is a very difficult word to define. There are as many definitions of the word as there are people trying to define it. In short, to be considered creative, a behavior should fit four fundamental criteria: originality, relevance, fluency and flexibility (Guilford, 1957). When working toward an understanding of creativity, it is important to keep in mind that it is not exclusively confined to the arts and can take place whenever humans are engaging their intelligence, regardless of the area of focus or discipline (Robinson, 2011). Rhodes spent nearly five years trying to define the word creativity. To this day, it is Rhodes' scheme of creativity that still prevails. In the definition provided by Rhodes (1961), the word creativity functions as a noun. I like to think of the word creativity as a multi-dimensional noun as it is not just a person, a place or a thing, but it is all three of them at the same time. In Rhodes' definition, Creativity consists of the creative person, the creative product, the creative process and the creative press. Press is the word which Rhode's uses when referring to the environment or place where the creativity is taking place. It is important to note that some scholars refer to the final one as the place rather than the press. This schema is known to scholars in the field of creativity as the Four P's. For a diagram of the four P's, see Appendix

A. The diagram in Appendix A illustrates how while the person, process, product and press are all individual pieces of the scheme of creativity, they are also one in the unity of creativity. Each one of the four P's is an individual in the orchestra. It is when they come together in unity that we experience the beautiful harmony that is creativity.

The product is defined as the new concept or outcome that has been developed. The person is defined as the person or the group of people that are credited for developing the creative product. The process is the method by which the creative person or people developed the creative product. Finally, the press or place is the environment in which the creative people carry out their creative process in order to develop their creative product which must be both novel and useful. The creative press includes aspects of the environment such as the place, the chemistry of the people involved and the attitudes of other people that might be affected. The creative press is not limited to certain elements of the environment, as it can include unexpected elements, such as the weather and what is being served for lunch. Creativity cannot be adequately defined by any one of these aspects alone. While each of these individual aspects can be creative, it takes all four of them to make up creativity. All of these aspects must always be considered in the definition of creativity.

The creative thinking process is fueled by divergent and convergent thinking. It is important to understand that divergent thinking and convergent thinking are two opposites that work together as one in order to create the dynamic balance that results in creativity. In divergent thinking as many ideas as possible are generated freely and with minimal to no restrictions.

The idea is to generate quantity. Four guidelines should be applied and adhered to during divergent thinking sessions. These guidelines as described by Puccio et al. (2012) include: deferring judgment, striving for quantity, seeking novelty and making connections in order to combine and improve upon ideas. It is during the divergent thinking portion of the creative process that we are more concerned with generating quantity, rather than quality. The more options that you have the more likely you are to find the novel and useful outcome that is creativity.

The four guidelines that should be adhered to during convergent thinking sessions as described by Puccio et al. (2012) include: applying affirmative judgment, being deliberate or staying focused, checking objectives and improving ideas by keeping novelty alive. In order to find that novel and useful within a large quantity of options, we must apply judgment during the convergent thinking stage. In summary judgment is suspended during the divergent thinking stage until it is time to begin convergent thinking which requires judgment. As Firestein (1996) explains in his book “Leading on the Creative Edge”, the creative person or group of people expands the bank of options during the divergent thinking stage and they contract the bank of options during the convergent thinking stage. For a diagram of the expansion and contraction called for in the dynamic balance of creativity, see Appendix B.

Can Creativity Be Taught?

Can creativity be taught? Yes creativity can be taught and learned. According to Robinson (2011) all people possess creative capacities simply as a result of being human. The challenge that we are faced with is not the lack of creativity, but rather the need to develop the creativity that we already possess. If one does not know how to swim, we do not assume that they are not capable of swimming. Instead we understand that they have not yet been taught how to swim. This is precisely how we need to view creativity when considering how teachable and learnable it is, and whether or not teaching it should be a priority.

To understand this fully we must first review and make ourselves familiar with a few of the myths of creativity. Puccio et al. (2012) have pointed out some common myths of creativity which can help to clarify this question. For the purpose of this project, I will only be discussing three of them, but you can find the rest of them along with some additional ones contributed by Fox & Fox (2010) in Appendix C. The first myth is that creativity results from innate talent. Actually, creativity is not always fun or easy and is very often the result of hard work (Helding, 2011; Fox & Fox, 2010). One of the things that one can learn when looking back in history, is that the world's most creative people are known to be extremely hard workers. An appropriate example of this is Thomas Edison and his work on developing a light bulb. Before developing a working light bulb, Edison was questioned about many of his failed attempts at producing a light bulb. Edison responded to this by simply saying: "I have not failed. I've just found 10,000 ways that won't work". His hard work and determination

eventually led to the development of the working light bulb. From Edison's work we learn the value and need of investing time in figuring out what does not work in order to figure out what does work. The second myth is that creativity mainly deals with the arts. The truth is that creativity is important and should be a part of all walks of life. Just because one is not an artist or a musician does not mean that they are not and do not need to be creative. Some of the most creative people in the world like Einstein, Edison, Bill Gates, Steve Jobs and Steve Wozniak were not artists in the traditional sense. As a result of these folks and their innovations, Creativity is being recognized as an important element in our economy. Creativity is just as important in technology and science as it is in the arts and because of its role in innovation, it is becoming very important to businesses (Runco, 2004). The final myth that is going to be discussed in this paper is that creativity is not teachable. Creativity can be learned and developed through training. The International Center for Studies in Creative Thinking at SUNY Buffalo State, Buffalo NY is teaching people to be more creative every day. I can vouch for this, as I am one of the many people who have brought their creativity back to life through this program.

Some of the most groundbreaking research that can be found on this topic is contained in the Creative Studies Project which was conducted by Parnes & Noller (1970) at SUNY Buffalo State. The Creative Studies project was supposed to contain three phases which include: a two year study at the undergraduate level which explored whether creativity was teachable and learnable, an investigation as to what the impacts of studying creativity at the graduate level might be and an investigation of the impacts of studying creativity on alumni six or more years later. Due to a lack of funding, only the first phase of the project was carried out by

Parnes & Noller. In phase one of the study they set out to determine whether or not creativity could be taught and learned. This project consisted of an experimental group which received one creativity course per semester for four semesters and a control group which did not receive any courses in creativity. The results of this study do support the idea that creativity can be taught and learned, as the undergraduate students who were in the experimental group did show noteworthy improvement in divergent thinking.

Fox (2006) carried out his version of what might have been phase three 33 years after phase one of the Creative Studies Project was completed. While this study was not part of the Creative Studies Project designed and started by Parnes & Noller, it still sheds needed light on the longitudinal study of creativity and whether it is teachable and learnable. After gaining the knowledge that creativity could be taught and learned, it was time to determine if it would stick with those who had received training. Fox set out to determine whether or not the creativity training received by the experimental group in 1970 stayed with them. Fox wanted to know if these alumni remembered the creative training that they had received, if they still felt a positive presence of it in their life and if they still found themselves using what they had learned in creativity training. When alumni who were part of the experimental group were contacted, they remembered and spoke very highly about the Creative Studies program and the faculty members that were serving at the time. Further, they all confirmed that they still remember and use the creative problem solving skills that they learned as a result of the classes that they had taken 33 years ago. When contacting those that were part of the control group, they found that these individuals were not interested in participating in the follow up study. Many of them said that "SUNY Buffalo State did not do anything for me, so why

should I do anything for them?" Fox (2006) speculated that this response might be related to some of the press that they experienced while attending the school. Of the people who were in the experimental group, most of them were happy to participate in the study and supported the hypothesis that creative training would persist over time.

Is Creativity Important in the Present and Future Economy?

According to Batey (2011) "a raft of recent research studies demonstrates that creativity is vital from the shop floor to the boardroom and from the level of the individual to the organization as a whole" (p. 64). The role and need for creativity in our economy is becoming more apparent every day. When IBM (2012) surveyed 1,709 chief executives, general managers and senior public sector leaders in several industries around the world to determine characteristics most desired in employees, creativity, innovation and innovative partnerships were at the top of the list. It was further stated in this study that individual innovation was becoming less common and the future would bring on more innovative partnerships. Many of these innovative partnerships will exist between unexpected people, companies and industries. Creativity, innovations and partnerships are considered by executives as more desirable than rigor, management, discipline, integrity and vision (Batey, 2011).

It is important to note the prevalence of the element of change in our economy. In the years to come our children will be confronted by challenges unlike any ever seen before in history (Robinson, 2011). Change is the fuel that moves our economy, but it is also the cause of

problems often revealing themselves in our economy. Change is an inevitable force in our society. We have no choice but to embrace it, accept it and adapt to it. In order to adapt to a changing environment and the problems that develop themselves within it, it is important that we develop our creativity. While everything is changing around us, there is always a need for novelty that is useful. The success of an economy and the people who function within it is solely dependent on novel and useful contributions. An employee needs to always be on the cutting edge of their field, a business always needs to strive towards producing the latest and greatest and a country needs to do what it can to make sure that it's workers and businesses are provided with an environment or press that is conducive to developing cutting edge novelty that is useful and appropriate.

While all being contained in an ever changing container, or press as Rhodes (1961) would refer to it, it can only be assumed that there is not a set of rules or guidelines for making this work and that creative problem solving is a must. In order to have a thriving economy it is imperative that we as a people are always generating large numbers of options. Businesses are solely dependent on the dynamic balance of creativity as opposed to memorization in order to develop the novel and useful. The competitive economy is driven by innovation and the dynamic balance between divergent and convergent thinking is the driving force needed to discover those novel and useful innovations. Thomas Edison and the invention of the light bulb is an appropriate example of this. The truth is that Edison did not just invent the light bulb, but he invented an entire system of electrical lighting that included the light bulb, a power generating system and the wires to get the power from the generators to the interior of

the home. Edison had 40,000 pages of notes and had tested over 1600 materials as the filament of the light bulb before successfully executing this innovation.

Before moving forward any further, it is important that the basic difference between creativity and innovation be understood. According to Fox (personal communication, n.d.) creativity is the thought process that brings an outcome into existence and innovation is the outcome that has come into being. While creativity, by itself does not yield a return on the investment, innovation does. The innovations return on the investment can be, but is not limited to revenue. In summary, the creative product is the outcome that has been brought into existence by way of a thought process and the innovation is the tangible product that commonly has some sort of return on the investment.

Progress drives the economy, innovation drives progress, creative problem solving drives innovation and problems or the need to adapt drive creative problem solving. This is a never ending loop, as illustrated in Appendix D. Just when one thinks that they have solved a problem with a new, novel and useful innovation, something else goes wrong or another problem reveals itself. The truth is that human beings will spend their entire lives solving one problem after the next. New, novel and useful products are what make an economy thrive. An Economy that is not always generating new, novel and useful innovations is an economy that is dying. A businesses' lack of creativity can result in severe outcomes. “Organizations that stand still are likely to be swept aside and corporate history is littered with the wreckage of companies and whole industries that have been resistant to change. They became stuck in old habits and missed the wave of change that carried more innovative companies forward”

(Robinson, 2011, p. 12). In summary, doing the same thing over and over again in an environment that refuses to stay the same is not going to work to anyone's benefit. After investigating companies such as Google and 3M, Silverman (2011) discovered that the common denominator between the most innovative companies was that they allowed their employees unofficial creative time to develop novel and usefuls.

Are Schools A Positive Press for Nurturing Creativity?

If our economy depends on the novel and useful that results from creativity, then our schools should be teaching creative problem solving. Are schools a good press for developing and practicing creativity? Robinson (2011) believes that humans do not grow into creativity, but rather they grow out of it as a result of schools educating students away from it. Educators undermine creativity by encouraging only behaviors such as obedience, memorization of materials chosen by teacher / curriculum and acceptance of the judgment of authorities (Strom & Strom, 2002; Aljughaiman & Mowrer-Reynolds, 2005). Kaufman & Sternberg (2007) answered this in a manner that could not be more straightforward when they explained that the increased focus on standardized testing is causing creativity to be seen as irrelevant to education. According to Carnoy (2005) the current Formal education system is only concerned with the right answers and the needs of the children as determined by the bureaucrats at the top. Basically, all of these decisions are being made by individuals who know nothing about the children who are being taught. It is misconceptions, such as the idea that creativity is all centered on free expression that scares the educational bureaucrats from including it in the curriculum (Robinson, 2011). The material that teachers teach their students

and the methodology used to deliver the information is developed based on what the educational bureaucrats think our children need.

Our teachers and our students are told what knowledge is needed and are forced to memorize it and be tested on it. Our students are taught that there is only one right answer. This type of system turns out conformists and stereotypes rather than freely creative and original thinkers (Rogers, 1970). Rogers may have written this in 1970, but as a teacher in 2014, I can tell you that this still holds true as there is only one right answer that can be regurgitated for each question asked on a standardized test. Schools are teaching students to be proficient at taking tests rather than with the content that they are supposed to be teaching (Wagner, 2012). Knowing the facts and not understanding how to apply them is not enough.

In the revised Bloom's Taxonomy, creating is labeled as the highest form of thinking while remembering and understanding are of the lowest forms of thinking (Krathwohl, 2002; Wilson, 2013). Bloom's Taxonomy describes creativity as "putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. Creating requires users to put parts together in a new way or synthesize parts into something new and different, a new form or product. This process is the most difficult mental function in the new taxonomy" (Wilson, 2013, Anderson and Krathwohl's Taxonomy 2001, no. 6). Creativity is the highest mental function of the taxonomy, not only because it requires the use and proficiency of all of the other mental functions listed in the taxonomy, but it is also the mental function that drives them from the

understanding level to the point of change and innovation. Why does our system of education in this country focus so much time on lower level thinking while directing little to no focus on higher level thinking such as creativity? For a diagram of the levels of thinking in Bloom's Taxonomy and more information on them, see Appendix E.

Public education was developed to meet the needs of the industrial revolution and features principles of industrial production such as: linearity, conformity and standardization (Robinson, 2011). It is time for teachers to stop spoon feeding students information to be memorized and tested because we are not yet aware of what knowledge is going to be needed in the future (Shaheen, 2010). We are supposed to be educating our students and trying to prepare them for a future that has not yet revealed itself to us. We do not know what the needs of our society and economy will be when our students are in the job market. Further, we have no idea what the job market will look like. Creativity should be the center of the educational system and the home as the children we are teaching today will be serving in a future that will be much different from the past and in many ways even the present. In twenty years, the jobs that we know today probably will not exist, at least not in the same form (Clark, 2006). Our current children will hold jobs in their adulthood that we cannot even imagine at this present moment in time (Berrett, 2013).

Schools need to start addressing creative thinking in order to prepare these students for the world that lies ahead of them. We must stop forcing these students to memorize facts from the industrial revolution or the civil war in order to pass a standardized test. It is time for schools to teach students how to think and use creative problem solving so that they are prepared for

the next revolution which has not yet revealed itself. The industrial revolution that we all learn about in school will pale in significance to the industrial revolution that is on its way (Guilford, 1950).

Guilford further elaborated that the first industrial revolution rendered man's muscles useless, but the next one will render man's brain as we know it useless. The question going through one's mind now might be: Why or how will man's brain be rendered useless? The answer is that we are not effectively teaching and training the brains of the future men and women who will be facing the new industrial revolution of tomorrow. How is our society going to compete in a global economy if we are teaching students to adapt to yesterday's or today's world? Schools need to understand that they are not supposed to be preparing students to take part in something that happened 100 years ago. Further, teachers need to understand that preparing students to be good test takers is not going to help them in the real world. Instead, they are supposed to be preparing them for a future that we have no idea what holds for them.

Today's education system is obsolete and needs to be completely restructured in a way that features disciplined group processes and creative collaboration (Sawyer, 2006). Unfortunately, right or wrong does not help with this task. It is *process skills* that are needed in order for humanity to prepare themselves for a future that has not been revealed. If our ancestors had just passed on the skills that they knew, and we did not step out of the box and be creative, we would still be in the Stone Age (Meyerhoff, 2008). The truth is that if there had been no one deferring judgment and thinking divergently all of these years, we would not

have ever made any advancement. One cannot create things that do not exist if they are only taught about what already does exist.

While teachers generally have no problem adhering to the principles of convergent thinking, they must begin to realize the importance of divergent thinking and its four principles. Teachers must become more proficient at deferring judgment and teaching their students to do so as well. In other words, teachers and schools need to stop setting so many limitations on students and allow for more freedom in the classroom. Teachers must stop being so quick to pass judgment on student work and ideas. Judgment can include feedback that is negative or positive. Negative feedback can result in the creative person shutting down and positive feedback can result in the creative person not reaching even further for more ideas (Puccio, Switalski, Reali, & Mance, 2012). In other words, both negative and positive feedback can result in the student shutting down. Sometimes, there is a place for no feedback.

Teachers and schools need to start allowing the freedom of divergent thinking in the schools. Divergent thinking is the more desired skill in our global economy, but Meyerhoff (2008) concluded that schools seldom encourage enough divergent thinking and frequently go as far as to discourage it. Far too often, it is divergent thinkers who are always getting in trouble in school for being disruptive. Divergent thinkers are often accused of being the class clown, when in fact they are actually bringing a lot to the table. Not only is divergent thinking one of the most desired skills for employers of their employees, but a study conducted by Ames & Runco (2005) indicates that most successful entrepreneurs are strong divergent thinkers and

rarely rely on routine and / or rote solutions to problems. Teachers and schools need to stop ignoring and discouraging this important skill.

A common question that is often asked by teachers is: How do I teach my students to be creative? Maybe we should be asking: How might one recognize the creative ability of individuals, then how might this creative ability be expanded, transformed, channeled and utilized (Derell, 1963)? This is very interesting because it is saying that creativity might be inherent rather than taught and learned. As Robinson (2012) said, creativity may just be part of being human. Gardner (1982) discovered that preschool children demonstrate high levels of creativity and that it is when they enter school that their creativity begins to decline because they are introduced to conformity. Is it possible that children enter school as perfectly creative beings and it is the education system that forces them to conform into non-creative beings? Our schools are so concerned with political correctness, the need for one correct answer, standardized testing, appropriate behaviors and conformity, that it is crushing the creativity and individuality of our youth. The increase in appropriateness and conformity shows a direct relationship to the decrease of divergent thinking (Charles & Runco, 2001). Teachers, need to stop viewing creativity in their students as a challenge. Torrance (1963) found that the characteristic qualities associated with students who are creative are at odds with those that the teacher would prefer to see in the students. Scott (1999) conducted a study with results indicating that teachers commonly label creative children as disruptive. Students who demonstrate high levels of creativity will not be conformists and are most likely to be the students who challenge the teacher and get in trouble frequently (Dawson, 1997). It is becoming apparent that the students who performed well intellectually while they were in

school are not necessarily the ones who gain success later when they are out of school, as a matter of fact it is those that did not perform as well or fit the teachers preferred mold in school that are more successful (Farson & Keyes, 2002). If it is the students who do not meet the objectives of the education system that acquire success in the real world, maybe it is time for the education system to adjust their objectives accordingly.

Aljughaiman & Mowrer-Reynolds (2005) conducted a study to evaluate what teachers' conceptions of creativity and creative students were. Most of the teachers who were evaluated displayed positive attitudes and perceptions of creativity. More than 50% of the teachers agreed that creativity could be taught to anybody and 81% of teachers felt that creativity could be developed in the regular classroom. However, when these teachers were asked if it was their responsibility to teach creativity in the classroom, only 31% of them felt that it was. Seventy eight percent of the teachers in this study said that creativity is crucial for academic development, 81% said that creativity could be taught in the classroom and only 31% of them think it is their responsibility to develop creativity in their students. Basically, most of these teachers are saying that they simply do not feel like teaching creative thinking. If this is the mindset and stance that teachers, administrators and bureaucrats of our education system are going to maintain then the future of this country will be grim. It is the teachers of today who we are relying on to save and preserve the future of our culture and economy. It is imperative that our school systems come to an understanding as to what teaching methods, teacher behaviors and social relationships are needed to promote creativity in our youth as creativity is crucial to future economic, scientific, social, artistic and cultural development (Hennessey & Amabile, 2010).

Teachers should help students develop an awareness of their own creativity by encouraging them to experiment in an atmosphere permissive to new ideas and in a climate that recognizes mistakes to be a logical and legitimate part of the learning process (Derell, 1963). According to Robinson (2011) “we are all born with immense natural talents but that too few people discover what they are and even fewer develop them properly. Ironically, one of the main reasons for this massive waste of talent is the very process that is meant to develop it: education” (p. 7). Teaching for creativity requires that the teacher encourage students to be creative and reward creative behavior when it occurs (Kaufman & Sternberg, 2007). Could it be this simple? Could it be that all teachers need to do is create the atmosphere and allow mistakes? Unfortunately, our schools are not providing this kind of learning atmosphere while preparing students for standardized tests. Our focus on intelligence testing is the cause of us missing much of our students’ creative ability (Sham’ah, 2007).

It is time for teachers to allow mistakes and new ideas. Teachers must begin arranging opportunities for all students to practice and develop their creative thinking skills (Strom & Strom, 2002). Such opportunities can be arranged by simply putting time aside and allowing and accepting mistakes as learning opportunities instead of "wrong". The growing desire for teamwork in businesses means that teachers need to start educating students for these skills in school (Edwards & Ewen, 1996). Shaheen (2010) recognized that primary education is a critical stage in child development. This includes the development of their creativity.

Creativity has not always been in crises, as a matter of fact the Flynn effect was noted in creativity up until 1990 (Helding, 2011). Our schools are not nurturing creativity in a way that

they should. When Kim (2011) analyzed the scores on several Torrance Tests of Creative Thinking that were administered between 1974 and 2008, it was noted that there were mostly increases until 1990, but what we need to be most concerned with now is the steady 20-year decline that these test scores are showing starting in 1990. Our schools and our parents are not doing what needs to be done in order to prepare our youth to be effective problem solvers and innovators. Plucker (1999) conducted a reanalysis of data collected from the Torrance Tests. He discovered that the data indicates a stronger correlation between lifetime creative accomplishments and childhood creativity than lifelong creative accomplishments and IQ. Considering this, isn't it time that someone starts considering creativity as part of a balanced education for the whole child?

Who Is Going to Teach Creativity?

Unfortunately, so much research shows that one cannot depend on the schools to nurture our children's creativity. The environment in which children live or work can encourage or discourage creative behavior (Kemple & Nissenberg, 2000). This is what Rhodes (1961) referred to as the press while he was illustrating the four P's of creativity. Schools do not appear to be an encouraging environment for creativity. According to Meyerhoff (2008) "Education is too important to be left entirely in the hands of the schools. While parents may want to urge their children to follow the rules in school, I would hope they would also feel they have a responsibility to provide their children with opportunities to imagine and experiment with different rules outside of the classroom" (p. 9). Sometimes this is as simple as the parents backing off and letting the kids be kids. In other words, sometimes children

need to do their own thing. Parents should not stay out of the picture too often as some fun activities organized by the parent can be useful for nurturing creativity as well. Because of this, parents must do their part in providing creative experiences for their children at home.

Parents must examine their home and parenting style to determine whether or not they are providing the ideal press or environment for their child to develop their creativity in. Parental behavior and style is a critical part of creating an environment or press that is conducive to creativity. When Fearon et al. (2013) studied the relationship between parenting styles and creativity in a sample of Jamaican children, they considered three different parenting styles: permissive, authoritarian and authoritative. For more on parenting styles, see Appendix F. Their research concluded that authoritarian parenting has negative effects on the creative ability of children. The best parenting style for developing creativity in children is the authoritative style. Creative children have parents who treat them with respect, value their ideas, have confidence in their abilities, give them responsibility with autonomy and freedom and expect them to do well (Miller & Gerard, 1979).

In his book "Creating Innovators: The Making of Young People Who Will Change the World", Wagner (2012) discusses several different individuals who made ground breaking innovations that have impacted and progressed our society in countless ways. The one thing that all of these individuals had in common were that they had supportive parents who engaged in an authoritative parenting style. As children these individuals were given the opportunity to make their own decisions. At times these decisions resulted in mistakes that they could learn from. These parents maintained the balance of being involved in their

children's life and stepping back to allow them to do their own thing. Did the parents agree with all of the choices that their children made? Absolutely not, but they did not get in the way of their choices either.

As children, these folks were given the opportunity to engage in their own lives. It is quite often that parents forget to allow their children to do this. Most highly creative people spent the early years of their lives surrounded by a family and/or parents who were proficient at performing a balancing act between a series of opposites (Gute, Gute, Nakamura, & Csikszentmihalyi, 2008). Some of the opposites that might play in as a part of the balancing act include: parents spending time with their children versus leaving them alone at the appropriate times and holding high expectations versus allowing experimentation and mistakes. These parents generally try to show affection and love toward their children without smothering them and controlling them. Parents who implement too much control over their children might rob them of their independence and opportunities to explore.

While letting their children explore and make decisions on their own, parents must always remember the importance of allowing them to make mistakes. One of the problems with the school environment is that only right answers are accepted by the teachers. Students are never given an opportunity to make mistakes and learn from them at school. It is up to the parents to make accommodations for their children that fill this void.

Farson & Keyes (2002) explained that failure often leads to success and success often leads to failure. They further explain that if one does not have a list of failures in their life, they are not taking enough risks. Failures are how we learn not to do things. Often learning how not to do things can result in learning how to do things by elimination. It is important to understand that failure and success are a balance and that one cannot exist without the other. For a diagram of the balance between failure and success, see Appendix G. Opportunities for failure are important in the life of the creative individual as it is a sign of risk taking and adaptation to change.

Wright & Wright (1986) developed a three pronged model of the creative family environment which is supported and illustrated by Miller and Gerard's findings. The three main components of the creative family environment are respect for the child, stimulation of independence and an enriched learning environment. These qualities that were discussed by Miller & Gerard and Wright & Wright are a direct reflection of the authoritative parenting style. To date, the research implies that the authoritative style of parenting is the one that most nurtures and develops creativity. Creative children are not content to learn by authority (Sham'ah, 2007) therefore, the authoritarian style of parenting is not a good option for nurturing creativity in children. Parents must also provide their children with the time, space, materials and climate for being creative. Children learn creativity by example. If the parents can demonstrate creative behaviors, then their children will likewise be able to demonstrate creative behaviors.

Helding (2011) not only blames “teaching to the test”, but also blames television and video games. It is important that parents monitor the amount of time that their children are spending watching television. This alone is not enough though, as the parents also need to monitor what video games are being played and what programs are being viewed on television by their children. While spending too much time watching television, playing video games and using the computer can hinder the development of a child's creativity, it is important to keep in mind that there are television shows, movies, video games, computer games and websites that can have a positive impact on creativity. In summary, it is up to the parents to monitor both time and quality. Parents must make certain that the time children spend doing these things is beneficial to them.

It is imperative to understand that parents are an important part of the development of their child’s creativity, even if their teachers are supporting and fostering their creativity. The teachers who value the creativity of children and who strive to promote creativity in the school environment find they have greater success when the child’s family understands, share’s the teachers goals and collaborates with the teacher to support those goals at home (Kemple & Nissenberg, 2000). Just because one’s children might be blessed with a teacher who values creativity, it is no excuse for the parents to consider themselves off duty. No matter how much creative thinking children do at school, it is still imperative that the parents demonstrate and encourage creativity at home.

Working Toward a Solution

Initially, when I began to consider this project, the issue that concerned me was that children's creativity was tapering off at the fourth grade level according to the Torrance test. Following the thinking skills model (Puccio, Murdock, & Mance, 2007) I began working toward a solution to this problem. See Appendix H for a diagram of the thinking skills model. My starting point was in the clarification stage of the model because I wanted to make certain that children's lack in creativity was the problem and not just a symptom of another underlying problem. As it turns out, while I was in the clarification stage, I discovered that the lack of creativity in children was a symptom of not just one, but many other real problems. Some of the problems leading toward the lack of creativity in children that I discovered include: Schools that do not emphasize the importance of creativity because they are overly focused on standardized test and common core standards, videogames, television and the lack of parental knowledge in creativity. Because I cannot tackle all of these problems in one project, the clarification stage helped me narrow it down to just one manageable problem to focus on. I chose to work on developing a solution for the lack of parental knowledge in creativity.

Once I decided that the lack of parental knowledge in creativity was the problem that I wanted to focus on, it was time to move on to the transformation stage of the thinking skills model. It was in the transformation stage that I began ideating and generating a diverse bank of options for solving the problem. During this stage I came up with numerous options, such as: developing a web application and a mobile application, writing a book, producing a movie and even an online radio station centered on creativity. After using divergent thinking to

develop a large list of options, I then used convergent thinking to decide which of these options would be the most likely to become a reality. Because of cost and my knowledge of website development, I decided that developing a blog or website was the best option for me to pursue.

Now that I had selected blogging as the option that I wanted to develop, it was time to move on to the implementation stage. The implementation stage is where a promising option is evaluated and developed into the workable solution that is needed. The implementation stage is where I made decisions such as what hosting service am I going to use, what content manager should I use, what the website should look like, how often and when content should be added to the website and of course, what content should be on the website.

Blogging as a Solution

A blog is a combination of the words "web" and "log". A weblog is a journal or diary that is kept on the internet. According to Seal (2011), blogs are a great way to network with others, promote a cause or business and allow one to publish material without having to crawl through the conventional media hoops and middle people. Because of advanced technology and the internet we have low cost production and instant distribution at our fingertips (Puccio, Switalski, Reali, & Mance, 2012). The internet is a venue where all people can be published quickly, efficiently and inexpensively. Freedom of speech is alive and well on the internet, in part because of blogs and social networking. The fact that blogs are environmentally friendly,

as they do not require the use of paper is an extra added bonus to this option as well. Actually, the only disadvantage to blogging is that you must make certain that you carefully edit your work before publishing it (Seal, 2011). Once you click the publish button in the user interface, your blog entry is published instantly for all to see. While the instantaneous nature of blogging can be an advantage, it can also work to your disadvantage if you publish an entry that has not been carefully edited.

Take the extra time to ensure that you are publishing quality entries. If a blog or a blog entry lacks quality, the blogger will lose credibility. It is always important for bloggers to maintain their credibility. Without credibility, their cause or business will not benefit from blogging. Another thing that can damage credibility is deleting comments or responses to blog entries. A credible blogger always regards all of their readers' comments as valuable. One must always remember that it is best to answer critics, respond to readers concerns and sometimes even admit to making a mistake. Comments should only be edited for profanity, not skepticism or criticism. Freedom of expression is a large part of what makes blogging one of the best venues for getting information published and reaching diverse audiences. While in an interview, Jonathan Schwartz, Chief Executive of Sun Microsystems said "the payback for allowing free expression is that customers value authenticity and integrity and that one day it will prove to be a competitive advantage" (Jones, 2006, para. 5).

In comparison to traditional websites, blogging is beginning to be recognized as much more effective in business (Weaver, 2010). Since blogging is effective for promoting businesses than logic would dictate that it must be effective in promoting a cause or concept. When

entering into the world of blogging it is also important to understand what microblogging is as well. Microblogging is that conducted by using social networking tools, such as Twitter and Facebook. In many cases social networking is just as important as the blog itself. Social media or microblogging tools are a great way to promote the actual blog. For example, posting a short, catchy microblog on Facebook or Twitter with the link to the blog can be a great way to draw and attract people to your blog. I generally think of microblogging or social networking as a gateway to the website or blog. See Appendix I to gain a better understanding of how microblogging can serve as a gateway for people to discover a blog.

Since I already have a hosting account with Justhost.com that I can add unlimited domains too, I decided to host my blog there. Once I decided that my domain name was going to be famativity.com, I purchased the domain and added it to my Justhost account. I decided to use Wordpress.org as my content manager, because it is one of the best, most stable and user friendly content managers available to bloggers. What I really liked about Wordpress.org, is that while being user friendly, it also grants the administrator a lot of control. One can even customize things in html, if needed. For screen shots of the Wordpress.org platform, see Appendix J.

My goals for this blog are multi-dimensional. The first intent of this blog is to teach parents what creativity is. In order to understand creativity, parents will need some understanding of its history, the pioneers of the increased interest in creativity which led to its research, understanding of it being a teachable and learnable skill and myths that have developed over

time that are associated with it. For an example of blog entries that are targeted toward informing parents of what creativity is, see Appendix K.

Once parents have some understanding of what creativity is, the second intent of this blog is that the parents might be able to develop their own creativity. It is important that the parents develop their creativity so that they might be able to lead from example as children have a tendency to learn much of what they know and do from demonstration. For examples of blog posts that are intended to help parents develop their creativity and their children's creativity, see Appendix L.

The third intent of this blog is to share activities that can be used as a family to practice and enhance their creativity and also give parents the basic skills and tools to develop their own activities that can be done as a family. For examples of blog entries that feature creative activities that can be enjoyed by the family, see Appendix M. Last, I hope to share creative methods of teaching children everyday skills, such as tying their shoes, examples of creativity in action, examples of creative products, and inspirational things, such as quotes about creativity. To view examples of these types of blog posts, see Appendix N.

Results and Conclusion

Although this project is still in its primary stages, the hope is that parents use the blog and become more aware of what creativity is, its importance in our economy and society and how to develop and nurture it in themselves as well as their children. Parents must realize that

creativity can be learned through demonstration. By providing articles about creativity and what it is, it is my hope that this website will reach parents so that they can have this information. By providing activities that the family can do together in order to nurture their creativity, it is my hope that parents who are reading this blog will not ever run out of creative activities to do with their children.

Because creativity can be learned through modeling and demonstration, it is my hope that through my creative posts, I will be a model for the parents and then the parents can be the model that the children follow. I hope that through my blog, not only will parents never run out of creative activities to do with their family, but that they will begin developing their own creative activities. Posted on my blog are entries that feature activities such as: *"Junk Sculptures"*, *"Building On A Favorite Song"*, *"Story Re-creativity"* and *"Circular Stories"*. Besides activities, my blog also includes important entries that share things that everyone should know about creativity such as: *"An Introduction to Creativity"*, *"Wasted Time"* and *"Write It Down"*. Since the focus is about what actions parents can take to nurture creativity in their children, my blog also features articles that directly illustrate how parents can nurture or kill creativity.

On this blog, readers can post comments, questions or concerns. This allows my blog to function as a social network platform of sorts for those who are interested in discussing the posts. This blog also has a Facebook and Twitter page associated with it, allowing people to

like, comment and share posts to their Facebook timeline or Twitter feed so that a larger audience might be reached.

Future Implications:

One of the things that need to be remembered in the area of creativity is that a creative person's work is never done. Those who engage in creativity always find areas that need to be improved upon and areas for possible new innovations. A paper without future implications is a sign that the author lacks creativity. There are many next steps that could be added to this project. I am confident that I will still be thinking of next steps for this project well after I have "completed" it.

The very next step that I would like to take in this project is to create an evaluation survey with a few questions about the blog to be handed out to people for completion. An example of such a survey can be found in Appendix O. I would invite people to use the blog, answer the questions on the survey and turn it in to me so that I can consider there feedback while further developing this project. As the website continues to develop and more people begin to post comments to the entries on the blog, it is my hope that I will be able to further develop and improve the blog based on people's comments. User feedback is most important when one is looking for areas to improve upon and further develop in a project such as this one.

I have future intentions of making this blog more interactive through the use of online polls or surveys, inclusion of interactive activities, and games that nurture creativity. Polls are an easy way to draw more people to a blog. People love to express themselves and be heard. Polls are a great way to do this. For an example of how a survey or poll might be posted to a blog, see Appendix P. The blogger can post a survey in a blog post and then share it to their Facebook timeline and Twitter feed. Interactive activities and games can also be very useful for nurturing creativity. In the future I would have to spend more time thinking divergently in order to develop activities and games that nurture creativity and implement them to the blog. Unfortunately, I cannot elaborate more on this in this at this time.

Another valuable asset to this blog would be to implement a YouTube and an online radio show or station of sorts. Multimedia is a great way of getting material out to the masses and reinforcing it. As one works on a project such as this one, it is imperative to set goals for accommodating as many different learning styles as possible. These styles include visual/verbal, visual/nonverbal, auditory/verbal and tactile/kinesthetic. For more information on learning styles, see Appendix Q. It is my hope that through implementing video, sound, images and a diverse collection of activities that my blog will target all of these learning styles in some way or another.

Last, I would like to network with national speakers, artists, musicians, scientists and other creative innovators who have contributed to our society. I think it would be valuable to set up interviews with such people so that I might be able to learn more about their contributions to

society and the creative process that led to these contributions. As a result of innovations like, Facebook, Twitter, Facetime, Google Hangouts and email it is easier to do this today than it ever has been before. I believe it is time to take advantage of these incredible tools that are available to us!

Summary

I began this paper by discussing what creativity is. It was discussed that creativity is a multi-dimensional action noun that describes the generation of something that is novel and useful. While discussing creativity, we learned about the four P's, which include the creative person, process, press and product. Together, all four of these elements are creativity and each individual element is creative. Once an understanding of creativity was reached, we went on to explore its importance in our society and the global economy. We found that most companies find creativity to be the most desirable trait possessed by employees. It has been discovered that without creativity and divergent thinking there would be no development and progress.

If we were simply using the skills that were handed down to us through generations and not innovating, we would still be in the Stone Age. Because of the important role that creativity plays in moving forward, it is important that we understand whether or not it can be learned and if so, how? When discussing this, we had to go over a few common myths of creativity. In this section it was made clear that creativity is not an innate ability that one is born with, it

is not exclusively associated with arts and music, and it is most definitely teachable. The truth is that creativity is just a lot of work. If one is willing to carry out the work, then one will be creative. The most important thing to learn in order to be creative is how to defer judgment.

The other issue that this project was concerned with is schools and their role in developing and nurturing creativity. The truth is that schools are very important for developing and nurturing creativity, but unfortunately they do not do a satisfactory job of it. Due to the increased emphasis on standardized testing and common core standards, creativity is not being addressed in the classroom. Education has become a one correct answer and one size fits all system. Schools are not using mistakes as learning opportunities. Children are being taught to memorize in the classroom and regurgitate what they have memorized on a standardized test. What is most unfortunate is that schools do not encourage divergent thinking and quite often even discourage it. Schools are preparing children to be proficient test takers, rather than proficient contributors to society. If the schools are not going to develop and nurture creativity, who will? It seems as though it might be the responsibility of the parents.

Parents are very instrumental in the development and nurturing of their children's creativity. Even in situations where schools recognize the importance of creativity, the parent should not consider themselves off duty. Parents must develop and nurture their children's creativity through that of an authoritative parenting style, demonstration of creativity, providing creative activities, space, time and support. Unfortunately, parents are not creativity experts and not

only do they not understand what creativity is, even if they did they probably wouldn't realize what action is needed from them in order to develop and nurture it in their children.

On this blog, parents will find the resources needed in order for them to learn more about creativity and how to develop it and nurture it in themselves and their children. Further, this blog will provide activities that can be done in the household. After I have fully developed this portion of the project, my next steps will be to conduct an evaluation survey in order to acquire feedback from the users. It is my plan to use this feedback so that I might be able to make improvements to the blog based on the users' interests and needs. It is also my hope that the future of this website includes games and interactive activities targeted at developing creativity. It would also be interesting to see if an online radio and video channel could be implemented on this blog so that I might be able to target multiple learning styles. Finally, I would like to network and conduct interviews with other creative innovators so that we might be able to learn more about how to be creative.

While there are so many problems that lead to the creativity crisis in America that need to be addressed, I think the family is the best place to start.

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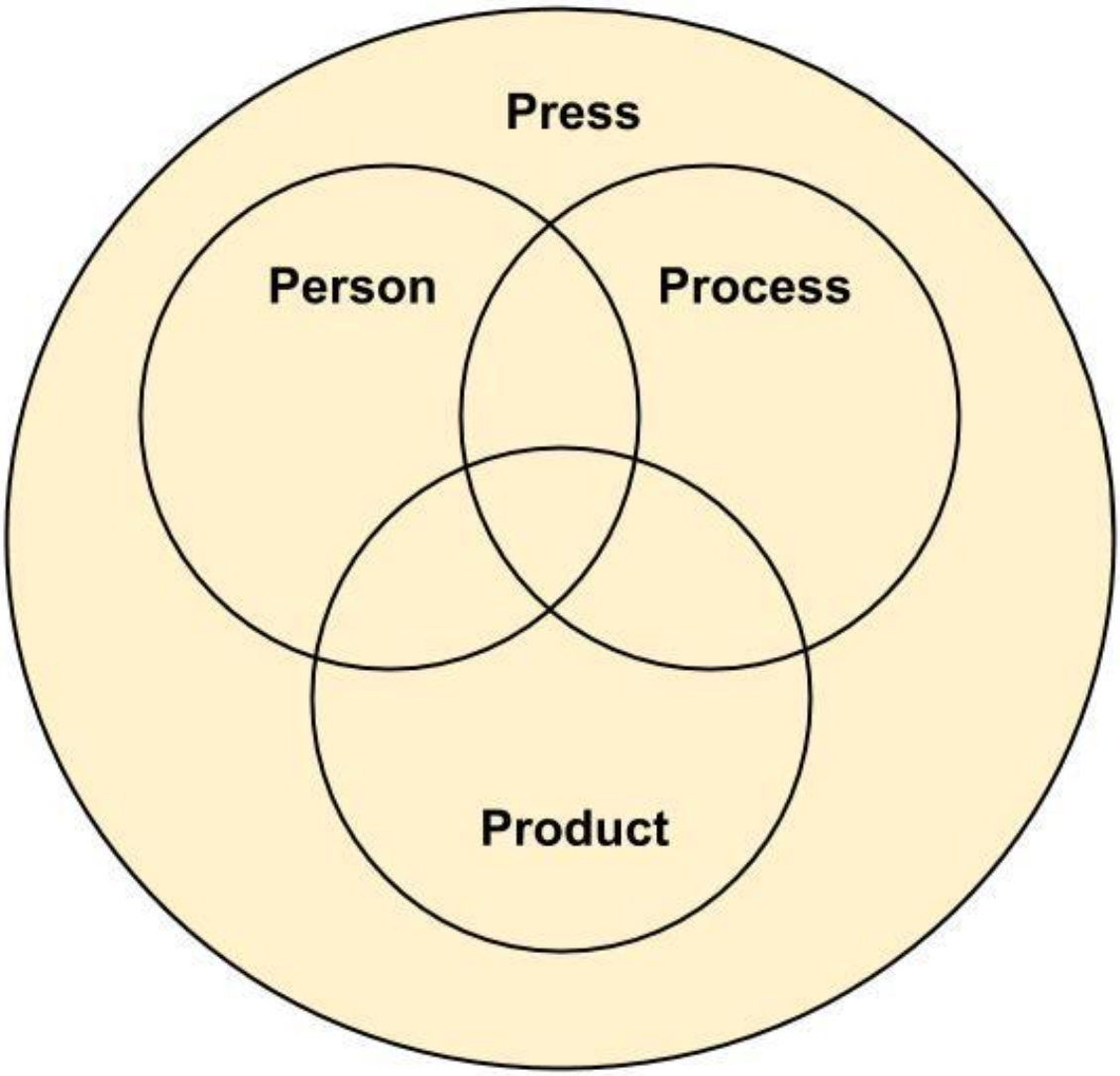
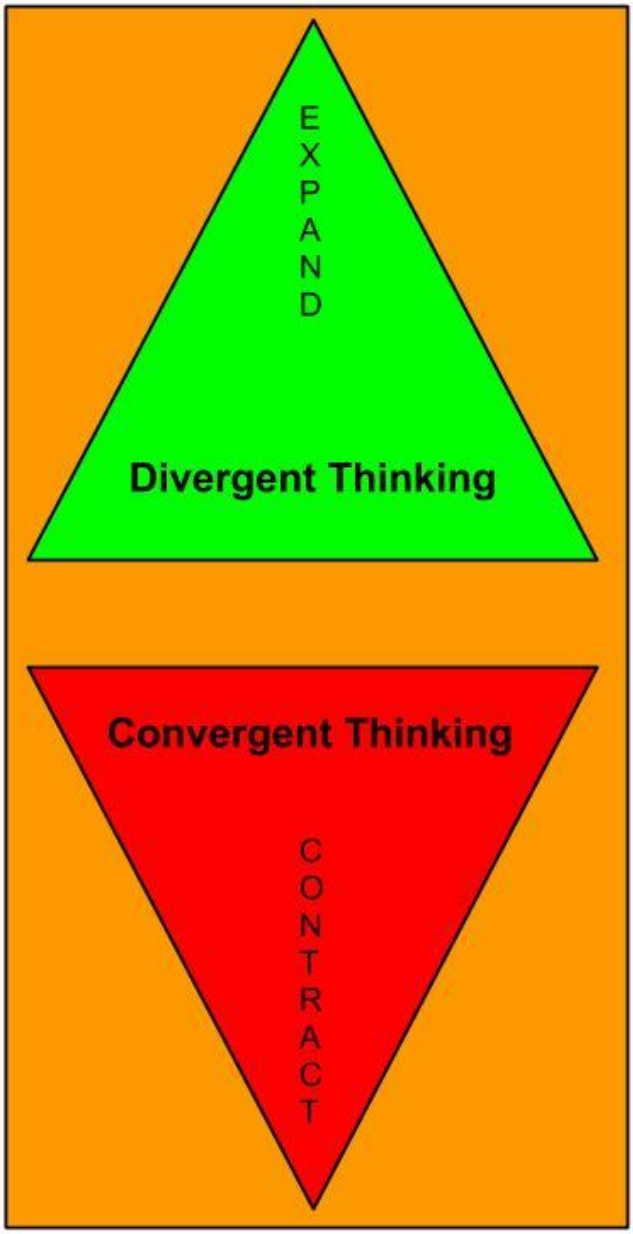
Appendix A: The Four P's of Creativity



This is a diagram of the Four P's of Creativity. This diagram illustrates how the person, process, product and press are all individual pieces that function together to form what we acknowledge to be Creativity. The person, process and product are always contained within a press or environment. The person, press and product can function individually, in groups of two or altogether. Creativity is the result of all three of them coming together cooperatively within the press.

Appendix B: The Dynamic Balance of Creativity



This diagram illustrates the expanding and contracting that takes place within the Dynamic Balance of Creativity. During divergent thinking the bank of options expands due to suppressed judgment. The bank of options contracts as judgment is implemented during convergent thinking.

Appendix C: The Myths of Creativity

Myths	Facts
Creativity is the result of innate talent or genius.	Creativity is the result of hard work and dedication.
Creativity is mainly associated with the arts.	Creativity spreads across all areas of human life and often happens whenever thinking is engaged.
Children are more creative than adults.	While it may appear that children are more creative than adults, it is not entirely true. Younger children just haven't been conformed into not using their creativity yet. The truth is that the greatest creative accomplishments require years of life experiences.
Creativity is the same thing as originality.	Creativity is the intersection of novel and usefulness.
Creativity cannot be taught.	Creativity can be taught, nurtured and enhanced through teaching and training.
The myth of mystery says that creativity is unknowable. This myth places the divine source of creativity externally from an unknown source beyond our control.	Creativity is knowable. Scholars have been researching creativity for over 60 years. There are numerous measures of creativity. When a subject can be measured, it loses its mystery.
The myth of magic says that you are either born with creativity or you are not. If this is true, one is not able to develop their creativity.	Creativity is natural and learnable. Creativity is skill set that everybody can have. "When you learn what the magician knows, it's not magic anymore."
The myth of madness says that the creative person is a madman. When people think that one has to be a madman or strange in order to be creative, creativity loses its attractiveness.	Creativity is healthy, not destructive. Unless you are already mentally unbalanced, creativity will not make you so.
The myth of merriment says that creativity is only for fun or play. There is no serious place or reason for creativity.	Major corporations are beginning to note the importance of creativity and creative people and how they are vital to the survival of a business. Creativity produces positive outcomes for businesses. While creativity can be fun and playful, it is important to note that its main ingredients are hard work and persistence.

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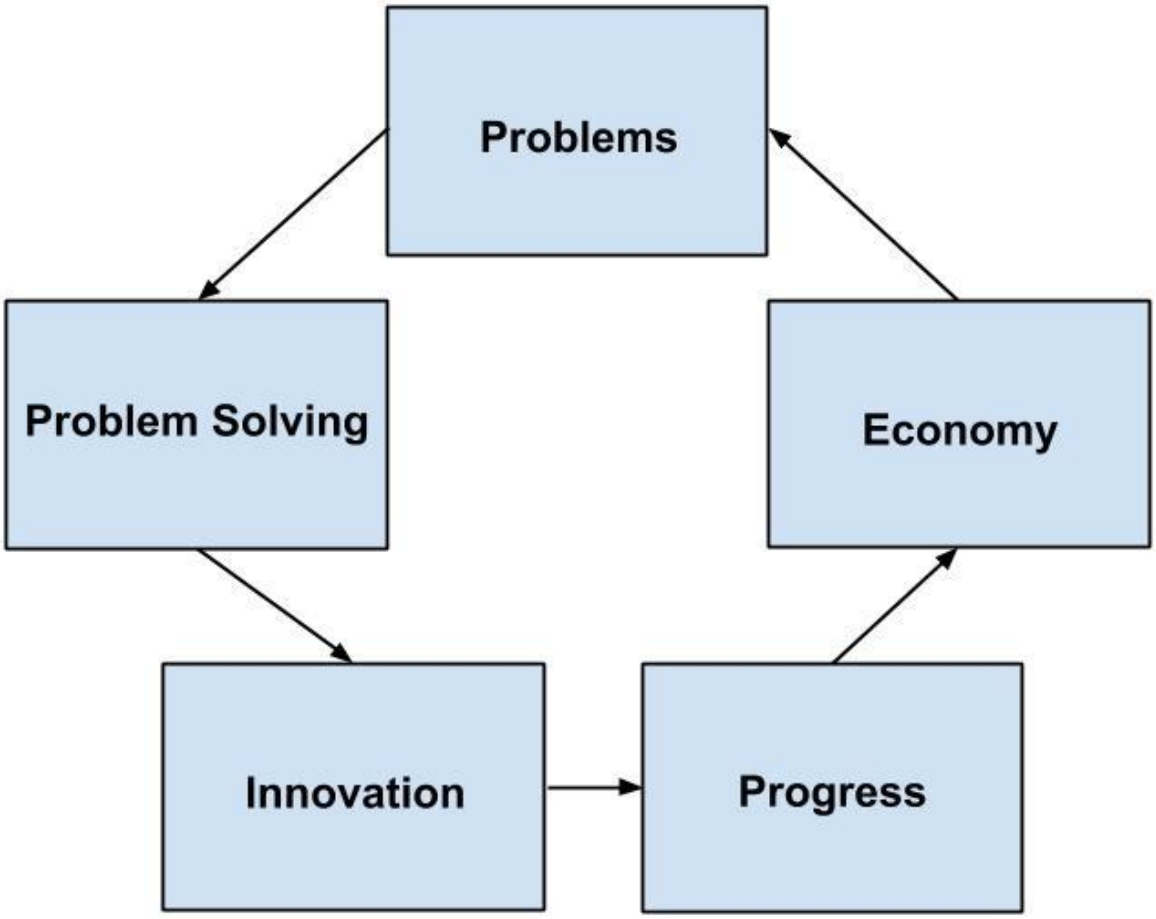
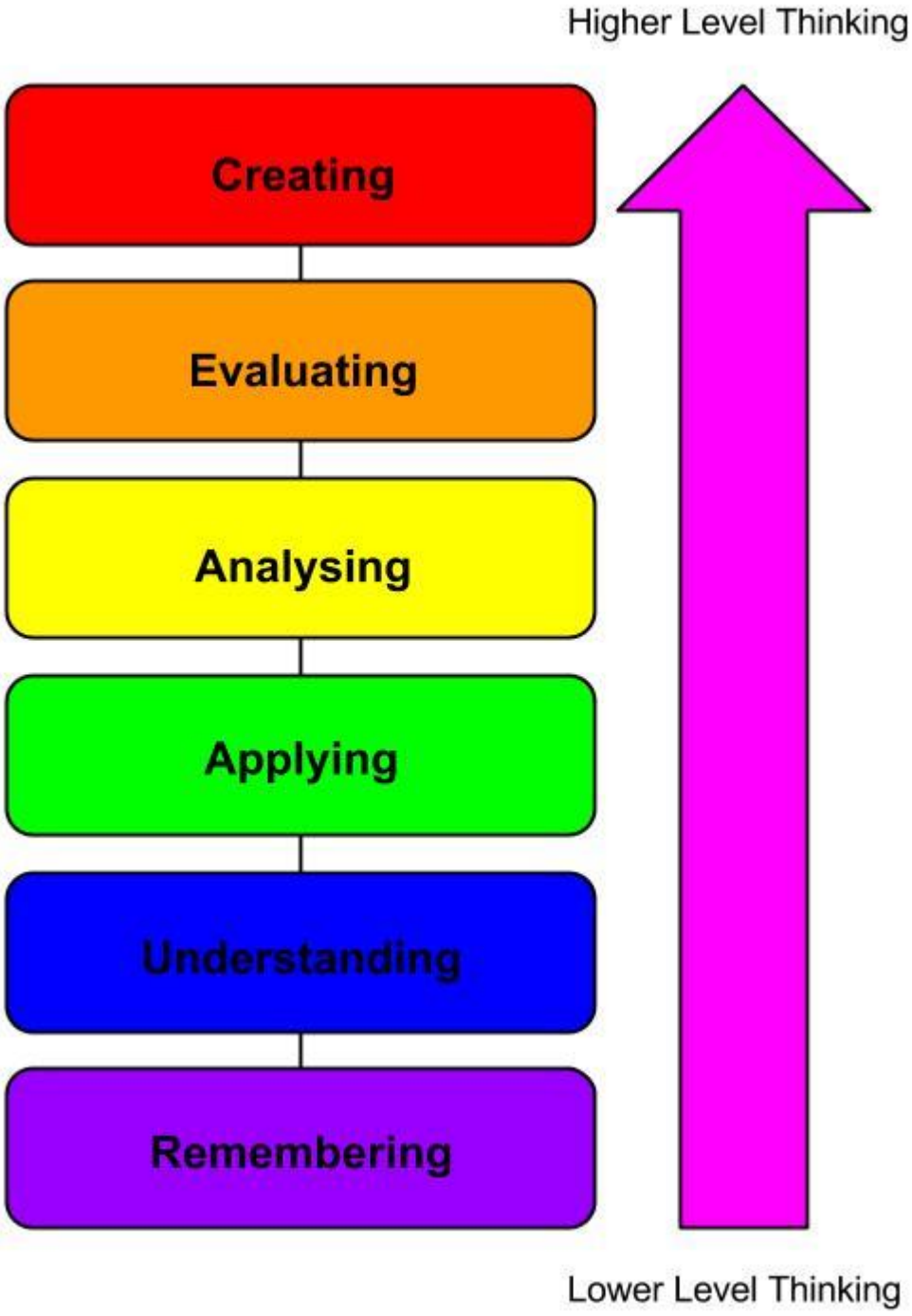
Fox, J. M., & Fox, R. L. (2010). *Exploring the Nature of Creativity* (3rd ed.). Dubuque, IA: Kendall Hunt.

Appendix D: The Cycle of Progress in the Competitive Economy



This diagram presents a cycle that takes place within a competitive economy. This diagram does not have a beginning or an end, as problems have been presenting themselves to human beings since the start of their existence. While it is problems that drive problem solving, problem solving that drives innovation, innovation that drives progress and progress that drives the economy one must realize that this is not where it stops. The economy does drive more problems, which starts the whole circle all over again. There will always be a need for progress.

Appendix E: Bloom's Taxonomy 2001



Bloom's Taxonomy
Creating: Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning or producing. Creating requires users to put parts together in a new way or synthesize parts into something new or different a new form or product. This process is the most difficult mental function in the new taxonomy.
Evaluating: Making judgments based on criteria and standards through checking and critiquing. Critiques, recommendations and reports are some of the products that can be created to demonstrate the process of evaluation. In the newer taxonomy evaluations comes before creating as it is often a necessary part of the precursory behavior before creating something.
Analyzing: Breaking material or concepts into parts, determining how the parts relate or interrelate to one another or to an overall structure or purpose. Mental actions included in this function are differentiating, organizing and attributing, as well as being able to distinguish between the components or parts. When one is analyzing he or she can illustrate this mental function by creating spreadsheets, surveys, charts, diagrams or graphic representations.
Applying: Carrying out or using a procedure through executing, or implementing. Applying related and refers to situations where learned material is used through products like models, presentations, interviews or simulations.
Understanding: Constructing meaning from different types of functions be they written or graphic messages activities like interpreting, exemplifying, classifying, summarizing, inferring, comparing and explaining.
Remembering: Recognizing or recalling from memory. Remembering is when memory is used to produce definitions, facts or lists, or recite or retrieve material.

Wilson, L. O. (2013). Beyond Bloom's – Cognitive Taxonomy Revised: Understanding the New Revisions of Bloom's Taxonomy. Retrieved April 9, 2014, from www.thesecondprinciple.com/ website: http://thesecondprinciple.com/teaching-essentials/beyond-bloom-cognitive-taxonomy-revised/

Appendix F: Parenting Styles

Parenting Styles

Permissive Parents:

- These parents are much more responsive than they are demanding.
- These parents are lenient and do not require mature behavior.
- These parents allow considerable self-regulation in order to avoid confrontation.

Authoritarian Parents:

- These parents are very demanding and highly directive, but not responsive.
- These parents generally expect their children to obey and follow rules without any explanation.
- These parents provide an orderly and structured environment that features clearly stated rules.

Authoritative Parents:

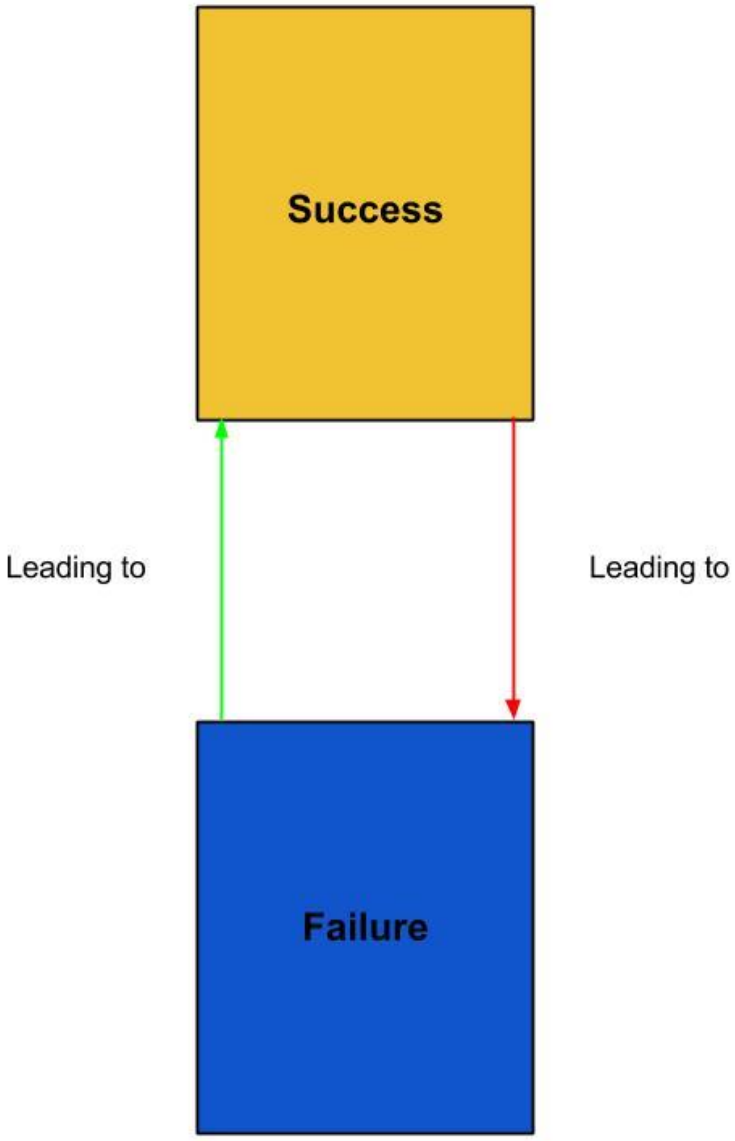
- These parents are both demanding and responsive.
- These parents monitor their children and impart clear standards and rules for their conduct.
- While these parents are assertive, they are not restrictive or intrusive.
- These parents expect their children to be assertive, socially responsible, self-regulated and cooperative.

Uninvolved Parents:

- These parents are neither demanding or responsive.
- In extreme situations, these parents might even reject or neglect their children.

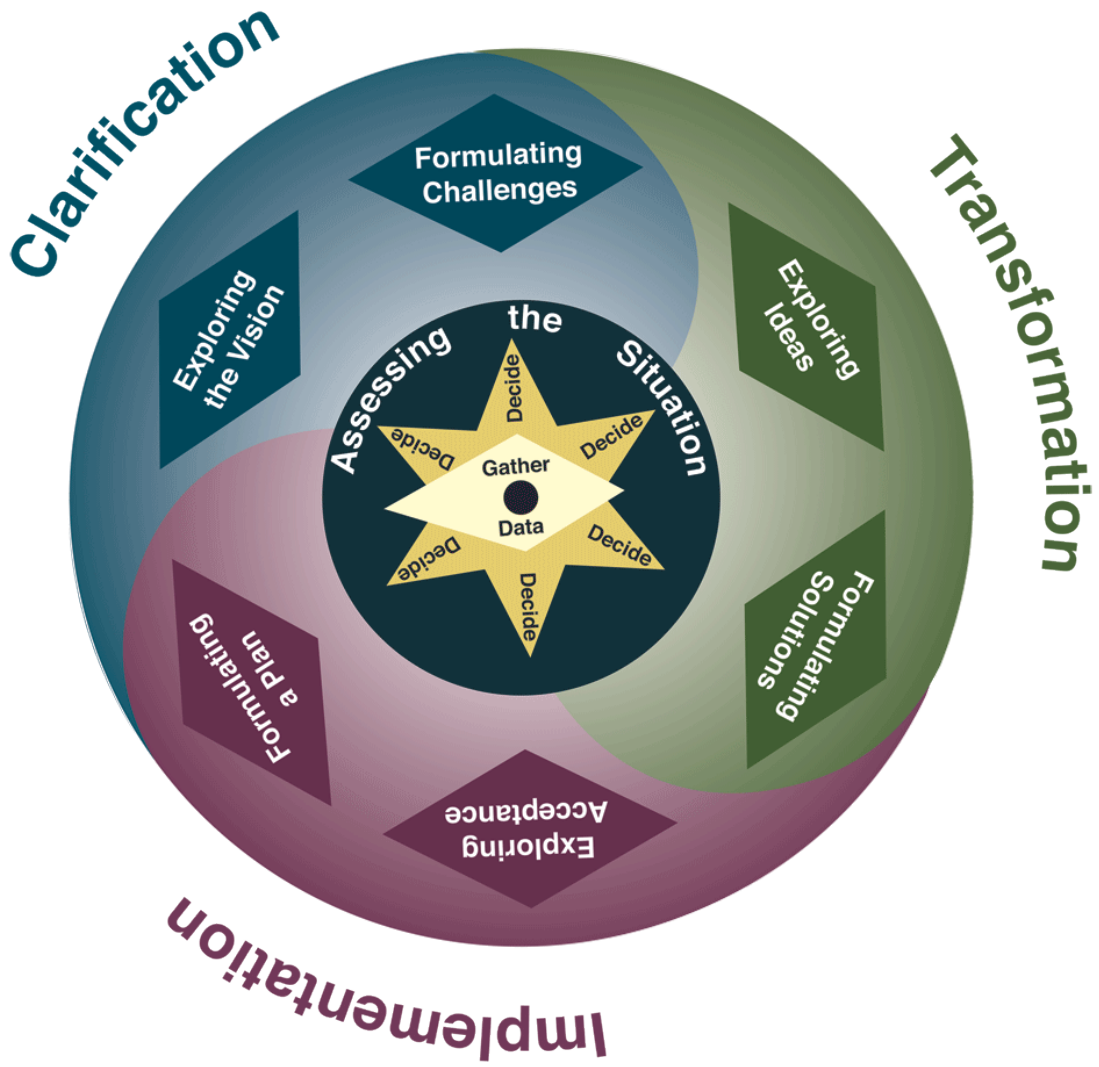
Baumrind, D. (1991). The Influence of Parenting Style on Adolescent Competence and Substance Use. *Journal of Early Adolescents*, 11(1), 56-95.

Appendix G: The Balance between Failure and Success



This diagram illustrates a cycle between failure and success. It is inevitable that failure will lead to success and success will lead to failure. This diagram represents the constant need for improvement, progress and risk taking. It is important to note that a lack of failure indicates a lack in risk taking. Not taking any risks will likely result in little to no success.

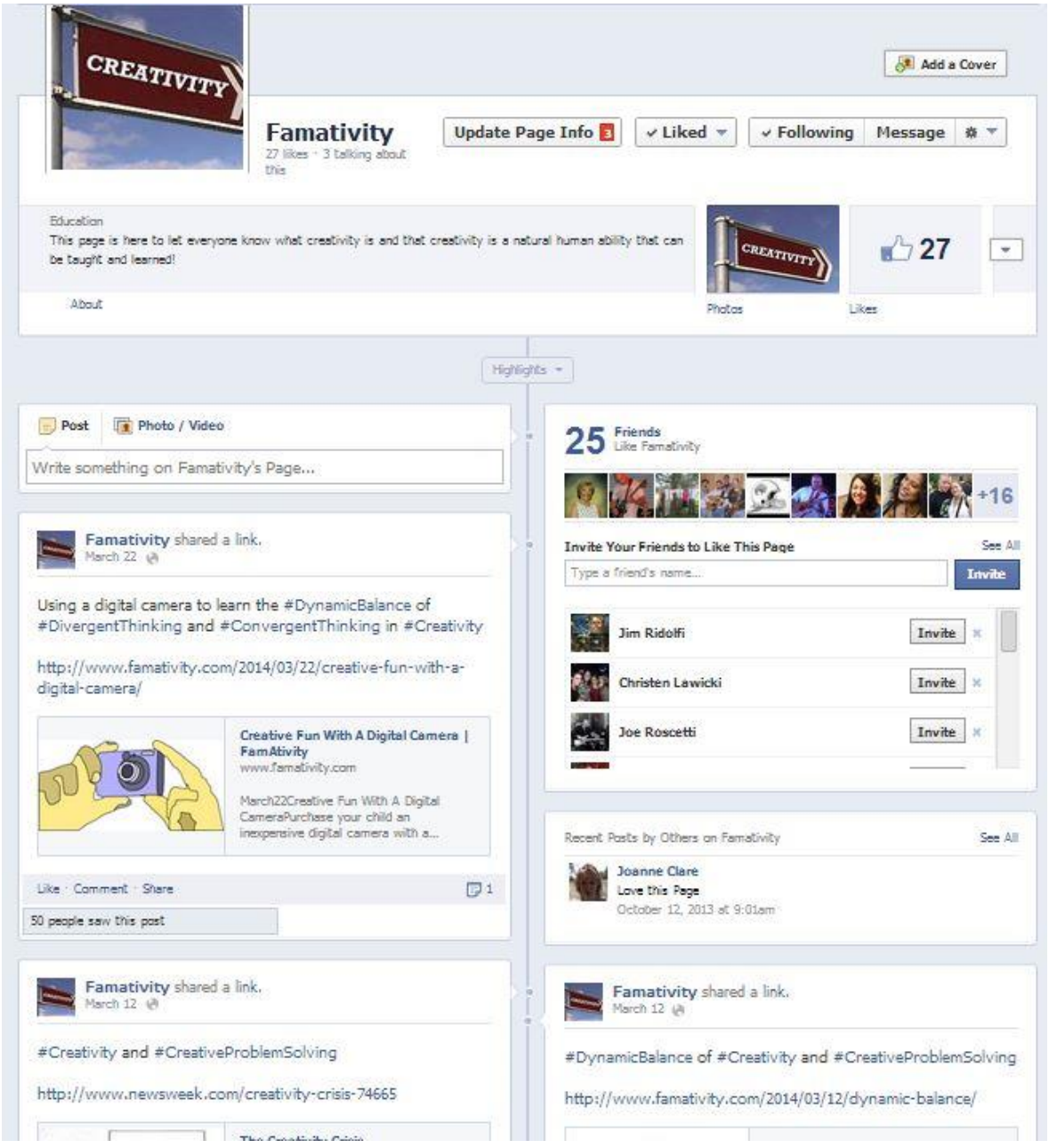
Appendix H: The Thinking Skills Model



Puccio, G. J., Mance, M., Murdock, M. (2011). *Creative Leadership: Skills that Drive Change*. 2nd ed. Thousand Oakes, CA: Sage.

Appendix I: Microblogging and its Role as a Gateway to a Blog

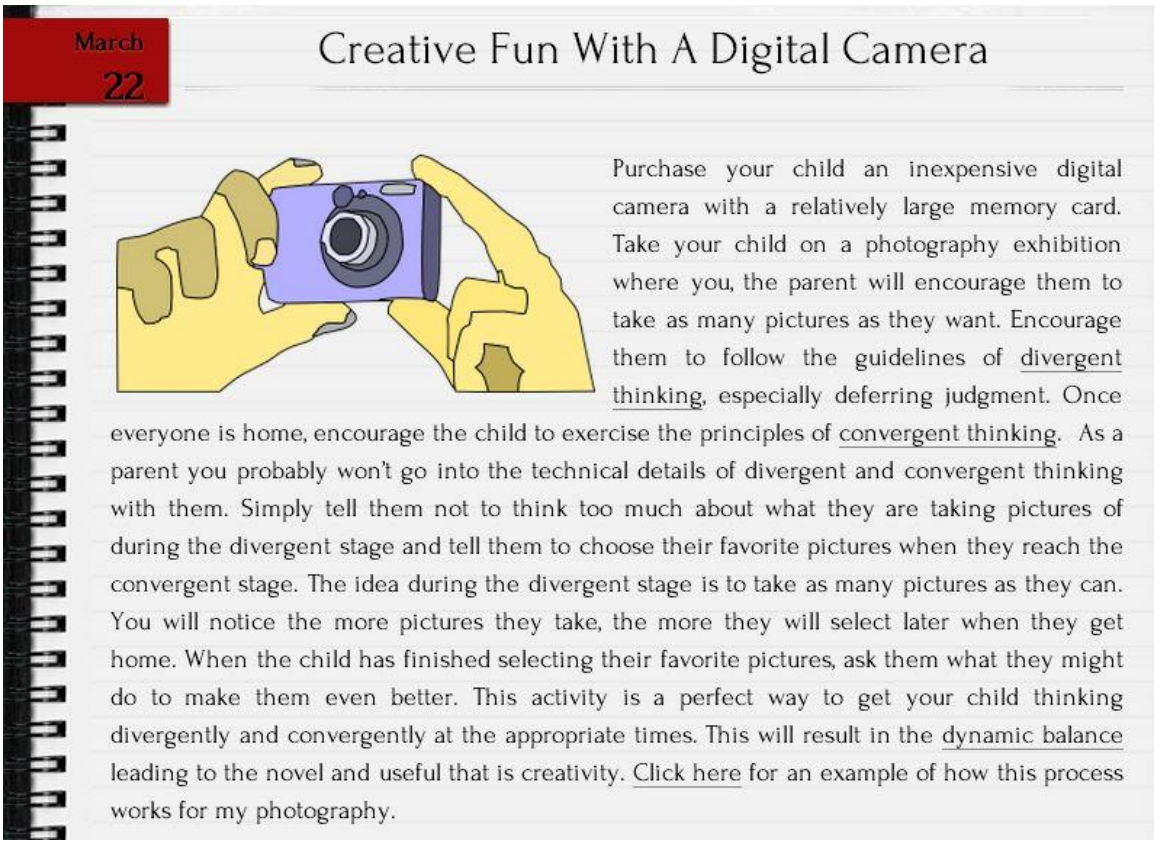
1.) Famativity's Facebook Page:



2.) A Facebook Link to the Blog:

- Facebook users can click the link to review the blog entry that has been shared.
- Facebook users can like, comment on or share the Facebook link to their timeline for others to see.

3.) When a Facebook user clicks on the link it takes them directly to the shared blog entry.



March
22

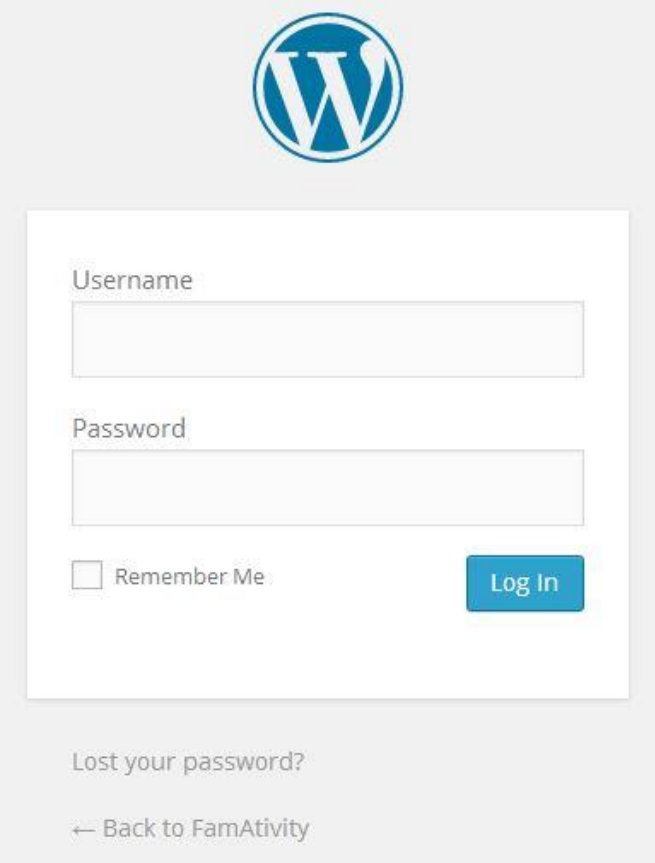
Creative Fun With A Digital Camera

Purchase your child an inexpensive digital camera with a relatively large memory card. Take your child on a photography exhibition where you, the parent will encourage them to take as many pictures as they want. Encourage them to follow the guidelines of divergent thinking, especially deferring judgment. Once everyone is home, encourage the child to exercise the principles of convergent thinking. As a parent you probably won't go into the technical details of divergent and convergent thinking with them. Simply tell them not to think too much about what they are taking pictures of during the divergent stage and tell them to choose their favorite pictures when they reach the convergent stage. The idea during the divergent stage is to take as many pictures as they can. You will notice the more pictures they take, the more they will select later when they get home. When the child has finished selecting their favorite pictures, ask them what they might do to make them even better. This activity is a perfect way to get your child thinking divergently and convergently at the appropriate times. This will result in the dynamic balance leading to the novel and useful that is creativity. Click here for an example of how this process works for my photography.

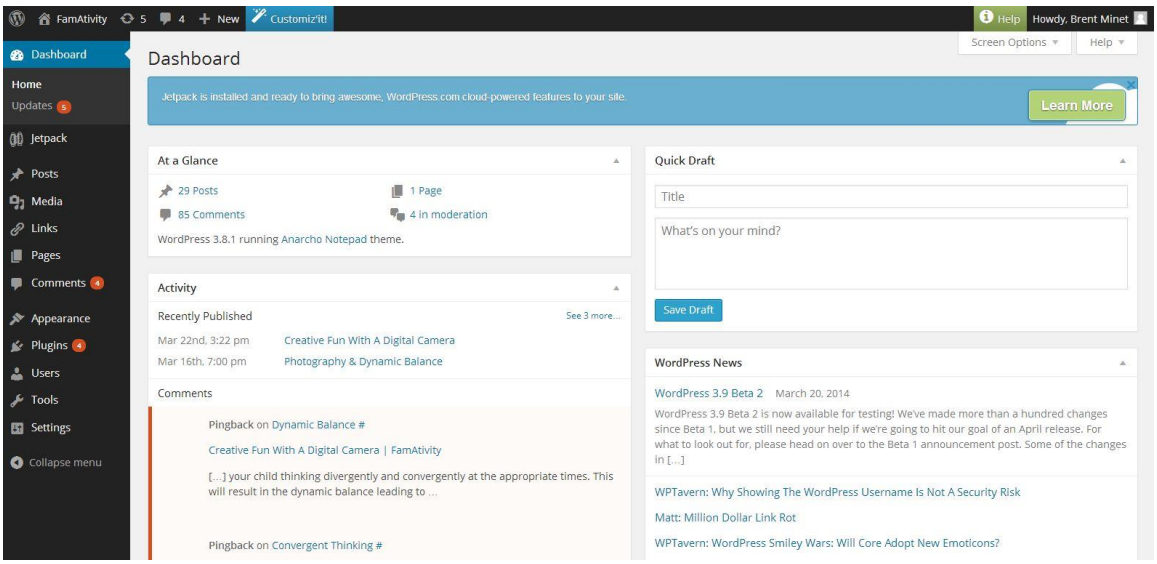
These screenshots illustrate how microblogging platforms like Facebook and Twitter can help promote a blog or website.

Appendix J: The Wordpress.org Blogging Platform and User Interface

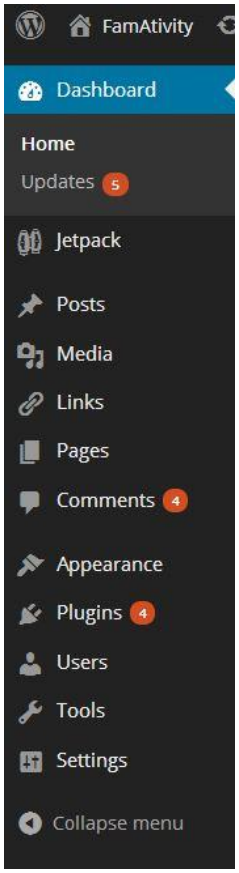
1.) Wordpress.org Administrator Login Screen:



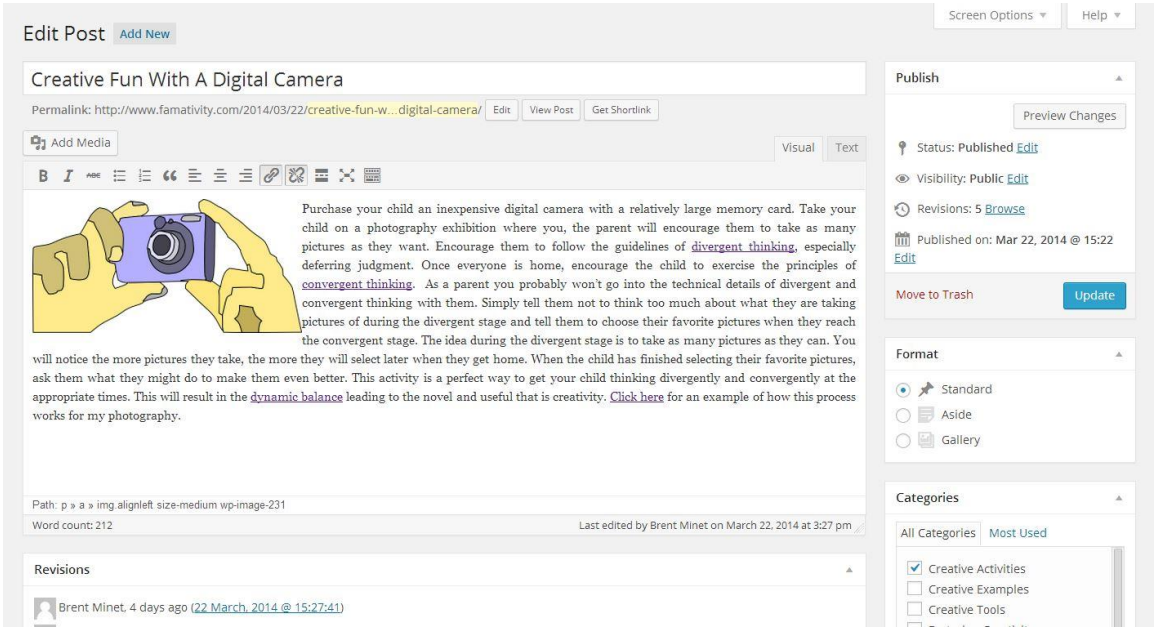
2.) Wordpress.org Administrator Dashboard:

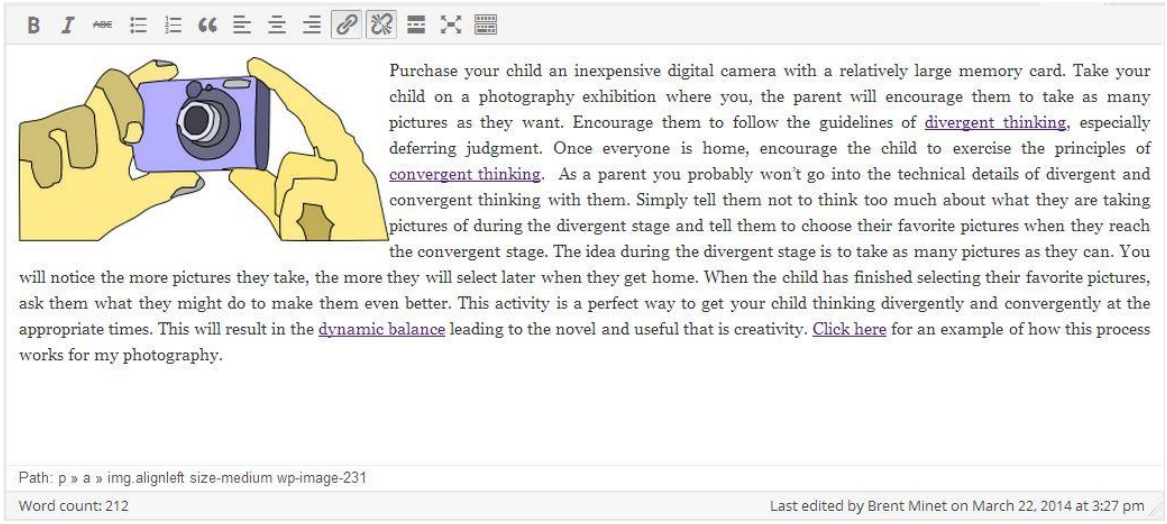


3.) Wordpress.org Tools Bar:



4.) Wordpress.org Blog Post Editor (Overview, Visual Editor and HTML Text Editor):





Purchase your child an inexpensive digital camera with a relatively large memory card. Take your child on a photography exhibition where you, the parent will encourage them to take as many pictures as they want. Encourage them to follow the guidelines of divergent thinking, especially deferring judgment. Once everyone is home, encourage the child to exercise the principles of convergent thinking. As a parent you probably won't go into the technical details of divergent and convergent thinking with them. Simply tell them not to think too much about what they are taking pictures of during the divergent stage and tell them to choose their favorite pictures when they reach the convergent stage. The idea during the divergent stage is to take as many pictures as they can. You will notice the more pictures they take, the more they will select later when they get home. When the child has finished selecting their favorite pictures, ask them what they might do to make them even better. This activity is a perfect way to get your child thinking divergently and convergently at the appropriate times. This will result in the dynamic balance leading to the novel and useful that is creativity. Click here for an example of how this process works for my photography.

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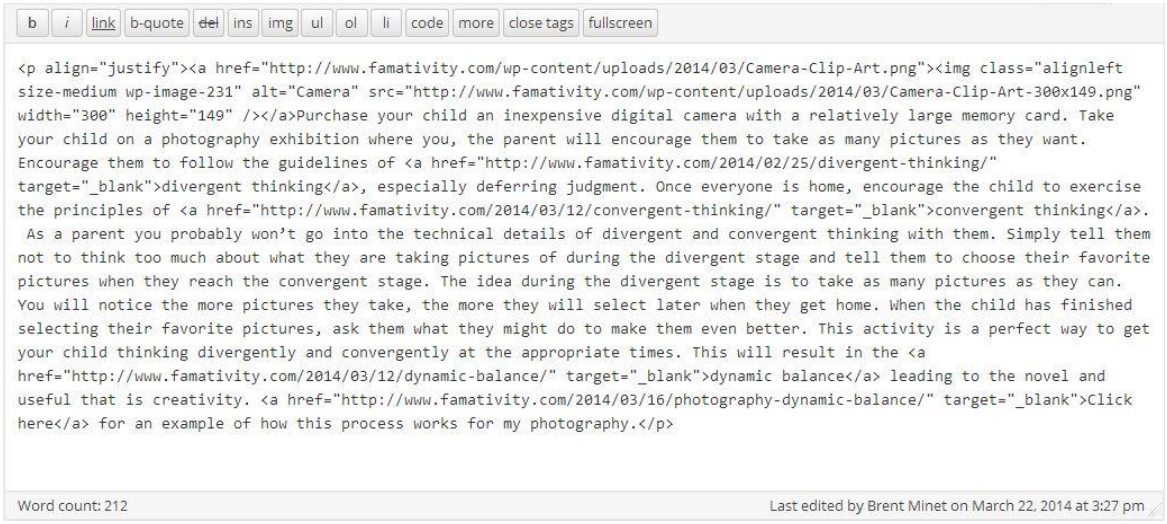
Word count: 212 Last edited by Brent Minet on March 22, 2014 at 3:27 pm



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<p align="justify"><a href="http://www.famativity.com/wp-content/uploads/2014/03/Camera-Clip-Art.png"><img class="alignleft
size-medium wp-image-231" alt="Camera" src="http://www.famativity.com/wp-content/uploads/2014/03/Camera-Clip-Art-300x149.png"
width="300" height="149" /></a>Purchase your child an inexpensive digital camera with a relatively large memory card. Take
your child on a photography exhibition where you, the parent will encourage them to take as many pictures as they want.
Encourage them to follow the guidelines of <a href="http://www.famativity.com/2014/02/25/divergent-thinking/"
target="_blank">divergent thinking</a>, especially deferring judgment. Once everyone is home, encourage the child to exercise
the principles of <a href="http://www.famativity.com/2014/03/12/convergent-thinking/" target="_blank">convergent thinking</a>.
 As a parent you probably won't go into the technical details of divergent and convergent thinking with them. Simply tell them
not to think too much about what they are taking pictures of during the divergent stage and tell them to choose their favorite
pictures when they reach the convergent stage. The idea during the divergent stage is to take as many pictures as they can.
You will notice the more pictures they take, the more they will select later when they get home. When the child has finished
selecting their favorite pictures, ask them what they might do to make them even better. This activity is a perfect way to get
your child thinking divergently and convergently at the appropriate times. This will result in the <a
href="http://www.famativity.com/2014/03/12/dynamic-balance/" target="_blank">dynamic balance</a> leading to the novel and
useful that is creativity. <a href="http://www.famativity.com/2014/03/16/photography-dynamic-balance/" target="_blank">Click
here</a> for an example of how this process works for my photography.</p>
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Word count: 212 Last edited by Brent Minet on March 22, 2014 at 3:27 pm

These screenshots illustrate the process of blogging with wordpress.org. These graphics show the sequential process of blogging from logging into the user interface all the way to publishing your entries to the World Wide Web.

Appendix K: Teaching Parents about Creativity

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4

Creativity?

Creativity is a fairly new area of research. Creativity research got its start in 1950 when J. P. Guilford began serving as president of the American Psychological Association. J. P. Guilford shared his passion and desire for learning more about creativity during his presidential address in 1950. He saw a need for humankind to learn more about creativity and whether or not it could be taught and / or learned.

Since the birth of creativity research in 1950 many scholars have researched and written about the topic. Many researchers have come up with many varying definitions. Defining creativity has been a daunting tasks. There are probably more definitions than there are researchers in the field. The one definition that most of the researchers in the field have settled on and agreed to is that creativity is novel and useful.

Mel Rhodes (1961) in *An Analysis of Creativity* proposes that creativity may not be a word that can be defined in a short and simple manner, but in fact, may require a definition that is far more involved than simply novel and useful. Mel Rhodes spent five years developing his definition which led to defining creativity in multiple dimensions. Rhodes' definition of creativity encompasses the creative *person*, the creative *process*, the creative *product* and the *press* which is the environment that creativity takes place in.

The creative person is the individual or the group of people carrying out the creative work. It is believed that personality traits, intellect, behavior, values and all other traits that make up an individual or group of individuals defines this aspect of creativity. The creative process is the creative work that is carried out by the individual or group. The creative process demands thinking, motivation, perception and communication. All of this hard work results in the creative product which is the idea and / or new concept. The creative product is the novel and useful in creativity. It is assumed that creativity does not take place in a vacuum. The creative process is carried out by a creative person that resides within an environment and creates a product of some kind within the same environment.

In order to correctly define creativity we must understand that creativity describes a person or people who engage in a creative process that leads to a creative product that will or will not gain acceptance from the press. One can not begin to fully understand creativity without first understanding these four elements that make it up. Creativity is all of these things.

http://www.famativity.com/2013/10/04/creativity-2/

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5

Wasted Time

Is creativity being killed in the United States of America? If so, what is killing it? There are probably many culprits, some of which may include television, video games, "teaching to the test" in schools and technology such as computers, the internet and cell phones. In order to understand what the root cause of the decline in creativity in this country is, I propose that we take all of the culprits that I have listed above and any others that you may be able to think of and consider what they all have in common. Got it yet? The common denominator between all of the culprits that we consider to be destructive to creativity is time.

Computers, cellular phones, video games and television are not what is ruining creativity. All of these devices are very useful and have the potential to stimulate creativity. What is killing creativity in this country is the wasted time resulting from the inability of people to turn these devices off.

While all of these technological devices can serve productive purposes, they can be destructive when overused. In his book *"The Shallows: What the Internet is Doing to Our Brains"* Nicholas Carr discusses how our societies 24 hour a day, seven day a week connection to the internet is not healthy. The constant searching on the internet keeps our neurons firing endlessly. Not only is it distracting, but it can be mentally exhausting too.

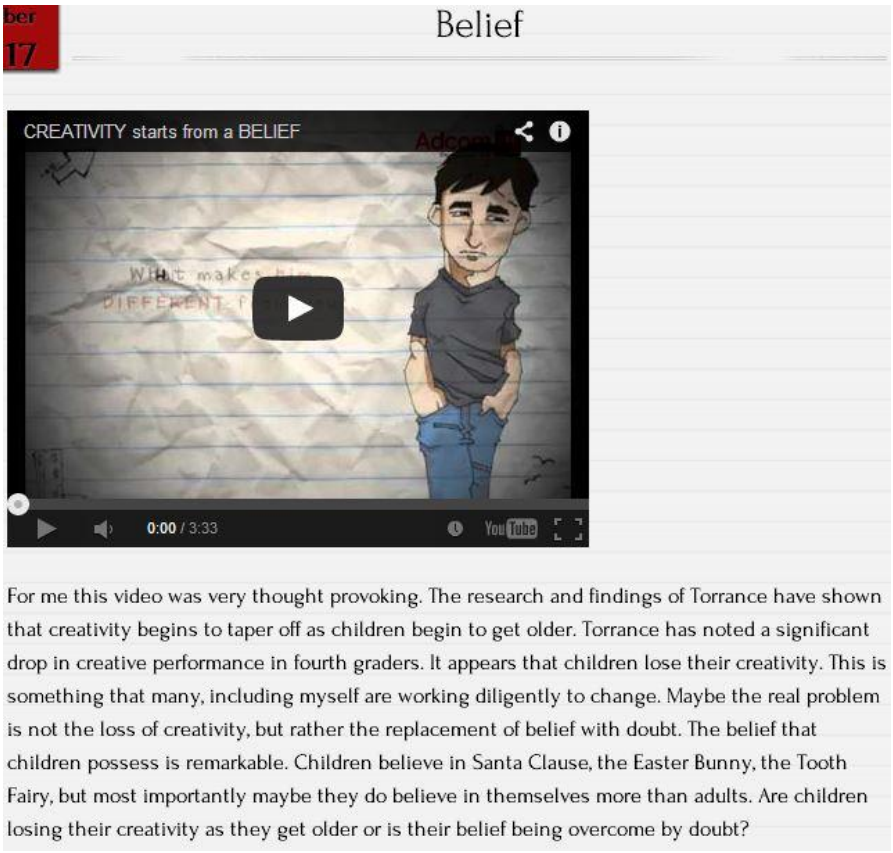
"When it comes to the firing of our neurons, it is a mistake to assume more is better." ~ Nicholas Carr

The wasting of time does not only result from the use of technology. Time wasting can result from endless distracting factors. Derell (1963) discusses a 12 year old boy who complains about distraction preventing him from accomplishing the things that he wanted to accomplish. While his distraction was not an incoming text from his best friend, but rather his parents reaction to what he was doing, it is still the same concept. Distractions have been killing creativity since the beginning of time.

Take some time and turn off the distractions in your life, whatever they may be. Allow yourself some time to be creative!

http://www.famativity.com/2013/10/05/wasted-time/

Appendix L: Blog Posts Intended for Development of the Parents Creativity and their Children's Creativity



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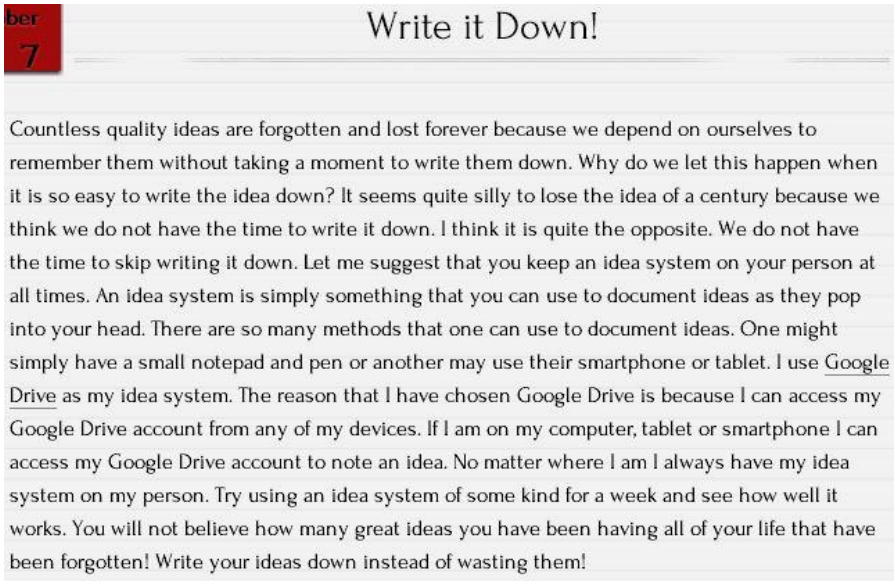
17

Belief

For me this video was very thought provoking. The research and findings of Torrance have shown that creativity begins to taper off as children begin to get older. Torrance has noted a significant drop in creative performance in fourth graders. It appears that children lose their creativity. This is something that many, including myself are working diligently to change. Maybe the real problem is not the loss of creativity, but rather the replacement of belief with doubt. The belief that children possess is remarkable. Children believe in Santa Clause, the Easter Bunny, the Tooth Fairy, but most importantly maybe they do believe in themselves more than adults. Are children losing their creativity as they get older or is their belief being overcome by doubt?

http://www.famativity.com/2013/10/17/belief/



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7

Write it Down!

Countless quality ideas are forgotten and lost forever because we depend on ourselves to remember them without taking a moment to write them down. Why do we let this happen when it is so easy to write the idea down? It seems quite silly to lose the idea of a century because we think we do not have the time to write it down. I think it is quite the opposite. We do not have the time to skip writing it down. Let me suggest that you keep an idea system on your person at all times. An idea system is simply something that you can use to document ideas as they pop into your head. There are so many methods that one can use to document ideas. One might simply have a small notepad and pen or another may use their smartphone or tablet. I use Google Drive as my idea system. The reason that I have chosen Google Drive is because I can access my Google Drive account from any of my devices. If I am on my computer, tablet or smartphone I can access my Google Drive account to note an idea. No matter where I am I always have my idea system on my person. Try using an idea system of some kind for a week and see how well it works. You will not believe how many great ideas you have been having all of your life that have been forgotten! Write your ideas down instead of wasting them!

http://www.famativity.com/2013/10/07/write-it-down/

ber
28

Don't Quit!

One of the most important parts of being creative is to never quit. You are not going to be happy with every idea that you generate. The single most important characteristic of creative people is their zeal. The most creative people in the world remain devoted to their work and do not give up. Continuing to work hard without giving up will always pay off. Even if you have been working hard on something for a long time that does not seem to be going anywhere, keep working. Taking breaks is always a good idea, but simply quitting is never an acceptable option. Prior to successfully inventing the electric lightbulb, Einstein was asked by a reporter if he felt like a failure. Perplexed by the reporter's question, Einstein answered by saying that he has learned over 9,000 ways in which an Electric light bulb will not work. He boldly stated that success was within his grasp and soon after that with over 10,000 attempts he successfully invented the first working electric lightbulb. There is something to be said about this kind of discipline. Einstein never gave up and that is why we do not have to use candles as a light source in the home. Every time you have an idea that does not work, understand that it is not a failure. Sometimes, in order to discover what does work, we have to first discover what does not work.

http://www.famativity.com/2013/10/28/dont-quit/

ber
12

Find Creativity In Everyday Experiences

One of the most important things that a teacher or parent can do is to weave creativity and creative activities into everyday life experiences. Unfortunately, there is not a one size fits all method to do this and it requires some creativity on the part of the parent. The fact that doing this requires creativity on the part of the parent is the most important reason for doing this. Children will know when the adult is being creative and one of the best ways to teach and foster creativity in a child is to model it. Whether the kids are doing chores, homework or playing try to help make these daily occurrences creative experiences. If you are at a restaurant waiting to be served your meal have some crayons with you so the kids can color and draw. Encourage them to draw bizarre things, like what a restaurant on the planet mars would be like. Get them away from drawing,making and doing everyday things. Encourage them to reach out of the box, by you yourself reaching out of the box.

http://www.famativity.com/2013/10/12/find-creativity-in-everyday-experiences/

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9

Time

It's time to slow down and take a breather. Whether it be at home, in the classroom or in the workplace time pressure is an enemy to creative behavior. As a music teacher, I see this first hand. My students will commonly generate higher quality products over the course of several music classes than they will in one or two music classes. Our brains simply need more time to juggle the challenge in order to generate the "novel and useful" which defines the creative product. If we do not provide enough time for creativity, we can forget the "novel and useful" and welcome the "familiar and incapable". If you are looking to stimulate your creativity, your students creativity or you own children's creativity, time is a great place to start!

http://www.famativity.com/2013/10/09/time/

ber
11

What Is It?

I am going to start by coming right out and saying it... The worse question that a parent or teacher can ask a child is...

WHAT IS IT?

When a child approaches an adult to show them a creative product, whether it be a painting, drawing or something that they built do not ask them what it is. The most important thing that an adult can do is reflect the same enthusiasm that the child has for their achievement. Thank the child for showing you or sharing their creative product with you, compliment them by telling them things that you like about their work and ask them questions about their work as long as you aren't asking them what it is.

Some of the questions that an adult might ask:

- How did you come up with this idea?
- I really like what you did here, how did you do it?
- What were you thinking about when you drew, made or painted this?

There are an infinite amount of questions that a parent or teacher can ask that will encourage children to communicate about their work or better yet make more. There are two reasons that it is a bad idea to ask the child what it is. The first is that the child may not know what it is. The child might be experimenting with a colored pencil for the first time, maybe they wanted to try holding a crayon a different way or maybe they were just experimenting with some different color combinations. Secondly, the child may have intended for it to be something and if you can not tell what it is they may decide not to share with you again or worse yet, quit.

If we want creativity to prevail throughout our childrens lives and not die off as they approach adulthood we have to do everything that we can to avoid shutting it off at an early age. The most important thing that a teacher or parent can do is encourage creativity and compliment their creative products.

http://www.famativity.com/2013/10/11/what-is-it/

Appendix M: Creativity Nurturing Activities that can be enjoyed by the Entire Family

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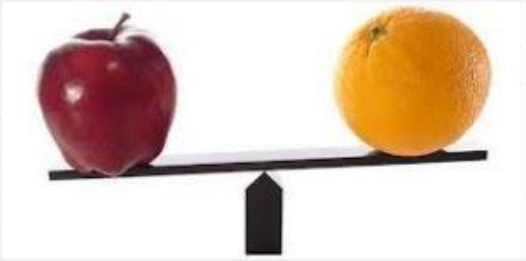
21

Apples & Oranges



Take a minute to show your child, family or class an apple and an orange. After looking at the outside of the apple and the orange, cut them both in half and look at the inside of them. After you have looked the apple and the orange over, both inside and out, eat them so that you can observe the textures and the tastes. This would be a great activity to do during a snack time for your family and of course, during snack time in school. Together as a group make a list of as many similarities between the apple and the orange as you can. You will find yourselves listing similarities such as *"they both have skin or a peel"* and *"they both have seeds"* early in the activity. The object of this activity is to reach beyond those basic similarities in search of more unique similarities. Try to list ten similarities for each member of the family. You will be amazed to see how many similarities apples and oranges actually have. One member of the family should be the recording secretary. Everyone should call out their similarities as they pop in their head and the recording secretary will write them down. When your list is complete, have a discussion about what you all came up with.

http://www.famativity.com/2013/10/21/apples-oranges/

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6

Assumption Busting

Assumption Busting is a creative tool that anybody can start using today. Even if you do not think that you are creative, you have to give this a try. Try it with your family, especially your children. First, choose an object. Take one of your children's toys, a household cleaning device or even a toothbrush. Second, forget about the purpose that this device was developed to serve. Third, choose a family member to be a recording secretary. As a family come up with ideas for other purposes that this device might be able to serve. Reach for the stars because wild and crazy are welcome. See how many ideas you can come up with collaboratively. the more ideas that are generated, the better. You will be amazed at how many different uses you can come up with for that one object. Assumptions are barriers that block creativity. You will be amazed at how creative you can be by simply dropping all assumptions.

http://www.famativity.com/2013/10/06/assumption-busting/

ber 16

Building On A Favorite Song

Take a minute and listen to you child's favorite song with them. When you are finished listening to the song have a conversation about it. After you have discussed what the song is about, what style of music it is and anything else that you want to discuss listen to the song one more time. After the second listening take one piece of paper and a pencil for each of you and begin writing your own verses to the song. Your child should write one and you, the parent should write one as well. This is a great opportunity for you and your child to be creative together. when you are finished share your new verses for the song with each other. If you are able, you should both try to sing your new verses for each other. It is imperative that the parent writes a verse too because modeling creativity is the most effective way to teach, encourage and foster creativity.

http://www.famativity.com/2013/10/16/building-on-a-favorite-song/

ber 2

Junk Sculptures

Sit at the dining room table with your child as they build a junk sculpture. A junk sculpture is something that you make out of random things that you might have in the house. Look around your house for things that might not commonly be used for making things and give them to your kids so that they can create or invent something using them. Some of the household objects that you might consider giving children for a junk sculpture might include Q-Tips, cotton balls, rubber bands, string, tape, straws, paper cups, paper plates, plastic silverware, band-aids and pretty much anything else that you want to give them. Give them as much time as they need as you do not want to stifle their creativity by setting time limits. When they are done and it is time for them to show you their creation and talk about it, be certain that you display the same enthusiasm that they are for their creative product. Feel free to ask them questions as a way of showing your interest.

http://www.famativity.com/2013/11/02/junk-sculptures/

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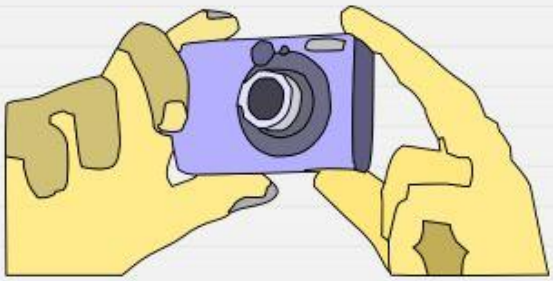
22

Creative Fun With A Digital Camera



Purchase your child an inexpensive digital camera with a relatively large memory card. Take your child on a photography exhibition where you, the parent will encourage them to take as many pictures as they want. Encourage them to follow the guidelines of divergent thinking, especially deferring judgment. Once everyone is home, encourage the child to exercise the principles of convergent thinking. As a parent you probably won't go into the technical details of divergent and convergent thinking with them. Simply tell them not to think too much about what they are taking pictures of during the divergent stage and tell them to choose their favorite pictures when they reach the convergent stage. The idea during the divergent stage is to take as many pictures as they can. You will notice the more pictures they take, the more they will select later when they get home. When the child has finished selecting their favorite pictures, ask them what they might do to make them even better. This activity is a perfect way to get your child thinking divergently and convergently at the appropriate times. This will result in the dynamic balance leading to the novel and useful that is creativity. Click here for an example of how this process works for my photography.

http://www.famativity.com/2014/03/22/creative-fun-with-a-digital-camera/

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Story ReCreativity

One way to develop creativity or provide a creative experience for children is to encourage them to act out a story. Read a story to or with your child and then allow them to act out the story. Do not set any limitations on their freedom. Let their creativity run uncontrollably. Sometimes, they may act the story out as it really is and other times they might add some of their own creative expression resulting in something completely different or new. Accept the different and new with an open mind and heart as that is what creativity is all about.

http://www.famativity.com/2013/10/11/story-recreativity/

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Circular Stories

The next time you are at the dinner table or traveling in the car as a family and you are having trouble getting a conversation going, try this. Create a story together as a family by taking turns adding a sentence to the story. Each family member will add a sentence to the story one at a time. The idea is to smoothly pick up the story where the last family member left off. There is no limit as to how many turns each person should take because you can make the story as long as you want. The parents may find themselves starting the stories for the first few times, but make sure you let the children have a chance to start the stories every now and again too.

Example:

Once upon a time there was a frog.

The frog was green and loved hanging out in the pond.

One day the frog decided not to go to the pond.

Instead, he decided to go to the beach.

You would continue this activity until the story is over. You can go around the rotation as many times as you want to or need to. Always be accepting of all family members contributions. There is never a wrong answer!

http://www.famativity.com/2013/10/08/circular-stories/

Appendix N: Other Types of Blog Entries

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Curiosity

"Curiosity about life in all of its aspects, I think, is still the secret of great creative people"

- Leo Burnett

"Curiosity about life in all of its aspects, I think, is still the secret of great creative people" ~ Leo Burnett

This is so true. Watch and listen to a young child. They constantly ask questions. Sometimes they ask so many questions that the parents get sick of answering them. I would like to encourage you to continue answering those questions and encourage this behavior by also asking questions. Questions are the way in which we express our curiosity. When a child stops asking questions it is only because they've lost their curiosity. If parents and teachers would welcome the questions of children we might be able to foster and maintain their level of curiosity which would lead to extraordinary creativity. Parents and teachers should not only be welcoming the questions of children but they too, should be asking questions in order to show that they also have a high level of curiosity. Children learn from adult modeling. If an adult can show their curiosity, children will be more likely to continue showing theirs. There is **NO** such thing as a silly question. Please do not disregard a child's question based on an assumption that you hold. The most amazing innovations in our society have resulted from asking questions, questions that many people at the time probably thought were foolish. Take a moment and think about how these "senseless" questions have changed our lives and made them more convenient. It is time to start breaking assumptions!

http://www.famativity.com/2013/10/15/curiosity/

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If We Will

"I submit that creativity will never be a science. In fact, much of it will always remain a mystery, as much of a mystery as what makes our heart tick. At the same time I submit that creativity is an art, an applied art, a teachable art, a learnable art, an art in which all of us can make ourselves more and more proficient, if we will." ~ Alex Osborn

http://www.famativity.com/2013/10/03/if-we-will/

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Jump or Tie

I had to share this because I thought this was an extremely creative solution to a parent's biggest challenge. Every parent knows what a pain it is to teach their children how to tie their shoes. Teaching a child how to tie their shoes with a shoelace is very challenging because of it's size. Children that are as young as four and five years old have not yet developed the fine motor skills needed to tie a shoelace. Using a jump rope to teach them how to tie their shoes allows them to see a bigger version of what they are working on and use more of their body in the process which makes it more likely that they will remember what they have learned. Most importantly, we are not forcing the children to do something that is beyond the ability of their fine motor skills. Practice tying the jump rope as if it is a shoelace everyday. When he or she is ready to work with a shoelace, the transition will be very easy for them.

http://www.famativity.com/2013/11/21/jump-or-tie/

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Why Not?

You see things; and you say, 'why?' But I dream things that never were; and I say, 'why not?' ~ George Bernard Shaw

This is the question that we have to train ourselves, our children and our students to begin asking. We need to ask ourselves why not? So many dreams stop at the dream itself. People come up with incredible ideas all day long every day. All of us are inventors, builders, writers and artists who simply don't follow through. We need to move past our dreams with action in order to make them happen. Any dream can be made a reality when it is united with action, planning, passion and hard work.

http://www.famativity.com/2013/10/30/why-not/

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The Phonograph

In a recent visit to the *Van Horn Mansion* in Burt, New York I had the opportunity to see many interesting objects. One of these objects that I was able to see and experience was the *Edison Standard Phonograph*. Despite it's scratchy low quality sound, it was still incredible to be able to see and experience the beginning of recorded sound with the understanding of it's evolution to what it currently is. Up until this point, I never understood how quintessential Edison's innovations where to our present day music and sound devices. After seeing the device work, it was so easy for me to understand that without this innovation we might not have ever had *records*, *eight track*, *cassette tapes*, *compact discs* or even *mp3 players*. Each and every one of these devices are based on Edison's technology in it's most basic form.

Edison introduced the first phonograph designed for recording and reproduction of sound recordings in 1877. Edison's original phonograph recorded on a metal cylinder that was wrapped with tinfoil. The vibration of a needle on fresh tinfoil would record sound by putting scratches on it. Sound recordings were played back by the needle brushing over the previously produced scratches. The one downfall with this device was that the tinfoil was only good for about four or five playbacks.

When Edison took a break from further developing the phonograph so that he could complete his work on the invention of the electric light bulb, Alexander Graham Bell made several improvements to Edison's phonograph. Of the most essential improvements are the use of a wax

http://www.famativity.com/2013/11/13/the-phonograph/

Appendix O: The Survey That Will Be Used to Gain User Feedback

User Feedback for Famativity.com

Name *(optional)*: _____ Date: _____

Please check one: ____ Parent ____ Teacher ____ Other

If other, please explain: _____

Please answer the following questions on a scale of 1 to 5.

On a scale of 1 to 5, 1 being the worst and 5 being the best, how would you rate the appearance of this website?	1 2 3 4 5
On a scale of 1 to 5, 1 being the worst and 5 being the best, how would you rate the quality of the content in this blog?	1 2 3 4 5
On a scale of 1 to 5, 1 being the worst and 5 being the best, how would you rate the navigation or "user friendlyness" of the blog?	1 2 3 4 5
On a scale of 1 to 5, 1 being the worst and 5 being the best, how much do you think this blog has helped nurture the creativity of yourself and your family?	1 2 3 4 5
On a scale of 1 to 5, 1 being the worst and 5 being the best, how likely would you be to recommend this blog to others?	1 2 3 4 5

What do you like most about this blog? _____
_____

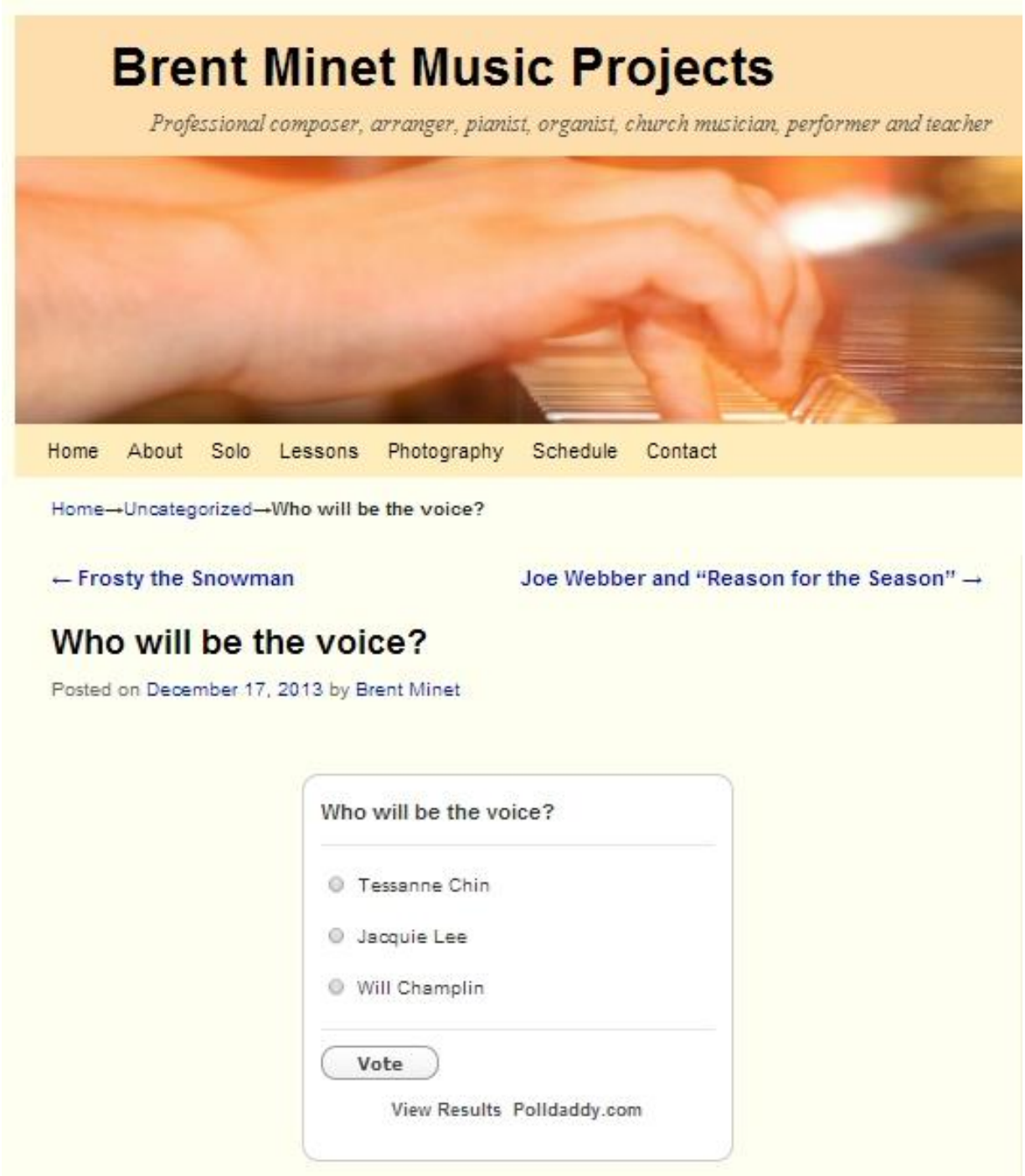
What would you like to see changed or done differently in this blog? _____
_____

What features do you think should be added to this blog? _____
_____

What was your favorite activity or blog post? _____

This is the form that has been developed in order to gain user feedback.

Appendix P: Example of A Poll Being Posted to A Blog



http://brentminet.com/2013/12/17/who-will-be-the-voice-2/

Appendix Q: Learning Styles

Learning Styles

Visual/Verbal Learners:
These individuals learn best when information is presented to them visually and in written form. These learners prefer visual aids such as posters, PowerPoint presentations and textbooks. These people often prefer to study by themselves in a quiet environment. In order to remember what they have learned, these people generally visualize things in their mind.

Visual/Nonverbal Learners:
These individuals learn best when things are presented visually in the format of a picture or design. While in the classroom, these learners often benefit from supplemental materials such as film, video presentations, diagrams and maps. These learners prefer to work and study alone in a quiet environment. Often when they try to remember something, they visualize a diagram, chart or picture of it. It is not unusual if these students are artistic.

Auditory/Verbal Learners:
These learners do best when information is presented aurally. While in the classroom, these learners generally prefer a lecture or group discussions. When they try to recall information, they often say it out loud allowing them to hear the way the information was presented to them.

Tactile/Kinesthetic Learners:
Engagement in physical activities is how these individuals learn best. When they are in the classroom, they prefer to learn in lab or hands on settings where they are able to touch and manipulate materials. Physically active environments that feature demonstrations, hands on learning experiences and field work outside of the classroom is what usually works best for these folks.

Illinois Online Network. (2010). Instructional Design: Learning Styles and the Online Environment. Retrieved April 11, 2014, from www.ion.uillinois.edu website: http://www.ion.uillinois.edu/resources/tutorials/id/learningStyles.asp