

1-2006

# Creativity in Musical Composition

R Broeker  
*Buffalo State College*

To learn more about the International Center for Studies in Creativity and its educational programs, research, and resources, go to <http://creativity.buffalostate.edu/>.

---

## Recommended Citation

Broeker, R, "Creativity in Musical Composition" (2006). *Creative Studies Graduate Student Master's Projects*. Paper 61.

Follow this and additional works at: <http://digitalcommons.buffalostate.edu/creativeprojects>



Part of the [Social and Behavioral Sciences Commons](#)

# **Chapter 1**

## **Statement of the problem**

Upon entering the creative studies program, I have slowly been incorporating creative tools and values into all aspects of my everyday life. The skill I have learned have helped me land a job, market a new product, and solve countless problems that have arisen in my day to day routines. There has, however, been one hobby of mine that I have not infused creativity directly into, and that is my music. It has eluded me exactly how to use the creative process in musical composition and document the results for future critiquing. I decided that I would answer that question with my masters' project. I would focus on the lyrical aspect of songwriting and not on the musical composition. The lyrics would be much easier to explain the process and resulted to people who are not trained in musical definitions and expressions. In this project, I will use the CPS process to help choose the best outline and word choice in order to create a song that will promote the Buffalo State Creative Studies Department and the creative process in general. Upon completion of this project, I will produce and record a creativity song that will be donated to the Creative Studies Department. The finished copy of the song will not be included in this project at completion due to the time constraints of recording and editing quality music. However, all the Creativity tools used in this project will be included in appendix C. Additional information on Creative Environment will be included in appendix A. I feel that the data I collect from this project will benefit me greatly in future songwriting endeavors and also serve as a springboard for other writers who are interested in incorporating the CPS process. I will also include several creativity tools that I have used throughout this project in the hopes that other songwriters will use or adapt these tools for their own creative gains.

## **Chapter 2**

### **Review of Related Literature**

To truly begin to understand the theories and applications of Creativity in Music Composition, one must look at several different factors that affect the creation of music. First, the creative process of music composition must be examined on the basis of the four P's- Product, Person, Process, and Press (Rhodes, 1961). These four P's greatly impact every aspect in the development of music composition. The second factor is the core cognitive theory of creativity in music composition. To understand how creativity works, you must have a clearer understanding of the psychological aspects, which support creativity in musical composition. The last factor takes a look at creativity as an effective learning instrument. Like any good learning tool, creativity should be infused into every lesson and become a part of everyday instruction. Exploring the connection between flow and creativity is essential to fully understand the educational aspects of music creativity. The research field of musical creativity is currently somewhat limited, but is a new and ever-expanding realm of creativity.

### **The Four P's and Quantitative Studies**

There are two kinds of methods for evaluating creativity in music composition: Quantitative or qualitative approaches, and the four P's of creativity. I focused on the four P's of creativity and personal experiences, but one must also understand what quantitative and qualitative studies are and how they are used since they so greatly affect the four P's. All studies use various ways to collect quantified data for creativity, such as: composition tests followed by evaluations of the compositions using pre-established criteria (Webster, 1979), the measurement of creativity in music as described by researchers (Baltzer, 1988), and recording the behaviors of students during the process of composing music (McPherson, 2000). Qualitative studies use: 1) interviews, 2) a sustained period of observations by music teachers in class (Carlin, 1999), 3) researchers' working with students composing music, and 4) examining their work from

several different criteria (Hickey, 1997).

### **Product**

The first and most popular method for measuring the creativity of a musical composition is by an expert's evaluation. The criteria that are used to evaluate these works usually are music-based such as observing the rhythm or tone of the work (Kratz, 1994) or based on Torrance's criteria of Fluency, Flexibility, Originality, and Syntax (Torrance, 1966). Is this the only way that creativity in music can really be assessed? In 1994, Simonton developed a new method of using computers to analyze the musical structures of compositions. He used computers to analyze the compositions of such artists as Beethoven and Mozart (Simonton, 1987, 1993). After conducting numerous studies of his own, a contemporary researcher named Myung-sook Auh concluded that the most popular western classical compositions tend to have medium levels of melodic originality. Auh (1999) emphasized that musically correct compositions, ones that follow the musical rules of rhythms and tones, are not necessarily musically creative. Davidson & Welsh's (1988) method differs in that the same question is given to all students and students are observed on how they solve the question. This method can be applied through simple creative tasks in music class. For example, a teacher could give the students a musical theme, and students are asked to make a composition with it. Thus, the teacher can compare how creatively the theme was used in student music compositions (Auh, 1999). These tests and evaluations are based on the final musical product produced by a composer.

### **Process**

According to Wallas (1926), the creative process is described as consisting of four stages: 1) Preparation 2) Incubation 3) Illumination, and 4) Verification. Wallas' stages are generally meant for everyday creativity but Kratz' (1989) four stages are specifically for composing music, as he identified them through analysis of the composition time used by primary school students. His stages describing the compositional process are 1) Exploration; 2)

Development; 3) Repetition; and 4) Silence (Kratus, 1989). Several studies conducted by such people as Davidson and Welsh (1988) found that professional and novice composers tend to use different song writing strategies. While armature composers use processes of filling in small details and piecing songs together, Professionals tend to lay out a song structure and then fill in details. Davidson and Welsh (1988) also found that professionals tend to reflect on their music before writing, keeping the general idea or theme the same, while armatures start composing with no end vision and the composition changes as it grows (Davidson and Welsh, 1988). Another difference between Professional and amateur composers is the use of vertical and horizontal song writing strategies. Professional musicians tend to lean towards vertical strategies, which mean they compose music by writing several instrumental parts at a time. Hobbyists and the average garage musician favor horizontal writing, which allows artists to write down one instrumental part at a time (Auh, 2003).

### **Person**

The Person factor has been investigated in several previous composition studies (Auh, 1995; Kratus, 1994) includes: 1) musical achievement; 2) musical aptitude; 3) informal musical experiences; 4) formal musical experiences; 5) music self-esteem; academic grades; 6) IQ; and 7) gender. Auh talked about the direct correlation between the success of a composer and the amount of creativity that that individual exudes in their work. Auh also found that informal musical experience was the best factor for predicting musical creativity in primary school students among the eight factors listed above. Interestingly, neither formal musical experience nor musical self-esteem was significantly related to musical creativity (Auh, 1999). In addition to musical achievement, thinking styles and personality traits have been studied in activities of improvisation. Impulsive and even reflective thinking styles were not significantly related to creativity in improvisation (Schmidt and Sinor, 1986). The use of visual imagery for creative discovery is outlined in Gruber's (1978, 1981) illustration of how Darwin came up with Evolutionary theory. Darwin used drawings of tree branches called "Tree of

Nature" to map out the evolutions of species. To stimulate visual imagery in composing music by high school students, some educators and researchers used graphic notations (Auh and Walker, 1999; Auh, 1999). When students were encouraged to think of musical ideas using a set of graphic patterns developed by Walker (1976, 1978), they came up with more creative compositions than those without using graphic notations.

### **Press**

There are four major environment factors that play a significant role in affecting creativity in composing music: 1) Home and the people closest to you, 2) School and local society, 3) Country and local politics, and 4) Culture and cultural values. The impact of press might be different depending on the individual, since every person absorbs and responds to environmental factors differently and at different rates. A leading proponent in the importance of Press in creativity is Csikszentmihalyi. He suggested that rather than asking, "what is creativity?", we should ask "*where* is creativity?" (Csikszentmihalyi, 1988). This leads one to believe that creative individuals can be assessed differently depending on where they are and what factors are around them. This is evident when looking at artists such as Bach and Van Gogh, who did not receive the praise and creative distinctions when they were alive. Their time and proper environment had not come yet. Cross-Cultural studies have shown different tendencies in methods and inspirations of music composition between Eastern and Western cultures. Studies of musical creativity of non-Western countries, such as India, China, Iran, and Yugoslavia (Campbell, 1990) show that: 1) much of the music created in these countries is based on improvisation 2) Musical training differs in non-Western countries due to their lack of concern with musical notation 3) Musicians of non-Western countries learn frameworks of various musical styles, which are fused together during improvising with the help of self-expressions.

## Psychological aspects

Much of the information concerning the psychological aspects of musical creativity was based on research done by Marcus Pearce and Geraint A. Wiggins. These two gentlemen based out of The City University of London have attempted to address two neglected issues in the computational modeling of music cognition. First, there has been relatively little work done that studies composition, not perception, as its focus. Second, the research, which does address cognitive issues in composition, has never properly addressed the question of creativity.

Psychological studies of compositions shed light on three types of constraints that may confront the composer and how to solve many of the problems which they might encounter (Sloboda, 1985): 1) “*stylistic constraints* loosely specified by the compositional type or genre. The artist has a vision of what they want the finished product to look like; 2) *internal constraints* generated by what has already been composed by an individual, following some principle of consistency or balance in order to produce a similar product; 3) *external constraints* such as the need to ensure that it is physically possible for a musician to play their part, principles of harmony and structure (which are set by musical elements or the musical genre)”. It also needs to produce a feeling which can be interpreted and understood by the intended audience.

From this reading, four main ideas emerged about how creativity can be measured in the minds of musical composers: 1) creativity is supported by the ability of the composer to simultaneously represent multiple features of the emerging composition and to move effortlessly between them during composition (Pearce & Wiggins, 2001); 2) creativity is supported by the ability of the composer to represent and process musical information in an orderly manner and to monitor more abstract levels of representation during composition (Pearce & Wiggins, 2001); 3) creativity is supported by the ability of the composer to transform, or adapt, their composition in order to create an appropriate degree of expectedness or surprise in their music. The feelings raised by this composition

must be consistent with the culture it is written in and be perceived by listeners in a manner that reflects previous works in the same genre (Pearce & Wiggins, 2001); and 4) creativity is supported by the ability of the composer to repeatedly transform their compositional mechanisms (as new compositions are added) in order to continue to generate original works (Pearce & Wiggins, 2001). As research continues in the field of cognitive creativity in music, researches become closer to developing a framework for an evaluation model of creativity in music composition. Much of the work by Pearce and Wiggins represents the initial stages of a research program that shows significant promise for advancing our understanding of the psychological mechanisms, which directly effect creativity in musical composition.

### **Creativity as a learning instrument**

It has long been argued that creativity is a type or subset of learning. As expressed by Guilford (1950) “*A creative act is an instance of learning...a comprehensive learning theory must take into account both insight and creative activity.*” (pg. 444)

Creativity was originally viewed as a “mystical process” with no scientific studies to lend credibility to the field. We now understand that every individual possesses the ability to be creative and each person exudes it at different levels. The first real model of creativity was done by Wallace in 1926 and featured four stages: “1) preparation; 2) incubation; 3) illumination; and 4) verification”. Torrance (1981) suggested that there is a direct relationship between learning and creativity. Both learning and creativity require the use of multiple perspectives as De Bono (1971) had stated with his lateral thinking theory. Music composition also requires the ability to think laterally and avoid the formation of rigid thought patterns. Music composition has long been linked to creativity, and researchers within the domain have conducted investigations pertaining to methods of enhancing creativity in music composition, particularly towards identifying factors influencing creativity in the classroom (Kratus, 1994). A factor that stands out from these studies is that children with no formal musical training tend to lack confidence in their musical abilities compared to students with formal training.

Formal training might have given students the upper hand in musical expertise and structuring their composition, but student with no training continually scored higher in terms of originality and musical exploration (Kratus, 1994).

Several other studies have been conducted to evaluate other influences that affect creativity in music composition. In a study conducted by Auh and Walker (1999), graphic notations were used to attempt to increase diverse compositional strategies as opposed to traditional notation. Another influencing factor of musical creativity that needs to be taken into account is collaboration with peers. Studies conducted with secondary school children collaborating on musical compositions were observed. The study focused on the interactions between one's self and others in music composing scenarios (Auh, 1999). Brand's research shows that children's compositions appear to be affected by several primary factors: 1) prior knowledge of musical concepts; 2) past life experiences; and 3) an imaginary world geared towards collecting ideas for composition (Brand, 2000). Children will still continue to compose music that is based on their limited experiences and those experiences will continually change over the years. This change brings many different ideas and influences together. It is this demographic of students that display the best relationship between creativity and learning that may be effectively studied.

### **Flow**

A significant relationship has been found and studied between Optimal Experience or *Flow* levels of students and the quality of their group compositions as measured by creativity ratings. There is continual literature emerging from the ideas of Flow as introduced by Csikszentmihalyi in the mid seventies (Csikszentmihalyi, 1975). Csikszentmihalyi (1992) describes nine components of enjoyment that many people experience when engaged in activities such as sports and hobbies, activities which ensure that there is no worry of failure and provide clear goals every step of the way. These activities must also provide feedback on the performance, which has to contain a balance between challenge and skill. Music educators are concerned with the idea of enabling students to become good thinkers and to be able to teach a set of transferable skills. The

task of composing must be designed in such a way as to provide potential for the following three conditions of Flow: 1) there are clear goals every step of the way; 2) there is instant feedback; and 3) there is a balance between challenge and skill. Studies by Boden (1990) point to the fact that if elements of Flow are present at the time of composition, a musician will create a more original piece of music.

# **Chapter 3**

## **Methods and Procedures**

### **Purpose**

The purpose of my project is to develop a song that features creativity as the theme and use the CPS process to complete this task.

### **Description**

I will attempt to use the CPS brainstorming process to create the ideas and details of the song. This process will include a facilitation session with several Creative Studies students. These students will be able to give insight and guidance as I pursue my end goal. Much of the information that will be discussed from the theoretical side of the project will be a conglomeration of articles and educational sources compiled throughout my graduate studies. The final product will be included on disk and submitted to the Creative Studies Department for use at their discretion.

### **Part 1: The Beginning Stages**

This project has been an ambition of mine for quite a few years, as I began researching musical creativity in the fall of 2004. This research process has been a labor of love and my driving force behind this project is my future desire to compile several musical presentations. These presentations would be geared at elementary school children and cover such topics as bullying and reading every day. The song would have to be original scores and include lyrics that specifically match the topic and the clientele. I jumped at the idea of using this passion for my master's project.

My journey for this project began with a facilitation meeting including several members of my school faculty. I had chosen this setting to begin my project since many of the faculty members have been enrolled in the creative studies program. My hope was that the prior experience of these resource group

members would be beneficial to me. I felt I could spend less time explaining the rules of a facilitation group and spend more time working on my problems. I made arrangements for a room at my school and arranged for the facilitation group to meet on December 29, 2005. I provided all the materials and hoped that the facilitation group would provide the ideas I needed.

Anyone who attempts to write a new or novel song finds himself or herself using some creative process to give their songs emotional impact and make them memorable. The idea generating and sorting tools that emerge using the CPS (Creative Problem Solving) process are not arbitrary; they weren't invented just to create a false sense of accomplishment or as a crowbar to pry originality out of us. They exist because people from all walks of life have found that they provide a creative booster seat. This added CPS process could push an author's product closer to helping listeners understand and remember the message at the heart of a song. A successful song needs both emotion and song craft. The CPS tools help both with the creation of the emotions and the organization of the song craft. If you have emotions but no craft, people will not understand you. If you have craft, but no emotion, people will not care. A delicate balance is needed to create the optimum result of the desired product. Still, getting started is a tough business because - just like an ocean liner - you've got to overcome a lot of inertia. You know you want to write something but you may only have a vague idea or a feeling about what it is you want to express.

So what does come first - lyrics, melody, or chords? The answer is... none of the above! The title says it all. That's what comes first... the TITLE. I couldn't start writing a song until I had a title that moved me. The title was going to be my chorus, my hook that would pull people into creativity, so it had to be a phrase that rang true in my ears. Something that makes people say, "I've got to know more about that!" I knew that if I wanted to know, others would want to know also. The title was going to be the thing that everyone remembered (hopefully). Most important: It was going to define the message of the song. It will be the guiding principle, the beacon.

I started looking around for good titles that have energy to them. Action words, images, or short phrases make good titles. I found that newspaper headlines are full of good titles. Some of the titles from a recent paper I read were as followed: “A Dream On The Edge,” “The Great Divide,” “The Same-Old Same-Old,” and “Easy Does It.” I also tried listening to myself, writing down stream-of-consciousness style: write or type as fast as I could, trying not to think or make judgments, then I would go back and look for good phrases. When I would listen to other people talk, to the television, or read a magazine, I always keep a little corner of my mind alert for phrases that captured my attention. I soon had a list that was growing quite rapidly. I ended up throwing out most of my ideas, or using some for lyrics down the road, but one idea did continually draw my attention to it... “Leaders of Tomorrow.”

I took this title into the facilitation session and tried to have the team answer some questions and help me make decisions. I needed to know “What are the questions that this song is going to answer.” I started the group off by asking what questions the title “Leaders of Tomorrow” want to have answered. What questions need to be answered: “What are Leaders?” “Why are the good leaders?” and “When is Tomorrow?” I needed answers to these questions, and more, to help determine what my song is about and the message it sends. Now, people may answer them in very different ways, so I explained to the resource group that these answers would have to be put in the vocabulary of a non-CPS-aware student. I couldn’t use the language that is so prevalent in Creative Studies and expect people outside of the program to understand. My final choice would depend on which of these ideas has the strongest emotional appeal for me. That is the song I would write.

The session went very well, and the five-member resource group had some great ideas about the topic of the title and what a leader really is. We first used a standard brainstorming session where resource members wrote ideas on post-it notes and handed them to the facilitator and their assistant. We were able to generate about fifty to sixty ideas in fifteen minutes. The facilitator then

proceeded to use forced connections to keep the group thinking. The group moved on to several forced connections and was able to increase the idea chart by about thirty more ideas. I felt very pleased with the divergent results, and decided to steer the group into the convergent stage by passing out the targeting stickers. Another ten minutes had gone by and the resource group had narrowed the ideas down to the fifteen most popular. The resource group was given a break while the top fifteen ideas about leadership were written on index cards and placed at each seat. Once the group returned, they were instructed to use card sort and place the ideas in order from most popular to least popular. Using this tool would allow me to see each individual's personal likes and dislikes that I could later use in the songwriting process.

The next problem tackled by the resource group was "what CPS tools or components should this song promote?" For this problem, the facilitator used Scamper to get the group thinking of ideas. I really was pleased with the ideas generated with this tool, and decided not to use a convergent tool. I wanted all the ideas they had since I did not yet know what direction the song would take me. The facilitation ended after two hours and I thanked all the group members for their help in this task. By this time, I really felt I had some great ideas to guide me through the task of composition and adding lyrics.

I was now ready to begin drafting the outline of lyrics. Some of the research I had read about dealt with the vertical and horizontal writing styles. In light of the process that should be done, due to time constraints, I focused on vertical writing techniques. My past attempts at using horizontal writing had me laying out all the ideas in a row and organizing them in the order I felt offered the best flow. I had a difficult time blending the ideas together, and often found myself facing many obstacles that I really had to fight to overcome. The use of vertical organization, I felt, seemed to work much more efficiently. All the ideas of the song were pieced together one by one and this outline offered more flexibility to accommodate rhyme and rhythm. This was a much easier and friendly format to build lyrics around.

I had my title, “ Leaders of Tomorrow,” and plenty of ideas thanks to my facilitation group. I had decided to a vertical writing style to assemble my song. I still needed a melody, and for this, I turned to a friend in the music business to help me out.

## **Chapter 4**

### **Outcomes**

Before I could begin to build my creativity song, I needed a musical piece that would provide a well-structured song (intro, verse, chorus, verse, chorus, bridge, chorus). A friend of mine had been collaborating with me on several instrumental songs, and I felt it was a good idea to use a piece that I had already written and just add lyrics to it. I listened through roughly eight songs before I felt I had found a tune that would fit my needs. This instrumental was both upbeat and uplifting. It offered good structure for the verses and chorus. Before I began building my song there were a few “rules” of songwriting that I needed to keep in mind.

1) A songwriter needs to know to whom they are writing their music for. Know their goal. The reason why they need to know this is because when songwriters create music for themselves, there is no limit to what they can do to be ‘expressive’. If they are making music for other people, they will have to be aware of how people will relate to their work.

A great example is: when you are a computer genius and you want to explain to someone how to fix their computer, you have to speak in their terms that they can understand what you are saying. If you speak in computer terms, you will most likely lose them in technical words and phrases. Another example is the author. He can write a story with the largest, most sweeping words he knows- but if the reader does not know what those words mean, the entire meaning gets lost. Musicians face the same predicament. Overcomplicated songs will lose the average listener.

2) Writers need to build a hook. Some of the most powerful hooks are derived from taking a simple melody and modifying it ever so slightly. Hooks need to be predictable and not predictable at the same time. If there is a degree of predictability then the listener will be able to relate to the song more quickly.

For instance, how many people have said in their heads, “that would be so cool if this song did this...” and then the song took the same direction they wanted it to go. If they twisted it a little bit, then the song will have its unique identity that separates it from the traditional cliché of many hooks. People have heard different artists use the exact same musical hooks and patterns, and if there is no unique twist then listeners will hear something like, “they copied (fill in the blank)’s song. Sounds just like it but with different words.” Writers most likely want their song to have its own identity.

3) Use catchy phrases for lyrics. If songwriters are planning on writing lyrics, then they must use words that people use everyday. Why? Because if those same words are used in just an everyday conversation, it will remind that listener of specific songs. For instance, if someone said “I was outside last night and saw a twinkle twinkle little star”, immediately that song pops into the mind of people around them. Of course no one would talk like that, so if writers mold their songs around an everyday phrase, then it will remind people of their song easier. An example that comes to mind is the Staind song, “It’s been awhile”. Every time someone says that phrase it reminds me of that song.

I gathered all the ideas that were generated from the CPS session and placed them on index cards. I then laid out the index cards on the floor and placed the music selection in the stereo. As I listened to the music, I moved the cards into different orders until I started to see a storyline or progression of ideas forming. I continued this process until all the cards were placed in an order that told the story of CPS and it seemed it would be easily followed by someone who had no prior knowledge of creativity. I worked my way through each idea, changing words and adjectives looking for wording that rhymed or flowed well together. Rhyme and Rhythm have always come very natural to me and this part of the project was the most fun. I tried to focus on some of the points I had made earlier such as sticking to catchy phrases and keeping in mind who I am writing this song for.

My chorus had come together nicely, “True leaders are hard to find, follow these steps and don’t get left behind. Differing judgment is the key, that’s what will make you want to work for me. Creativity.” Once I had this gem down, the rest just started to flow, and within the hour, I had lyrics to a piece of music that I really felt covered all the points I wanted to make. It was then off to the studio to record the lyrics over the existing music tracks.

# **Chapter 5**

## **Summary and Conclusions**

I was not a stranger to songwriting when I began this project, but I have learned quite a bit for this experience. Throughout this project, I have utilized the tools and skills I have learned through the creative studies program. I decided to use a PPCo at the conclusion of my project to assess the strengths and the areas that need improvement. I often use different brainstorming techniques throughout my day-to-day life. During this project, I really only focused on forced connections and scatter, which are two of my favorites. In the future, using different tools would surely yield different ideas and help to produce a unique product. I continued to use a horizontal song writing style. Future songwriting endeavors will definitely include an attempt at writing a song using a vertical outline.

One factor that I didn't focus on during this project was the creative environment surrounding me. I was exposed to several different types of surroundings and they all had different effects on my creativity and even lyric choice. A controlled environment could potentially change the end product and would be an interesting study in itself. The actual composition of a new music track and lyrics was beyond the scope of this project. I am confident that the CPS process would easily lend itself to the actual musical composition.

This project has made me more confident in not only my songwriting skills, but also my understanding of the CPS model and tools. I feel that I am now ready to teach others about the process of creative problem solving and how it can be implemented into your everyday life. I plan on passing my knowledge learned in the CPS program to many people for years to come. The finished product of my project is currently in its final stages of production and will be delivered to the

Creative Studies Department shortly. My new goal is to have it posted on the web so that everyone can see and hear an example of the usefulness of CPS.

## References

- Auh, M. (1999). Enactive and reflective thinking during the compositional process by seventh-grade Korean students. *Proceedings of the International Music Education Research Symposium*, Launceston in Tasmania, Australia.
- Auh, M., & Walker, R. (1999). Compositional strategies and musical creativity When Composing With Staff Notations Versus Graphic Notations Among Korean Students. *Bulletin of the Council for Research in Music Education, Special Issue, No. 141*, 2-9.
- Baltzer, S. (1988). A validation study of a measure of musical creativity. *Journal of Research in Music Education*, 36(4), 232-249.
- Boden, M.A (1990) *The Creative Mind: Myths and Mechanisms*, Weidenfield and Nicholson, London.
- Brand, E. (2000). Engaging musical minds: Research leading to the development of a general music program. *Proceedings of the 18th International Research Seminar, International Society for Music Education* (pp. 52-65), held in Salt Lake City, Utah, USA on July 8<sup>th</sup> - 14<sup>th</sup>, 2000.
- Campbell, P. S. (1990). Cross-cultural perspectives of musical creativity. *Music Educators Journal*, 76(9), 43-46.

Carlin, J. (1999). A framework for investigating self-described decisions and value judgments for composing music: An illustrative case study. *Bulletin of the Council for Research in Music Education, Special Issue, No. 141*.

Csikszentmihalyi, M. (1975) *Beyond Boredom and Anxiety: The Experience of Play in Work and Games*. San Francisco: Jossey-Bass.

Csikszentmihalyi, M. (1988). Society, culture, and person: a systems view of creativity. *The nature of creativity: Contemporary psychological perspectives (pp. 325-339)*. Cambridge, Cambridge University Press.

Csikszentmihalyi, M. (1992) *Flow: The Psychology of Happiness*. London: Random House Limited.

Davidson, L., & Welsh, P. (1988). From collections to structure: the developmental path of tonal thinking. *Generative processes in music: The psychology of performance, improvisation and composition (pp. 260-285)*. Oxford: Clarendon Press.

Guilford, J. P. (1950). Creativity. *American Psychologist, 5*, 444-454.

Gruber, H. E. (1978). Darwin's 'Tree of Nature' and other images of wide scope. In J. Wechsler (Ed.), *On aesthetics in science (pp. 121-142)*. Cambridge, MA: MIT Press.

Gruber, H. E. (1981). *Darwin on man: A psychological study of scientific creativity*. Chicago: University of Chicago Press. (Original work published 1974)

Hickey, M. (1997). The computer as a tool in creative music. *Research Studies in Music Education*, 8, 56 - 70.

Kratus, J. (1989). A time analysis of the compositional processes used by children ages 7 to 11. *Journal of Research in music Education*, 37(1), 5 - 20.

Kratus, J. (1994). Relationships among children's music audiation and their compositional processes and products. *Journal of Research in Music Education*, 42, 115-130.

McPherson, G. E. (2000). Commitment and practice: Key ingredients for achievement during the early stages of learning a musical instrument. *Proceedings of the 18th International Research Seminar, International Society for Music Education* (pp. 245-256), held in Salt Lake City, Utah, USA on July 8<sup>th</sup> – 14<sup>th</sup>, 2000.

M. T. Pearce and G. A. Wiggins, 'Towards a framework for the evaluation of machine compositions', in *Proceedings of the AISB'01 Symposium on Artificial Intelligence and Creativity in the Arts and Sciences*, pp. 22–32. Brighton, UK: SSAISB, (2001).

Rhodes, M. (1961). "An analysis of creativity". *Phi Delta Kappan* 42: 305-311.

Schmidt, C. P., & Sinor, J. (1986). An investigation of the relationships among music audiation, musical creativity, and cognitive style. *Journal of Research in Music Education*, 34(3), 160-172.

Simonton, D. K. (1993). Creative genius in music: Mozart and other composers. In P. F. Ostwald (Ed.), *The pleasures and perils of genius: Mostly Mozart* (pp. 1-28). New York: International Universities Press.

Simonton, D. K. (1987). Musical aesthetics and creativity in Beethoven: A computer analysis of 105 compositions. *Empirical Studies of the Arts*, 5, 87-104.

Torrance, E. P. (1966). *Torrance Tests of Creative Thinking*. Bensenville, IL: Scholastic Testing Service.

Walker, R. (1976). *Sound projects*. Oxford: Oxford University Press.

Walker, R. (1978). Perception and music notation. *Psychology of Music*, 6(1), 21-46.

Wallas, G. (1926). *The Art of Thought*. New York: Harcourt, Brace.

Webster, P. (1979). Relationship between creative behavior in music and selected variables as measured in high school students. *Journal of Research in Music Education*, 27, 227 - 242.

## Appendix A

A handout a data collected about the differences of men and women and what environment they view as the most conducive to creativity. This information could be used in future applications of this project.

### What Type Of Environment Fosters The Best Creativity?

The following information was based on data collected from the following reports-

*“How businessmen generate ideas: Creativity and Innovation Management”*

*Geschka, H. and Magdefrau, H. (1992)*

*“Where do teachers get their ideas from?” Tomic, W. and Brouwers, A. (1999)*

Men and Women view a creative environment very differently based on several surveys of random Teachers and Business Professionals.

- The majority of males (76%) prefer a quiet, alone atmosphere.
- Women (76%) generate better ideas in a bustling environment
- Men are most creative (79%) during evening hours
- Women (68%) tend to become inspired during daytime hours, and also during housework.

Teachers and Business Professionals also differ about the conditions that promote their best creative ideas.

- Lectures and Seminars	Teachers (30%) Businessmen (67%)
- Talking to Colleagues	Teachers (52%) Businessmen(45%)
- Idea generating in evenings	Teachers (18%) Businessmen (76%)
- During Physical Activity	Teachers (16%) Businessmen (42%)

## **Appendix B**

Concept Paper

THE CREATIVITY THEME SONG

Roger Broeker

Project Type: **Develop a theme song for the Creative Studies Dept. in order to promote the program and entice new candidates to join.**

---

### **What is this Project About?**

This project incorporates the CPS process into songwriting. By following the facilitation process and researching creative musical theory, I hope to produce a quality song that will appeal to prospective students from around the globe. The language of music overcomes cultural and language barriers. In addition to the final product, I hope to learn more about the creative process of writing music.

### **Rationale of Choice:**

I have been a music lover and maker of music for about 20 years and I am a true believer in the power of song. The information that I may be able to provide could impact future musicians and lovers of music. When people research or investigate the International Center for Studies in Creativity, they only find printed text and pictures of the center to entice them to explore more options with the center. What I propose to do is help create a more appealing tool to be used in a multimedia presentation along with timeline to better illustrate what the center is all about.

### **What will be the Tangible Product or Outcome?**

The end of my project will result in a 3-minute song included with this project on CD, that will help to explain and narrate the history of CPS. This song

will use the music of a popular artist yet to be determined. To actually write the music and lyrics to this song is beyond the scope of this project.

### **What criteria will be used to measure effectiveness?**

The final product will be evaluated in several ways. The first would be a adaptation to already existing material and how well the song fits, second would be a select group of listeners who would critique the song based on several criteria laid out in the evaluation forms, and last would be a group of people critiquing the CPS process used to create the song based on pre-established criteria.

### **Who will be involved or influenced?**

I will be the soul creator and author of any work that is accomplished. A resource group of current CPS students enrolled in CRS 670 will be used to diverge and converge the topics that the song will focus on. This will be completed in a facilitation organized by myself at my CSAT (Charter School for Applied Technology). Several randomly selected people with no prior knowledge of the CPS process will be used in the evaluation portion of the project along with a few CPS students to critique the creative process I used.

### **When will this project take place?**

I have already done much of the background research for the songwriting process, and the first steps towards divergent thinking will begin as soon as the project is given the green light.

### **Where will this project occur?**

This project will occur at my house in Tonawanda, NY, my school The Charter School for Applied Technology, and also at the Buffalo State Creative Studies Dept.

### **Why is it important to do this?**

I feel that this song would have a positive impact on the Creative Studies Dept. This positive and fun spirited song would possible encourage prospective students to learn more about CPS. More students might enroll in the program, increasing the strength and credibility of the Creative Studies discipline.

### **Goals and Outcomes?**

- To produce a new song that expresses the attitude of the Creative Studies Dept.
- To successful organize and run a facilitation to both diverge and converge on the song ideas and narrow the broad concepts down to several solid ideas.
- To promote the Creative Studies Department at Buffalo State.
- To explain and encourage people to pursue an education in the field of CPS.
- To broaden my understanding of music theory

### **Evaluation:**

The evaluation of my project will consist of three parts. The first being an introspective look at what I learned and how valuable the information was to me. The second would consist of randomly selected people unfamiliar with the CPS process critiquing my work using an evaluation sheet of pre-determined requirements. The third would consist of several seasoned CPS students reviewing the process used and grading the process on CPS content and consistency.

### **Prepare timeline:**

I hope to be working on the divergent stage of songwriting and resource collecting by 10/1/05. I will have finished the resource and moved onto convergent CPS by 10/14/05. The finished product will be recorded and submitted by the proposed due date.

### **Pertinent Literature or Resources:**

There have been several sources that I have already researched, such as findings from McPherson and Csikszentmihalyi. I have spent a substantial amount of time looking at research being done in the east about Creativity in music and processes that have been tested. I look forward to exploring several different sources of information and trying multiple approaches to create my final result.

## **Appendix C**

The following tools have been included for future CPS facilitations. All of the tools used throughout this project have been included along with several new tools.

The tools included are as follows:

Forced Connections

VIR

Scamper

Card Sort

Targeting

Evaluation Matrix