

[Original Article]

Integrating Creative Problem Solving into the Field of Fashion Education

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Abstract

Fashion professionals these days agree that changes in the fashion business are essential and highly value creativity as a genuine source for generating new ideas in fashion products as well as fashion business practices. As fashion professionals deal with problems of which solutions do not exist or that need innovative solutions for brand or product differentiation in the fast-paced environments, interest in creativity and creative problem solving in the field has increased; therefore, fashion educators have realized that there has been an increasing need for incorporating creativity or creative problem solving into the fashion curriculum. In this study, the researcher intended to review previous research on the use of creative problem solving in classrooms in various disciplines including the field of fashion education to provide insights and suggestions for fashion educators to integrate creative problem solving into the fashion education curriculum. Previous attempts to apply creative problem solving to solve issues in fashion classrooms have mostly limited to promoting divergent thinking techniques. It is suggested for fashion educators as well as fashion students to consider creative problem solving as a process consisting of the four distinct stages in which both divergent and convergent thinking techniques should be properly utilized stimulating various thinking strategies.

Keywords: creative problem solving, fashion education, divergent thinking, convergent thinking

I. Introduction

Changes in the fashion business are essential and creativity is always highly valued as a genuine source for generating new ideas in fashion products as well as fashion business practices. Students in the fashion programs most likely pursue their careers in the fashion industry. People working in the fashion industry face problems of which solutions do not exist or that need innovative solutions for brand or

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product differentiation in the fast-paced environments. Given considerable interest in creativity and creative problem solving in the field, it would be beneficial to integrate creative problem solving into the fashion education curriculum. Teaching creative problem solving has tended to focus on developing students' potential in creativity or generating many diverse ideas for problem solving especially in the field of fashion education. Therefore, a necessary effort should be made to introduce and teach creative problem solving as a process consisting of multiple steps with various thinking strategies in the field of fashion education.

Often consumer buying behavior or decision-making process is explained as a problem solving process by identifying consumers' unmet needs (problem identification), searching for information, evaluating and prioritizing alternatives, purchasing, and reviewing the purchase. When this well-known consumer behavior theory is applied to fashion marketing, the "creativity" issue weighs heavily on fashion business practitioners as consumers always expect to see new products and to have new experiences both in brick-and-mortar stores or online stores these days. Titus (2000) explored the similarity between marketing practice and the creative problem solving process and suggested an instructional approach that promotes the use of the creative problem solving process and techniques in marketing classrooms. Here, in this study, previous research on the use of creative problem solving in classrooms in various disciplines including in the field of fashion education is reviewed.

II. Creative Problem Solving Process

In this study, the Creative Problem Solving Thinking Skills Model, originally based on the Osborn and Parnes model of creative problem solving and refined by Puccio, Murdock, and Mance was chosen to provide a framework for applying creative thinking to solve problems and to bring positive changes to the existing world. The creative problem solving process involves multiple ways of thinking deliberately and intuitively applied to the three conceptual stages – clarification, transformation, and implementation (Puccio, Murdock, & Mance, 2005, 2007; Puccio, Mance, & Murdock, 2011, see Figure 1).

According to the Creative Problem Solving Thinking Skills Model which is a comprehensive cognitive and affective model designed to promote creative thinking and to generate solutions and positive change, users can freely move in between steps as needed by executing the assessing the situation step. The assessing the situation step located at the center of the framework helps users identify where the process should begin. Around the assessment stage, there are three conceptual stages including clarification, transformation, and implementation. In the clarification stage, the following question "What needs to be resolved?" should be answered through exploring the vision and formulating challenges. The transformation stage is the process where generating ideas and options to solve a problem and refining the best ideas into workable solutions take place. Exploring acceptance and formulating a plan are the two parts found in the implementation stage. Each stage requires a dynamic balance of divergent (an extensive search for many diverse and novel ideas) and convergent thinking (selecting workable solutions through critical evaluation of alternatives) that should be performed separately.

Williamson (2011) tested 116 participants of arts and science undergraduate UK students (51 arts and 65 science) on convergent thinking, divergent thinking, preferred learning styles, and creative problem solving skills using an ill-defined management and public policy problem. Contrary to the previous research findings between the 1960s and 1980s wherein significant differences were found in the thinking styles of science and art students, Williamson found

no statistical differences on the Employment Aptitude Survey (convergent thinking test), the Alternative Uses Test (divergent thinking test), the Learning Style Inventory of Kolb (preferred learning style test), and solutions to management and public policy problems (creative problem solving test) between arts and science students. The students in this study agreed with the traditional stereotypes of rather logical and analytical scientists and more emotional and imaginative artists, but they viewed that this dichotomous characterization of these two groups are not appropriate to the modern world.

Due to their open learning experience utilizing a more divergent problem solving approach to solve 'real life' problems through group / individual projects, discussions, or oral presentation, both arts and science students were encouraged to engage in creative problem solving using both convergent and divergent thinking skills. Williamson concluded that whereas the differences do exist in the disciplines of arts and sciences, creative thinking including both convergent and divergent thinking skills is needed for problem solving in both disciplines. Similarly, the value of promoting creative problem solving in the integrated and vocational disciplines such as fashion education needs to be thoroughly examined.

Business consultants and innovation specialists have said that people all have a great deal of potential to be creative and it is a matter of fact whether they can rediscover their creative potential (e.g., Kelley & Kelley, 2013). Generating new ideas and refining them to make useful and valuable changes to products and services is not a natural thinking skill, rather a set of cognitive skills purposely applied to different stages in the creative problem solving process. Therefore, teaching creativity as a problem solving process is often mentioned to be important as the key to successful innovation in products, processes, and services. Lee and Hoffman (2014) developed an active learning technique called the "Iron Inventor" using the creative problem-solving approach to teach students the step-by-step processes of creating a new product that are composed of problem identification, problem delineation, gathering information, idea generation, and idea evaluation and refinement. They developed this active learning activity based on the creative problem solving process for any marketing courses pertaining to product development. Students who participated in this activity reported that the Iron Inventor activity helped them increase their creativity, enhance their knowledge covered in the class, encourage class participation, foster interaction with the instructor and peer students, and build enthusiasm for the course. This research suggests the possible use of the creative problem solving process as an instructional tool to teach subject knowledge that is conventionally delivered using traditional teaching methods.

III. Teaching Creativity in Fashion Classrooms

Researchers in the field of fashion education have explored the concept of creativity as related to fashion design and development (Black, Freeman, & Stumpo, 2015; Ruppert-Stroescu & Hawley, 2014), to consumer motivation for reusing and repairing apparel (Lapolla & Sander, 2015), and to sustainable apparel consumption (Ruppert-Stroescu, LeHew, Connell, & Armstrong, 2015). Creativity has been seen as a source of fashion apparel consumers' need for novelty and change. Karpova, Marchetti, and Barker (2011) examined the effect of the creativity exercises on student creative thinking. In their study, 114 students of various academic classifications from freshmen to seniors majoring in different subjects including apparel design were tested on the Torrance Test of Creative Thinking to measure their

creative thinking before participating in the creativity training and after completing the training that took between 8 and 12 weeks. The researchers administered the 12 creativity exercises covering the following domains – (1) What is creativity? (2) Recognizing and identifying opportunities, (3) Generating ideas, and (4) Evaluating creative ideas. To promote students' creative ways of thinking, the researchers utilized the 12 creative exercises adapted from the various sources including The running total exercise (What is creativity?), Bug report (Recognizing and identifying opportunities), Changing perspective: Candle exercise (Generating ideas), Pluses, minuses, and most interesting aspects (Evaluating creative ideas), and etc. They reported that the students' Creativity Index were significantly higher in the posttest compared to those in the pretest for the total group of participants and concluded that students' creative thinking skills can be improved through the creativity training exercises. However, it is not clearly investigated how the creativity training transferred to domain-based problems.

Similarly, Im, Hokanson, and Johnson (2015) conducted a longitudinal study that tested whether students in the fashion merchandising program can improve their creativity after completing the creative problem-solving class and whether students can retain their problem-solving skills in the long term. They developed the semester-long creative problem-solving course composed of activities focusing on breaking existing habits and encouraging new behaviors to develop students' creative problem-solving talents. The four main contents of this course consisted of knowledge, habits, skills, and beliefs. Students in the course learned the theoretical knowledge of creativity and historical examples of the development of innovative ideas and products. Throughout the 15-week term, students completed 12 activities labeled "differents" to develop habits of exploration and risk taking by engaging in divergent behaviors such as trying a food that they never eat before. Students also participated in in-class exercises to develop divergent thinking skills such as the attribute listing method in which students are asked to develop lists of alternative uses for common objects. This course was also designed to foster students' creative self-efficacy through students' successful experiences in a classroom environment such as students' improved scores on the Torrance test of creative thinking (TTCT) or students' successful completion of the "differents" challenges throughout the semester.

In their study, the TTCT was administered twice during a semester for pretest-posttest comparisons to measure students' creativity. They collected these pretest-posttest scores from the creative problem-solving class from Fall 2009 through Spring 2012. They also administered the TTCT in two senior-level classes where they were able to locate as many of the students who took the creative problem solving class previously as possible during Fall 2013 to test the long-term influence of creative problem-solving training on students' creativity. Students' individual TTCT scores did increase after taking the class supporting that the class improved their creative problem-solving skills. The delayed TTCT scores measured in the senior classes were not significantly different from the post TTCT scores measured right after completing the creative problem solving course suggesting that student participants did retain their creative problem-solving skills for up to 4 years. The use of creative problem solving, as a teaching tool in the field of fashion education is very limited to a few cases even though it has been well proved that creative problem solving can benefit students and educator in several ways including promoting various thinking skills, learning the value of team work, improved creativity, and generating new and useful ideas that may bring in positive changes in the products, the people, and the environments.

IV. Conclusions

Engaging students in the excitement of fashion products and business, helping them utilize high-order cognitive skills, and teaching them to become creative problem solvers to deliver useful and valuable products and services to fashion consumers have been highly valued in the field of fashion education. However, the means to promote creative problem solving in fashion classrooms have not been widely explored. In this study, the possible use of creative problem solving as a teaching tool especially in the field of fashion education was examined. The Creative Problem Solving Thinking Skills Model refined by Puccio, Mance, and Murdock (2011) was chosen to provide the framework to develop any teaching materials utilizing creative problem solving as a process in the fashion curriculum. The creative problem solving process is a well-structured, integrated process involving various high-order cognitive skills that can be adopted as an instructional tool. However, the Creative Problem Solving Thinking Skills Model has not been fully utilized in the field of fashion education even though the need for incorporating creative problem solving in this field has been well recognized.

To teach creativity as a thinking process in fashion classrooms to solve ‘real business’ problems consumers or businesses face in the market, further discussion should be done on developing fashion-specific instructional strategies and methods for enhancing creative problem solving among fashion students within that frame of the creative problem solving process such as the Creative Problem Solving Thinking Skills Model. In addition, fashion educators should understand that teaching creativity and applying creative problem solving are two distinctively different matters. Applying creative problem solving successfully to solve practical issues and problems of course depend on creativity or creative thinking skills; but creative problem solving should be instructed as a process using a well-developed model such as the Creative Problem Solving Thinking Skills Model. It would be also more effective to implement creative problem solving into the fashion education curriculum through learner-centered, active learning approaches.

This “creative problem solving” effort should not only go beyond teaching creative problem solving at a conceptual level but also incorporate the entire problem solving process into fashion classrooms. Creative thinking is not the same as divergent thinking or idea generation skills. The previous attempts to apply creative problem solving seem to pay too much attention to the transformation stage in which new ideas are generated, selected, and refined for the given problem while weighing in heavily on divergent thinking skills. Further effort should be made to emphasize the clarification stage and the implementation stage (see Puccio, Mance, Switalski, & Reali, 2012) that has been somewhat overlooked in the previous research in the field of fashion education. Fashion students should learn how to identify problems in existing products, business practices, and services from the end user’s perspective, called ‘consumer’. In the problem solving process, the problem that is first noticed is rarely the true or real problem. To find a real problem, a significant amount of efforts should be devoted to develop some level of empathy with end users. Some observations tools and questioning techniques can be utilized to help students to identify important issues consumers experience and to refine them into a problem statement including Be a “Fly on the wall” in an online forum, Try your own customer service, Talk with unexpected experts, Play detective in pursuit of insight, Interview some customers (see Kelley & Kelley, 2013). Similar efforts should be made to identify appropriate tools and techniques that can be applied to the implementation stage to turn new possible ideas into workable solutions to the

problem identified at the beginning of the creative problem solving process especially in the fashion-domain. The whole creative problem solving process should include how to persuade end users or problem owners with the new idea or solution generated to overcome their natural resistance to change.

In addition, students' positive "can do" attitude should be nurtured throughout the process as positive feelings do facilitate creative problem solving (Isen, Daubman, & Nowicki, 1987). Further collaborative research between scholars and practitioners in creativity and fashion education is called for to develop fashion-specific creative problem solving by developing an instructional manual or toolbox to apply creative problem solving such as the Creative Problem Solving Thinking Skills Model for fashion-specific design or marketing courses. In addition, emotion can be an important factor in applying creative problem solving along with cognitive thinking skills. To promote students' participation in and adoption of creative problem solving process, students' feelings and affective responses in each creative problem solving process should be studied further.

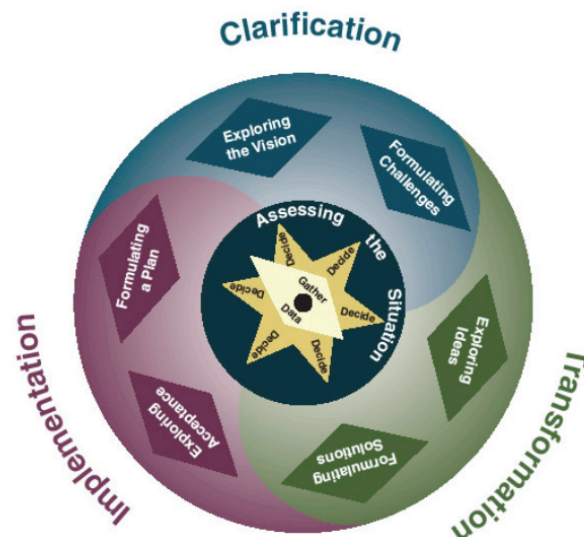


Figure 1. Creative problem solving: The thinking skills model (Puccio et al., 2007)

At every stage, divergent thinking and convergent thinking should be implemented along with gathering data and assessing the situation.

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