Chapter IV  
Discussion and Conclusions

The process of creativity is central to the work of designers, but research on the topic of designers, the design process, and creativity in the clothing and textiles field was limited. The steps of design could be separated and examined, but a clearer understanding of creativity that enhances the design process was gained by exploring their interconnectedness. This research study explored two apparel textile designers and how creativity related to their design processes.

The theoretical framework of this study was the design process stated by Koberg and Bagnall (1981), and Amabile's (1997) components of creative performance (domain-relevant skills, creativity-relevant skills, and task motivation). The themes and findings of the study of the weaver and the costume designer are presented as they relate to Koberg and Bagnall's model of the design process. It was found that the weaver and the costume designer both used the design process in their work. While the specific steps were unique to the individual designer's type of work, an overall framework of acceptance, analysis, definition, ideation, ideas selection, implementation, and evaluation was used, with the use of creativity adding the elements to achieve a creative product.

Steps of Design

The weaver and the costume designer were found to use similar design processes in their individual work. How did the findings of this study compare with the current literature in the area of designers, the design process, and creativity? Fiore, et. al, (1996) defined...process as "the internal processes of the artist/designer involved in development of the idea through completion of the aesthetic product" (p.35). Literature was abundant on the design process, although only a few studies were found in the clothing and textile field. These studies addressed only apparel designers and quilters. The lack of research within the field of designers was evident. This research study of designers, the design process, and creativity will add to the field and expand the designers studied to include weavers and costume designers.

Acceptance. The step of design, acceptance, was found in the design process of the weaver and the costume designer. The produced items began with a goal. The goal could be a gift or an item to sell for the weaver, or a costume for a play in the costume designer's work. This type of extrinsic motivation (external) is found in Amabile's model of creative performance components in the area of task motivation. Though some types of extrinsic motivation can deter creativity, other types can enhance it (Amabile,1997).

In design process models developed by others the step of acceptance was included. Researcher Graham Wallas (1926) was one of the earliest to describe a four-step...
"thinking" process. The first step of production, included defining the problem or determining the need. One step of design purposed by Jones (1970, 1992) was the problem structure is perceived or transformed. This included stating objectives for the design project. In the area of functional design in clothing and textile education, Jacquelyn DeJonge described a model of the functional design process with the first step--request is made (Watkins, 1984).

Lamb and Kallal (1992) presented a model and design framework to aid students in approaching design problems for all target customers, including special needs, costume, and fashion. The design framework included problem identification. In conjunction with the framework, they presented the functional, expressive, aesthetic (FEA) model to address the varied needs of different design problems. In these process models, the produced items began with a goal.

Petkus (1996) discussed an extrinsic motivation in his theory of role identity that provided a framework for the explanation of people's behavior from a symbolic interactions perspective. Stated another way, the motivation behind our creative behavior is "that people act based on how they like to see themselves and how they like to be seen by others" (p.189). The author provided a model with three elements: A person 1) with a specific role-identity (e.g. creative artist), 2) who engages in role performances (creative activities), and 3) who receives role support. Role-identity was defined as how a person liked to see themselves and be seen by others--for example, a creative artist. This person is motivated by this identity to engage in creative activities or role performances. These performances are patterned to be viewed by others the way one wishes, supporting the individuals role-identity. It was found that the weaver's guild and a spinning group served this purpose for the weaver, and the theatre groups, such as the production team, supported the costume designer's role-identity, a creator of costumes.

At times the two apparel textile designers spoke of being intrinsically motivated to engage in creative activity. An example is the weaver, living in Africa and being inspired to use materials that were available to create items. Both the apparel textile designers exhibited the creative component of task motivation in considering and accepting a design problem or project.

Intrinsic motivation was researched by Csikszentmihalyi (1996). He described flow as the motivation by the quality of an experience one felt when involved in an activity. He said it was "an almost automatic, effortless, yet highly focused state of consciousness" (p.110). One element of a flow experience was the distortion of sense of time. Hours of the activity might seems like a few minutes or a second might seem longer. Another element was that "distractions were excluded from consciousness" (p.112). A
flow of time was found for the two creators of this study—ability to work for long hours, enjoying the process, feeling relaxed, and working at a time with limited distractions.

A few studies focused on the intrinsic motivations to design and stated that a goal was not the prime motivator of the designer to produce a certain creation. Mehr and Shaver (1996) determined most creativity research focused on the areas of product and productivity, but found that highly creative people emphasized process and personal meaning. A lack of knowledge existed about the structure of creative people's goals, as compared to less creative people's goals and how people's goal structures changed when faced with a variety of situations. The authors found different goal structures between people identified as "low creatives" and "high creatives." Low creatives emphasized making a product, while high creatives focused on process and personal meaning. Robert Hillestad, an apparel designer, reported having several projects in progress at one time, as the creative process was what most interested him (Strain, 1996).

Also, quilters from the 1930's Depression Era challenged the idea that quilts were made primarily for necessity. "All women interviewed indicated that quiltmaking was a source of pleasure" (Blanchard, Feather, & Wilson, 1991, p.64) and that many made quilts for entertainment and special occasion use. Crews and James (1996) stated about forty percent of all quilters gave personal satisfaction as the reason they made their quilts. It was a powerful motivation for quilters from 1870-1989, according to Crews and James (1996), whose research found quilters "more often motivated by an aesthetic urge of the desire to be creative than a need for warm bedding" (p.12). Although, in a study by Chinn (1990) of four Kansas quilters, one motivation of the quilters to design quilts was to make bedcoverings.

The findings of this study supported the ideas of the design process models and at the same time illustrated the concept of intrinsic motivation in the study of Mehr and Shaver (1996), the studies on quilters by Blanchard, et. al (1991) and Crews and James (1996). The difference in findings could be due to the way each responded to the nature of the research questions. Robert Hillestad's (Strain, 1996) comment that the creative process was what most interested him, did not preclude the possibility that the design process began with an identified goal. While some designers focus on the design process with no stated goal, others begin with an identified goal that serves to influence the creative work. Care should be exercised to avoid assigning motivation or limiting motivation to aesthetics.

This study of apparel textile designers indicated a complementary relationship between the motivation of process (intrinsic) and the product beginning with a goal. (extrinsic) A study by Dohr (1985) measured women's motivations for participation in
arts and design programs and the effect those motivations had on learning. The motives were divided into content-specific (to accomplish a specific goal), personal need-activity (for recreational reasons), social relationship (to participate in a group activity), general learning/curiosity (to learn something new), and a composite of the four.

Dohr's (1985) study found levels and types of motivations that influenced creativity and learning. Included were intrinsic, extrinsic, and a combination of both. Results showed people motivated by curiosity and a goal to learn new things (intrinsic), or a composite of several motivations--content-specific, personal need-activity, social relationship, and general learning/curiosity (intrinsic and extrinsic)--were found to show the most change in creative attitude during participation in the arts and design programs. Some types of extrinsic motivation serve to undermine intrinsic motivation and creativity, though others serve to encourage them. (Amabile, 1997)

**Analysis.** In this step, analysis, gathering information was the goal. One way both the weaver and the costume designer did this was through input from others. The weaver received input from guild members or another spinner as she planned projects and explored ideas. The costume designer discussed ideas with the production team and the shop supervisor. This comprises the creative performance component of domain-relevant skills. The designers received further knowledge of the craft and the technical skills needed to accomplish their design goals. Literature was not found that addressed this theme.

**Definition.** The theme found in this step of design was using the plan as a guide. After analysis and gathering information on the problem, the designers decided or borrowed from a plan, that they used mainly as a guide. Several studies indicated defining the problem to be solved or the design project (Lamb & Kallal, 1992; Jones 1970, 1992; Wallas, 1926). This plan gave some initial focus to their design work.

**Ideation.** There are two main divisions of the idea generation methods: experience and individual process of information. First, experiences will be discussed. One way designers developed ideas was by experimenting and improvising with ideas found in books and other resources. These findings were consistent with a study by Getzels and Csikszentmihalyi (1976); the elements of improvisation and experimentation were found to be important to artists. Through the experiences of playing, an artist can try out possibilities and visualize new ideas. The non-artist does not participate in experimentation at the same level as the artist. A study of students at the Chicago Art Institute was conducted by psychologists J.W. Getzels and Mihalyi Csikszentmihalyi (1976). The questions they explored were: What process was used to produce the most
creative paintings? and What process was used to produce the least creative paintings by the students? They found the most creative paintings were produced by extensive use of experimentation and making changes throughout the whole artistic process. These students also never felt the work was completed. In contrast, the least creative paintings produced were planned before beginning, with very little improvising or experimenting, and then executed, and finished (Getzels & Csikszentmihalyi, 1976).

The weaver and the costume designer in this study used experimenting and improvising extensively. The weaver described her design work as playing with the fiber, yarn, and equipment. As the designers worked they made changes and adjustments throughout their design process. The weaver worked in this manner in her spinning and weaving, and the costume designer would continue to make changes through dress rehearsal and the last performance if deemed necessary. Robert Hillestad, an apparel designer, stated the process of creativity was what most interested him and many things were put together by chance through experimentation in his apparel designs (Strain, 1996). This was expressed by several other experts in the field (e.g. Chinn, 1990; Ealy, 1995; Renzi, 1996). Through these activities possibilities were explored in an indefinite manner. Experimentation and improvisation, part of the concept idea formation used extensively by the weaver and the costume designer, was mentioned in the literature. Robert Hillestad stated that many things were put together by chance through experimentation in his apparel designs (Strain, 1996). Kansas quilters studied by Chinn (1990) exhibited experimentation with color and design in creating their quilts. The study of artists by Getzels and Csikszentmihalyi (1976) showed that artists use experimentation to try out possibilities and visualize new ideas. Experimentation and improvisation were holistic in approach. Geierhaas (1984) acknowledged the diversity of experiences and their affect on the artists, but he concluded the activity of an artist was largely by conscious choices, development of skills, and the utilization of chance events, stating support for a more linear explanation of the creative process. I contend the use of chance events would require an artist to use at least some intuition to integrate new ideas into their artwork—an improvisational process. The findings of this study showed a great use of experimentation and improvisation and a strong preference by the weaver and the costume designer for working in this manner.

Another source for creativity was the materials themselves. The weaver and the costume designer placed a strong emphasis on the material as an inspiration and influence to their work. They responded to qualities of the materials, including the visual and tactile texture, color, and the drape of the cloth. There has been little research specifically on this aesthetic response to materials used by designers, especially designers
using textile materials. The weaver stated her initial ideas came from "mostly materials" and what they would produce and that the materials were more important than the final product. The costume designer's response was to "the way the fabric moves in an of itself."

Visual sources were important to the creative work of the designers. Several designers described in literature used visual elements to stimulate ideas for their creations (e.g. Crow, 1990; Hamaker, 1996; Strain, 1996; Renzi, 1996). They responded to aesthetic elements, such as color and line, to make a creation. Nancy Crow (1990), a contemporary quilt artist, described visual inspiration from many objects, including "things in a row" like canned goods on the pantry shelf, candy in boxes, doors, color, baskets, whirligigs, and trees. Judy Barnes Baker, a textile designer, used "love of beauty, sense of humor, considerable fiber skills, as well as mental dexterity" to create a work of fiber art (Hamaker, 1996). Contemporary apparel textile designer, Robert Hillestad, explained that the expression of fantasy was important and color played a vital part in his work (Strain, 1996). The source of visual elements was well documented in research. The findings of this study were consistent with the current literature. The weaver drew inspiration from color and texture, while the costume designer described flowers, their line and color, sunsets, and the visual flow of the fabric around the body as a source to her creativity.

Another theme found by this study was the weaver and the costume designer's use of shops and festivals as sources of ideas and inspiration. Again there is an obvious lack of attention to this area in research literature. Designer Robert Hillestad has used festivals featuring fabric as a "medium for celebration" to generate ideas for many of his celebration coats. (Strain, 1996, p.32)

The last theme of a social support system was consistent with the literature. The weaver and the costume designer interacted with groups of people who encouraged and supported their work--the weaver's guild, spinner's group, and theatrical groups. Earlier in like the designers were supported by family members-parents, grandmother, and aunts. This concept of family connection was also described by Crow (1990). She described her parents and their encouragement during her childhood. Rogers stressed the theme of an individual's desire "to achieve fully his potential through interaction with a supportive environment" (Taylor, 1975, p. 8).

A study by Cerny, Eicher, and DeLong (1993) focused on the interaction of a person with a social structure that provides a framework for self expression. Their study suggested that socialization experienced as a member of a quilt guild encouraged learning the quilting process, which in turn would "provide a framework for female
expression...through the act of quiltmaking the quilter emulates the desired identity" (p.21). Selfhood was expressed by increased knowledge of "the technical, aesthetic, an expressive aspects of quiltmaking" and the guild member quilted "drawing upon the aesthetic system in formulating her expression" (p.22). The weaver in this study was a member of two similar groups that served to provide an atmosphere to socialize, to share new information and skills, and to be recognized as a designer.

Social interaction was considered important and when culture was considered creative solutions to design problems increased. The costume designer had to consider the culture of a play before designing appropriate costumes for individual characters. Kato (1994) reviewed Lamb and Kallal's (1992) design model and stated that an important feature of this model was the addition of culture, "an important consideration in creative behavior" (p.56). Culture is the context where the designer and the target customer interact. If the designer recognized and understood a customer's values the results would be more positive. The literature on social support of a designer serving to encourage creative work was abundant in the clothing and textiles field, as well as other disciplines. This research study of the weaver and the costume designer was consistent with the current literature.

The origins of ideas used in the design process found in ideation were also found in the division of individual process of information. One theme of the weaver and the costume designer was that both expressed an urge to create or described an internal quality. Literature beginning with Freud (1947) attempted to explain this theme. Taylor (1975) described how Freud viewed the creative process as originating in the unconscious mind and the artistic product "mirrors unconscious imagery after it has been processed through the ego" (Taylor, 1975, p.5).

Psychologist Carl Jung (1966) explored artists and their process of creativity. He believed the origin of the creative act was the unconsciousness of mankind. Jung stated causal connections could not be established in the realm of art as was done in the sciences. While the subject could be studied, it would remain problematic because "the creative urge which finds its clearest expression in art is irrational and will in the end make a mock of all our rationalistic undertakings" (p.87). Croghan (1987) explored the psychological motivations for a human's urge to create and found additional sources which supported Jung's (1966) position of a person's unconscious act of creativity. The sources included an instinct to create and the designer's emotional history.

Likierman (1989) agreed with Jung's belief that the unconscious mind was the source of the creative urge. Similarly, Likierman's study concluded that an infant's original "sublime experience," the first experience of complete comfort, was the motivator for an
individual's urge to express beauty in a work of art. His study agreed with Croghan's (1987) ideas that people possess an urge to create. Thus, the literature supported the findings of this study of apparel textile designers.

The next theme was that the weaver and costume designer relied on storage and retrieval of ideas gathered from different sources. This memory of ideas provides a basis of experience and information that would be drawn upon during use of a designer's intuition. Recognition, a synonym for intuition, means "to know again" and connects ideas from the memory's storehouse. (Ray & Myers, 1989) J. Christopher Jones (1970, 1992), one of the earliest contributors to the study of the process of designers, referred to a form of visualization as "black-box" designing. In this type of creating the process was invisible inside a designer's head. Limited writing of ideas or sketching was done by the weaver or costume designer, possibly illustrating this type of visualization and process.

Another theme found in ideation was the incubation of ideas by the weaver and the costume designer. Incubation of ideas was identified by Wallas (1926) as one step of his four-step "thinking" process. He described it as the stage where a person steps back from the problem and considers various solutions. Kato (1994) reviewed the design models of Koberg and Bagnall (1981) and Lamb and Kallal (1992) and found that the stage of incubation, the time for ideas to "sit on the back burner," was not addressed by either design model. This study of designers found that the incubation of ideas was an important stage of their design process. They both expressed the need to give time to contemplate during problem-solving. Csikszentmihalyi (1996) discussed incubation as part of the process of creativity, calling it the mysterious time where ideas can "combine and pursue each other every which way" (p. 102).

Kato's (1994) study of creative research and apparel design models found that the stage of incubation, the time for ideas to "sit on the back burner," was not addressed by the models. Ray and Myers (1986) stated "It seems that creativity starts with some problem or need and moves in various ways through a series of stages, consisting of information-gathering, digestion of the material, incubation or forgetting the problem, sudden inspiration...and, finally, implementation" (p.6). Csikszentmihalyi (1996) saw incubation as a time to quiet the rational mind to allow the contemplation of possibilities. This was a characteristic of the approach the apparel textile creators of this study used. The time of incubation could be from a few minutes to several years. This study exposed how language can vary and yet identify similar types of experience.

The activity of divergent thinking could fit into the period of incubation, since with time many different possibilities can be considered during creative activity. Barron (1955) observed use of divergent thinking in creative problem solving. Two types of thinking
were discussed by Guilford (1957). One type of thinking, which converges toward one right answer, was called convergent thinking. The second type was identified as divergent thinking. This type was defined as thinking that does not need to come out with one right answer but considers many possible answers. The divergent thinking factors, such as fluency, flexibility, and originality, were most often identified with creativity. These factors are most used in situations where one right answer is not the goal. The designers in this study used these factors extensively in their creative work. The apparel textile designers studied could use convergent thinking when necessary, but they showed a preference for a divergent style of working.

Ealy (1995) proposed a "holistic", indefinite approach, in opposition to a systematic, "linear" approach--seeing the whole first, and then breaking out the details--similar to divergent thinking. She asserted that the two approaches could complement each other. The holistic approach would first look for ideas and gather in all possibilities--similar to divergent thinking. These possibilities would be sorted and decisions would be made concerning their usefulness to a project. The linear approach would then be used to organize and produce the desired result. Linear thinking only results in narrow solutions, while holistic thinking alone gathers in large amounts of information and lacks direction in its application. Both approaches used exclusively results in some problems, but "holistic and linear balance" (divergent and convergent) would be ideal (Ealy, 1995).

Kato (1994) discovered most design models in the clothing and textiles field, focused on a cognitive approach. She suggested that designers would benefit by adding the "holistic approach" to creative activity, complementing the cognitive approaches used in most apparel design models. Another way to state this would be the designers would benefit by the use of convergent and divergent thinking.

Another theme found that was part of an individual's process of information was moods and emotions affecting the work. Little attention has been given to affect, mood, and emotional influence on the design process in the literature. Barron (1955) did list "responsiveness to impulse and emotion" as a trait found in the creative processes of highly original people. Ely (1995) more recently discussed depression and anger as blocks to creativity. The weaver and costume designer stated emotions could affect their work, even when not desired. This area could be under-represented due to difficulty in measuring these affective concepts.

The last theme found in the step ideation was family characteristics as influences to the apparel textile designers' work. Personality and intellect traits were discussed by Barron (1955) and Guilford (1957), though the possibility of possessing family characteristics was not explored. Barron (1955) in his study on creative people described
a correlation between originality and certain traits of personality and intellect. The traits he found related to originality were a person's tendency towards fluency of output, dominant personality, responsiveness to impulse and emotion, presence of feminine interests, good general performance, and combining diverse stimuli. Barron found these traits in the processes of creativity of highly original people (Barron, 1955).

J. P. Guilford (1957) agreed with Barron's (1955) findings. Like Barron, Guilford's definition of creativity included the idea of a creative individual possessing "a collection of different component abilities or other traits" (p.110). These abilities and traits would be found in a total creative act, integrating three aspects: cognition, production, and evaluation.

In summary, the influences and inspirations of ideation of were largely supported by the literature. Though there has not been research on the aesthetic response to the materials or on the materials themselves serving as an influence and inspiration to the design process.

Other themes lacking study were family characteristics, and shops and festivals as sources of information and creative ideas for designers. What was confirmed by the literature was that many varied experiences and individual processes generate ideas for use in the design process of the weaver and costume designer.

**Idea Selection.** Considering several ideas before implementing a plan was an important step in designing. The theme of an elemental focus on creative work was found for the weaver and the costume designer. This emphasis had a focus on the design process. The weaver's focus was the color and texture of the raw materials that helped narrow down ideas to select the best for a project. The costume designer's focus was the movement of the fabric in relation to the body. There was a lack of research in this area.

The costume designer's work included producing original designs after extensive research of books, artwork, and photographs. Combinations of visual elements would be tried together to find the best costume to portray a character. Also, in assembling the final ensemble of each character, many items were brought together, changed, adjusted, and varied to bring a character to life on-stage.

The weaver experimented with new combinations of fibers, blending of colors, and varying thickness of her yarn. Mednick (1962) described "the creative thinking process as the forming of associative elements into new combinations which either met specified requirements or were in some way useful. The more mutually remote the elements of the new combination, the more creative the process or solution" (Taylor, 1975, p.11).

**Implementation.** The designers in this study used much flexibility and
improvising within the steps of design and as they implemented their design plans. In the literature several design models were found (Wallas, 1926; Watkins, 1984; Koberg & Bagnall, 1981; Lamb & Kallal, 1992). The approach with much of the process visible was called glass box designing (Jones, 1970, 1992). "Glass box" designing and the process categories used to create has been illustrated and explained by several different design models. Wallas (1926) was one of the earliest to describe a four-step process of preparation, incubation, illumination, and verification.

The "glass box" design approach was used in the area of functional design in clothing and textile education. Jacquelyn DeJonge stated a model of the functional design process in the following steps: 1) request is made, 2) design situation explored, 3) problem structure perceived, 4) specifications described, 5) design criteria, 6) prototype developed, and 7) design evaluation (Watkins, 1984). These design models were presented as a systematic method of designing to help design students develop their skills.

The apparel textile designers studied would begin constructing their project using different methods to achieve the results they desired. They preferred a "free-form" style of working in order to try the best possibilities, with the freedom to make changes as they went. This study expanded the literature in the area of implementation of the design process of apparel textile designers.

Evaluation. The step of evaluation, while being listed last, can be engaged in at any step of the design process. As decisions are made, from the first idea to the final touches on a creation, evaluations are made by the designers. Both the weaver and the costume designer emphasized that you need to please yourself and that at times they had a feeling of not doing it right. Ray and Myers (1986) spoke of the themes as the voice of judgment (VOJ) and being ordinary. The VOJ inhibited one's ability to respond creatively to situations. This voice could come from self or others. They explained pleasing oneself as "to be ordinary means, at heart, to know your purpose in life and find contentment in your daily doings, unimpressed by the accumulation of monetary wealth or public recognition" (p.178). The weaver and costume designer voiced the need for a designer to work in a manner they preferred, to make their own critiques, and to please themselves. If you then please others, that is "icing on the cake, not the cake."

Summary. The design process for the weaver and the costume designer was acceptance, analysis, definition, ideation, idea selection, implementation, and evaluation and both exhibited levels of creativity described by the model of creative performance components (Amabile, 1997). This is consistent with the definition of a creator. Within the order of the steps of design a spontaneity occurred that gave creativity to the process.
Each designer had specific steps in their design process that related to their unique types of work, weaving and costume designing. For both the weaver and the costume designer the produced item began with a goal. Both used experimentation and improvisation extensively through out their design process. They kept ideas in their heads, relying on their storage and retrieval of ideas--perhaps an element of "black-box" designing. Both expressed using incubation of ideas to solve problems and to contemplate possibilities. Both used a thinking process that led to new combinations of elements to form something different from the original. They experienced flow of time as the weaver spun yarn or threw the shuttle at the loom and the costume designer drew original sketches at night.

According to the model of creative performance, the designers used creativity in relation to their design process, resulting in creative products. First, both expressed **domain-relevant skills**, knowledge of their craft, technical skills had been developed, and they showed special talent for the activity. Their education from childhood to adulthood, formal and informal, supported their creativity. Each designer exhibited **creativity-relevant skills**, their work styles used cognitive thinking to generate new ideas. Both had training, experience in generating ideas, and personality characteristics that increase these skills. And last, **task motivation** was present in the designers' work. High levels of intrinsic motivation were found with no extrinsic contraints. Steps were taken to limit extrinsic interference.

The deconstruction of the objectives were further explored (Table 2) to view agreement with existing research. In the steps of design several themes were starred, indicating meaningful findings. The first step, **acceptance**, the produced item began with a goal was true for both the weaver and the costume designer, though they also expressed motivation by the process itself. The weaver had the goal of making a gift or an item to sell. The costume designer's work began with the goals of the production or script. Some researchers found this to be true (Chinn, 1990; Lamb and Kallal 1992; Wallas 1926), but others did not, stating aesthetic response as the prime motivator (Blanchard, et. al, 1991; Crews and James, 1996; Mehr and Shaver, 1996; Strain, 1996). This study supported the idea that the creative work began with a goal, but an intrinsic motivation resulted from the process experience.

The second step, **analysis**, included the theme of input of others. In the planning stages of work the designers of this study would often consult with other people to gain needed information, knowledge of technique, or new ideas before continuing. The idea of a network of creators supplying each other with sources has not been studied.

In the area of **ideation** a major theme was, relying on the storage and retrieval of ideas. The costume designer said she might not remember where she saw something, but
she would remember the idea itself. The weaver agreed saying she would remember anything important. They both expressed faith in their ability to store and retrieve ideas at a later time. Ray and Myers (1986) described recognition as a useful part of intuition knowing again or drawing upon stored knowledge and experiences.

Incubation of ideas, the last theme found in this area has been explored in some studies, though most design process models do not address it directly. It was described as a step in the "thinking" process by Wallas (1926). Recently it has been discussed as part of Csikszentmihalyi (1996) findings. The designers of this study expressed waiting and taking time as part of their design process. The time could be a few minutes to several years. During this time problems would be solved or the goal of an idea would be formulated.

Several themes of ideation were major components of my study. One theme supported by Csikszentmihalyi (1996) and Ely (1995) was moods and emotions affecting

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creative work. Moods and emotions were used at times by the designers to enhance their work, while other times they worked around the mood or emotions that would hinder the goals of their design process. The interplay of mood and emotion with the design process and resulting product could be explored more extensively in future studies. A second theme that was found as part of the designer's approach to their creative work was relying on the storage and retrieval of ideas. Neither the weaver nor the costume designer physically recorded initial ideas from sources for use later but simply remembered them. No systematic method was utilized. Future studies could explore the usefulness of this approach in encouraging the creativity of designers, students, and those engaged in creative activities.

Also, the step of ideation had several new findings that can be studied further to aid in the understanding of designers and their design process. Family characteristics as influences seemed apparent in this study and could be explored in future studies. An example of this would be a trait apparent in a family group such as an interest and talent in painting. The materials used in their type of creative work were extremely important to the weaver and the costume designer as an inspiration and influence to the final product. The characteristics of the materials many times determined the direction of the design process.

With the abundance of many different shops and arts festivals one would expect these to have been explored, though no studies of these sources were found. The weaver and the costume designer viewed these as important for inspiration, new information, and materials for use in their work. Future studies could discover the role and importance shops and festivals play in a designer's creative activity.

In the step of ideas selection both the weaver and the costume designer had a definite elemental focus to their work. The weaver's focus was color and texture, and the costume designer's was the movement of the fabric in relation to the body. They stated in all their work these elements were key determinants in their creative work. Future research could examine this theme of an elemental focus of designers in more detail.

In the step implementation several themes were found. Multiple methods were used by weaver and costume designer to achieve the results they desired. In using these various methods they made changes as they worked. Their preference was to work in a "free-form" style, using their knowledge and skills to evaluate the work as it progressed making changes and adjustments if needed. The step of evaluation was used at many different times in the design process. A theme found in this study was the strong desire to please self. Both the weaver and costume designer expressed this as being basic to the evaluation of their work. This finding agreed with the work of Ray and Myers (1986).
They stated a designer must quiet the "voice of judgement" in order to problem-solve more creatively.

There are implications of this study of apparel textile design for the clothing and textile field. As expressed by Watkins (1988), "process"-oriented instruction will better serve the development of students by emphasizing skills and knowledge (domain relevant skills) and by encouraging experiences that promote generation of novel ideas (creative-relevant skills). In turn this will benefit industry and society by increasing designers' abilities to meet complex design problems. Future studies could examine more extensively the use of process-orientation in classroom instruction, its benefits or drawbacks, and its implications for curriculum development.

Outside the field of clothing and textiles, researchers can be benefited by this study as it provides a rich, narrative of the personal experiences of two designers and their creative activity. Also, the interview questions developed to engage the designers in conversation about their design work and creativity would be useful for researchers conducting similar studies. (Appendix B) Additional informal questions were asked in response to the dialogue of the participants to encourage them to expand on a subject that they introduced. For example, the interviewer asked question twelve, "What advice would you give to someone else in their creative activity?" The costume designer explained and ended saying, "Sometimes you just need someone to come in and say that is how you solve the problem." The interviewer then asked, "(you would be) learning different techniques?" The costume designer then answered and continued to explain the importance of pleasing yourself. Thus more information was shared then the original question.

In conclusion, the exploration of apparel textile designers produced detailed examples of their design process and how creativity enhanced that process and the design product. According to Csikszentmihalyi (1996) creativity and its process is an important area of study, because it is central to enriching culture and the quality of our lives.

As in music...a technique was followed...and through an exploration of ideas the melody had...a new sound.