

**CREATION OF INNOVATIVE FASHION AND TEXTILE COLLECTION
BASED ON THE CONCEPTUAL FASHION DESIGN PROCESS MODEL FOR HONG KONG**

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Ph.D

The Hong Kong Polytechnic University

2012

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Creation of Innovative Fashion and Textile Collection

Based on the Conceptual Fashion Design Process Model for Hong Kong

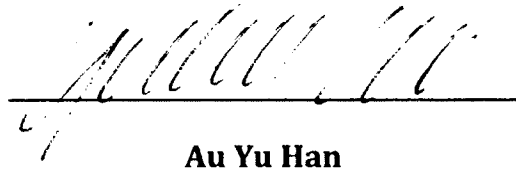
Au Yu Han

**A thesis submitted in partial fulfillment of the requirements for the
degree of Doctor of Philosophy**

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Au Yu Han

ABSTRACT

The symbiotic relationship that exists between fashion and textile design is often considered inseparable. In recent decades, the world of fashion and textile design has become increasingly close and reliant on one another. Fashion designers understand that the future of their profession lies to a great extent in the selection of fabrics. Advanced textile technology has yielded new aesthetics, tactile qualities and performance capabilities to fashion. Fashion designers are collaborating with textile designers to produce collections which show innovative fabrics, impeccable craft and conceptual designs. This excellent collaboration of design work leads to the integration of the design process undertaken.

However, limited literature and systematic models which describe the conceptual design process can be found in both academic and industrial fields. As there is an obvious knowledge gap in the subject of conceptual fashion design, this study seeks to identify the dimensions of creative success within this specific domain. A thorough understanding of the dimensions of creativity theories and, creative processes in different design disciplines will help to develop a rich background to the study of creative activities within the domain of conceptual fashion design. The present research attempts to 1) explore the identification of the innovative conceptual fashion design and its creative system, 2) develop a theoretical framework of design process that presents a series of creative actions and 3) develop a model of design process that is generic to both textile design and fashion design, by rationally integrating professional knowledge from different design domains into a systematic conceptual framework.

These raise my interest on the investigation of the design process in developing conceptual fashion design and the creative thinking within the mind of conceptual designers. This study documented and tracked the emergence and development of conceptual fashion, exposing interdisciplinary practice at the edges of the fashion discipline.

RESEARCH AWARD AND DISTRIBUTION

Award:

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Chapter 1 Introduction

1.1 Background

In the past decade, there have been an increasing number of fashion designers exploiting art, architecture, and product and performance contexts as well as adopting conceptual-related and interdisciplinary methodologies in their production. The subject of fashion design and textile design becomes more diverse, collaborative and interdisciplinary. Fashion designers understand that the future of their profession lies to a great extent in the selection of fabrics. Advanced textile technology yields new aesthetics, tactile qualities and performance capabilities. Fashion designers collaborate with textile designers to produce collections which employ innovative fabrics, impeccable craft and conceptual designs. Some high-end designers react to the commercial focus of contemporary fashion, deviating from the traditional fashion cycles, seasonal restrictions, and market-led processes towards a more conceptual, experimental, and process-driven approach. This excellent collaboration of design work leads to the integration of design processes. And it raises the research interest in the investigation into design processes of developing conceptual fashion design and the creative thinking by conceptual fashion designers.

However, limited literature and systematic models which describe the conceptual design process are found in both academic and industrial fields. As there is an obvious knowledge gap in the subject of conceptual fashion design, this study seeks to identify the dimensions of creative success within this specific domain.

A thorough understanding of the dimensions of creativity theories and creative processes in different design disciplines is documented to develop a rich background for the study of creative activities within the domain of conceptual fashion design. We documented and tracked the emergence and development of conceptual fashion, exposing interdisciplinary practice at the edges of the fashion discipline. Against this background, the present research attempts to 1) explore the identification of conceptual fashion design and its creative system, 2) develop a theoretical framework of design processes that presents a series of creative actions in conceptual fashion design and 3) develop a model of design processes that is generic to conceptual fashion design, by rationally integrating professional knowledge from different design domains into a systematic model.

A mixed method of research design with an exploratory sequential data analysis approach was used to further ascertain the practical value and the effectiveness of the proposed model, which is generic to conceptual fashion designers in Hong Kong. Finally, a fashion collection was designed based on the developed model of design processes in conceptual fashion design.

1.2 The Emergence of Conceptual Fashion

The past two decades see fashion and textile design increasingly reliant on one another. Today's fabrics, because of their way of production and applications, allow designers to have greater freedom to explore issues (for example, LED fabric) besides the conventional silhouette and style.

Fashion designers understand that the future of their profession lies to a great extent in the

selection of fabrics. Advanced textile technology yields new aesthetics, tactile qualities and performance capabilities. Traditional crafts such as knitting, weaving, embroidery and intricate hand detailing are employed alongside sophisticated new treatments. High technology coating, laser-cutting, the latest microfiber fabrics, shape memory alloys and technical clothes are appropriated from industrial applications. Against this background, textile's engagement with innovative fashion design is surprising and yet the hybrid forms generate revolutionary results.

Due to the innovative fashion textiles, today's fashion conceptualists insist on a holistic approach to their collections, and this includes a key role in originating and overseeing the development of radically novel fabrics and fabric sculptures. Those collaborations leave an exciting mark in both fashion and textile practice. The collections showcase the integration of innovative fabrics and impeccable craft. Designers such as Hussein Chalayan, Issey Miyake, Zandra Rhodes, Dries van Noten, John Galliano and Vivienne Tam are characterized by this fashion dualism.

There is a rising attention of conceptual fashion design in the industry. However, the design process of developing conceptual design remains a mystery. The distinction between garment designers and fabric designers becomes blurred when one examines the activities of 'fashion conceptualists' and 'high-fashion' designers. There are few publications found in both academic and industrial fields which describe the phenomenon of creative design dualism and its integrative design process.

1.3 Design Process Reviewed

Many fields such as education, psychology and philosophy use design processes to help develop creative thinking (LaBat and Sokolowski, 1999). This study outlines the major features of leading design processes in the fields of architecture design, industrial product design and fashion design. Design processes vary with each stage. The focus on each process also varies according to the design field. This study examines various stages within each design process and sorts them according to their commonalities and applies them to the proposed theoretical framework.

1.3.1 Architecture Design

The fields of architecture and environmental design use design process models as a means of managing big and complex design problems. For example, the “Problem Solving Theory” was developed for application to the fields of architecture and engineering design, in which design was generally defined as a process of problem solving (Wertheimer, 1959; Archer, 1984; Darke, 1979; Jones, 1984; Thomas and Carroll, 1979). The core concept of this theory was, by analyzing the problem in the first stage and subsequently applying the methods of synthesizing or conceptualizing the proposed solution and subsequently an evaluation proposed in the form of a statement of the problem instead of a final answer (Archer, 1984).

Broadbent (1986) outlined the most detailed creative process of architectural design. The first stage of Broadbent’s model is the acceptance of the “brief”, a term often used by architects and industrial designers to describe the problem presented by a client. The brief is then subject to analysis or close scrutiny. The asterisk in the model represents a gap in

the linear process, as there is no direct connector between analysis and synthesis. Broadbent (1986) postulated that the gap is bridged by preconceptions that the designer brings to the project. These preconceptions are unavoidable as they are inherent in the designer's experience and background from previous work. The preconceptions, storing up knowledge or innate skills of the designer, may provide what other theorists regard as the 'creative leap' leading to the possibility of synthesizing all the information to provide a possible solution to the problem.

Broadbent's model focuses on the preconceptions that the designer brings to the project, whilst Zeisel's (1981) model emphasizes the relationship between the designed environment and the user. Zeisel's (1981) environment-behaviour research proposes steps to solve problems of architecture and housing. His model of design processes incorporates many specific methods of researching human reactions. Zeisel stated that all three elementary design activities – imaging, presenting and testing – influence the decision to build. He described three distinct stages of the design process and used a spiral metaphor to illustrate the process. Along the length of the spiral are intervals called 'conceptual shifts' or periods in the process when the designer rethinks and evaluates the design, making the designer double back the path of the spiral to redo the previous stage of work. The spiral encompasses a core that Zeisel (1981) termed the 'domain of acceptable responses', a phrase borrowed from Archer (1965). Zeisel addressed the question of when the design process stops or what criteria suggest the solution be sufficient. The decision-maker may be the designer, a client or a management team for the project.

As shown above, in the fields of architecture and engineering design, the creative process is viewed as the recognition of a problem and generalization of conceptual solutions. It also addresses the necessity of evaluating the success of a design without testing and re-testing the solution.

1.3.2 Industrial Product Design

Compared with the models of design processes in all design fields, the creative processes of industrial design are the most relevant to fashion and textile design. Industrial designers combine in-depth knowledge of the physical nature of materials and processes with a keen awareness of the aesthetic sense of the object. Most of the creative processes of industrial design move to a further platform by involving prototype testing in their models.

Like Archer's (1965) model of design processes, it involves three stages including 1) analytical, 2) creative and 3) executive. The analytical phase involves observation, measurement and inductive reasoning. The creative phase involves evaluation, judgment, deductive reasoning and decision. The executive phase involves descriptive translation and transmission of ideas for production. Archer described the analytical phase as an orderly process with team activities driving empirical research that provides a base for decision-making. Archer stated that the "creative leap" of the second phase may lead to a feasible solution but the product must be subject to testing. Archer (1984) pointed out the importance of 'testing' in his model, in which "almost any design solution constitutes a hypothesis based upon imperfect evidence and it must be subject either to the test of the market place or to some indirect analysis."

Jones (1963) took Archer's model to another level by referring to the three stages as "divergence – transformation – convergence". Jones argued that designers must discipline themselves to actively research the entire problem before reaching premature decisions. Jones (1981) concluded that the creative process is cyclical and allows the designers the flexibility of going through the creative process many times.

The creative process contributes an open iterative approach to a generation of design ideas with an emphasis on iterative recycling of problems and testing solutions as important features in the creative design process.

1.3.3 Fashion and Textile Design

Like in other design fields, the usefulness of applying a model of design processes to fashion and textile design has been explained and demonstrated by numerous educators (Watkins 1988, 1995; Lamb and Kallal 1992, 1994). Scholars and academic researchers agreed that continual exploration and understanding of the design process is considered necessary to advance and encourage implementation in the fields of fashion and textiles (LaBat and Sokolowski 1999).

Lamb and Kallal (1992) advanced the development of a design process model in all types of apparel design. Their "Functional-Expressive-Aesthetic (FEA) Consumer Needs Model" incorporates stages of a design process model from the Koberg and Bagnall (1981), Hanks, Belliston and Edwards (1977) and Watkins (1988) models. Lamb and Kallal (1992) provided a model of six steps for the creative process that includes 1) problem identification, 2) preliminary ideas, 3) design refinement, 4) prototype development, 5) evaluation and 6)

implementation.

Cross (1984) described the apparel design process models as generally “prescriptive”. He indicated that there are two types of model in the creative process of design, including descriptive models and prescriptive models. The descriptive model emphasizes the importance of generating a solution concept early in the process. The prescriptive model is developed to encourage designers to use a better way of working. It provides a systematic method that emphasizes the early stages of a thorough investigation.

Watkin’s (1988) model of design processes is one of ‘prescriptive’ models. She proposed a model of seven steps, adopted from Koberg and Bagnall (1981), as an essential tool to a successful design including the following stages: 1) accept, 2) analyze, 3) define, 4) ideate, 5) select, 6) implement and 7) evaluate.

A variety of factors have been found to influence designers during the creative process and these must be understood in advance of proposing a model of design processes. Au (2003) outlined four major factors influencing Hong Kong fashion designers during the design process, including 1) aesthetic presence, 2) psychological satisfaction, 3) social attitude and 4) historical revival.

Besides the intangible factors listed above, Stone (1999) summarized three practical considerations of fashion designers in their creative process: 1) from the business perspective, designers must produce clothes at a profit within the firm’s predetermined wholesale or retail price range; 2) when selecting the material, designers must consider the availability and cost, and the particular image that the firm wants to project; 3) designers

must take into account the available production techniques, and the cutting and sewing labour costs.

As shown above, the analytical framework of the creative process in fashion design is based on the concepts of 'analysis-synthesis-evaluation' developed in other fields of design. Besides the adoption from other fields, a variety of factors have been found to influence designers during the design process, such as historical, social, aesthetic, cultural, psychological, economical and technical (Au, 2003; Stone 1999).

1.4 Research Problems

Many studies indicated that the creative design process may vary among different factors and stages. The focus or emphasis on each process also varies according to the design field. The nature of a potential problem in fashion design is generally similar to the practical and function-oriented nature of architecture and industrial product design. The textile design is somewhat related to the purpose of aesthetic and decorative art forms. Although the two design subjects may be studied separately, they are always considered as one. Textiles are an essential element of conceptual fashion design. The symbiotic relationship that exists between fashion and textile design is often considered inseparable to fashion conceptualists.

The creative process is central to the work of designers, but research on local conceptual fashion designers and their holistic approaches to design processes is limited. What is the interconnectedness between all applied design fields and conceptual fashion design? Are there any underlying models of design processes in conceptual fashion design? If yes, will

this model generic to the conceptual fashion designers in Hong Kong?

1.5 Objectives of the Study

The purposes of this study are: 1) explore the identification of conceptual fashion design and its creative system, 2) develop a theoretical framework of design processes that presents a series of creative actions in conceptual fashion design and 3) develop a model of design processes that is generic to conceptual fashion design, by rationally integrating professional knowledge from different design domains into a systematic model.

This study outlines the major features of leading design processes used in architecture design, industrial product design, and fashion and textile design. Different categories of design process models are literally studied and referenced for the purpose of understanding the development of the theoretical framework of design processes of conceptual fashion design in Hong Kong.

Finally, a systemic model of design processes in conceptual fashion design which is generic to Hong Kong fashion conceptualists is introduced in this study. By applying this model, a conceptual fashion collection was developed and exhibited to the industry. The exhibition of this collection was valuable in providing a conceptual framework of the development process of conceptual fashion design, inspiring designers' innovation and perfecting their design.

1.6 Research Questions

In this study, seven major research questions guided the development of inquiry techniques and observational instruments.

- 1) How do fashion conceptualists analyze the needs of new fashion?
- 2) What are the requirements for fashion conceptualists to fulfill?
- 3) How do fashion conceptualists set up the goals for their collections?
- 4) What are the sources that fashion conceptualists use for their inspirations?
- 5) How do fashion conceptualists synthesize their idea selections before implementing design plans?
- 6) How do fashion conceptualists evaluate their new designs?
- 7) How do fashion conceptualists deal with feedback loops and continuous evaluations?

1.7 Significance of the Study

It is important to thoroughly understand the design process, and the emergence and development of conceptual fashion design in order to provide well-developed studies as a means to benefit local fashion and textile industries. With the adoption of the proposed model of design processes in conceptual fashion design, fashion conceptualists in Hong Kong can easily understand 1) the circulation of each stage in the conceptual fashion design process, 2) the interconnectedness and co-relations between the “three dimensional stages” within the model of design processes and 3) the completed systemic process of

design within this domain.

The proposed model of design processes is recommended to conceptual fashion designers, as well as both fashion and textile designers of different cultural backgrounds. They will have a better understanding of the similarities and differences between one another so as to refine their own creative thinking and design processes. The fashion collection will also be valuable in providing a conceptual framework of the development process of conceptual fashion design, as well as inspiring designers' innovation and perfecting their design. Designers will therefore be able to make their designs more successful with a more conceptual, experimental and process-driven approach.

Students and educators in all design fields are encouraged to identify and adopt the proposed design process model to create innovative collections.

1.8 Methodology

In this research, a 5-step approach was used with appropriate research methods formulated and adapted with an aim to obtain specific planned outcomes. Table 1.1 shows the proposed steps and methods used in this research:

Steps	Methods	Planned Outcome
Preliminary Research	1. Literature review	<ul style="list-style-type: none"> • General design fields • Definitions, types & components of design processes • General models of design processes • Study & compare models of design processes • Design theoretical model for the research
Mixed Methods Research Design	2. Type 3. Steps 4. Sample selection	<ul style="list-style-type: none"> • Pilot test • Sample group • Final set of interviews questions

	5. Preparation	<ul style="list-style-type: none"> • & questionnaires • Possible design aspects • Design processes
Data Analysis	1. Confirm, cross-validate & corroborate study findings	<ul style="list-style-type: none"> • Significance of design aspects • Well-accepted design aspects of model building
Model Building	<ol style="list-style-type: none"> 1. Literature review 2. Object-oriented analysis methods 	<ul style="list-style-type: none"> • Suggested ultimate model of design processes
Fashion Collection	1. Integrate models of design processes in conceptual fashion design	<ul style="list-style-type: none"> • Complete fashion collection

Table 1.1: Proposed steps and methods in the research study

1.8.1 Preliminary Research

The study started by reviewing literature of general applied design fields. Various models of design processes were critically discussed and evaluated in profound literature reviews. Against this background, a specific theoretical framework of design processes that presents a series of creative actions in conceptual fashion design was then derived by analyzing and comparing the existing design models in different fields. However, it could only be a structure of the theoretical framework. Specific details of the model were investigated with in-depth interviews and questionnaire surveys.

1.8.2 Research Design Method

A mixed method including both qualitative and quantitative research methodologies was proposed in this study. This approach aimed to address the objectives stated above. The research design was divided in two separate parts during the interviews. The qualitative research method in Part I combined with in-depth interviews, on-site observations and document reviews to find out the aspects that determine the design process. The quantitative research method in Part II was adopted immediately after Part I was complete.

An interview guide was designed to explore design concepts within the main three-dimensional stages of design processes and some additional design knowledge that cannot be found in the literature.

As the target respondents were conceptual fashion designers working for the Asian market, only apparel manufacturers with their own design teams were selected. A directory of target respondents and their correspondence addresses mainly was generated from the database provided by the Hong Kong Trade Development Council and Industrial Department. Another group of respondents included academic professionals and students majoring in fashion and textile design studies of local academic institutes and universities.

1.8.3 Data Analysis

Qualitative and quantitative data were collected and analyzed with an exploratory sequential data analysis approach to further ascertain the practical value and the effectiveness of the proposed model. Priority was given to the qualitative data in this sequence. Data analysis was usually separated, and integration usually occurred at the data interpretation stage. Interpretation typically involved discussing the extent to which the data triangulated or converged.

1.8.4 Model Building

The exploratory sequential data analysis, the significant design relationship and the possible steps of the design process were found in the in-depth interviews, observations and questionnaire surveys. Data analysis was classified into “class” and managed into

“attributes” and “orders”. The exploratory sequential analysis helped present the generic properties of each design aspect systematically. Their integrative relationship and orders of importance were also illustrated.

1.8.5 Innovative Fashion and Textile Collection

Finally, the model of design processes in conceptual fashion design was integrated into the creation of fashion collections in order to show the holistic approach and the orders of importance within the design process, and how it could be rationalized despite the complexities of conceptual fashion design.

1.9 Conclusion

The studies indicated that the creative design process may vary among different factors and stages. The focus or emphasis on each process also varies according to the design field. The nature of the potential problem in fashion design is generally similar to the practical and function-oriented nature of architecture, engineer and industrial design. The textile design is somewhat related to the purpose of aesthetic and decorative art forms. Although the two design subjects may be studied separately, they are always considered as one. Textiles are an essential element of fashion design. The symbiotic relationship that exists between fashion and textile design is often considered inseparable.

All this raised the research interest in investigating the interrelationship of fashion design and textile design and demystifying their creative process.

This chapter summarizes the framework of the research study It introduces the research

problem, research objectives and research questions. The scope and background of the research are outlined in details. The significance of the study is presented; the methodology is briefly described, and the limitations are given.

Chapter 2 Literature Review

2.1 Introduction

A designer's job is prescriptive rather than descriptive. When scientists describe how the world is, designers suggest how it may be. All designers are "futuurologists" to some extent (Lawson, 2006). Like the future, design can never be an end in itself. The design process becomes the way designers respond to this variable problem structure. A structured design process helps designers as markets become increasingly aggressive; companies' use of team formats for solving problems is increasing, and developing fashion products becomes more complex. Therefore, studying how controlling and varying these design processes is one of the most important skills a designer must develop.

This chapter documents and tracks the emergence and development of conceptual fashion, exposing the interdisciplinary practice at the edges of the fashion discipline. The dimensions of creativity theories and models of design process in different design disciplines are explored in order to develop a background for the study of creative activities within the domain of conceptual fashion design. Against this literature background, a theoretical framework of design processes that presents a series of creative actions in conceptual fashion design is developed.

2.1.1 Cultural Shift

The past two decades see the world of fashion and textile design increasingly reliant on one another. Today's fabrics, because of their production and applications, allow designers to

have greater freedom to explore issues (for example, LED fabric), besides the conventional silhouette and style. Fashion designers understand that the future of their profession lies to a great extent in the selection of fabrics. Advanced textile technology yields new aesthetics, tactile qualities and performance capabilities. Traditional crafts such as knitting, weaving, embroidery and intricate hand detailing are employed alongside sophisticated new treatments. High technology coating, laser-cutting, the latest microfiber fabrics, shape memory alloys and technical clothes are appropriated from industrial applications. Against this background, textile's engagement with innovative fashion design is surprising and yet the hybrid forms generate revolutionary results. The subjects of fashion design and textile design become more diverse, collaborative and interdisciplinary. Some high-end designers further react against the commercial focus of contemporary fashion, deviating from traditional fashion cycles, seasonal restrictions and market-led processes towards a more conceptual, experimental and process-driven approach.

2.1.2 Conceptual Fashion Design

There is an increasing number of fashion designers exploiting art, architecture, product and performance contexts as well as adopting conceptual-related and interdisciplinary methodologies in their production, which is illustrated in the works of designers such as Alexandar McQueen, Hussein Chalayan, Rei Kawakubo, Martin Margiela, Issey Miyake, Junya Watanabe and Vitor & Rolf. These designers have adopted a conceptual approach, and shown their works in galleries, and also non-traditional and emergent fashion spaces.

They utilize a range of media and processes to communicate their ideas and continually extend their methodologies.



Figure 2.1: Alexandar McQueen (left) and Hussein Chalayan (right)



Figure 2.2: Martin Margiela

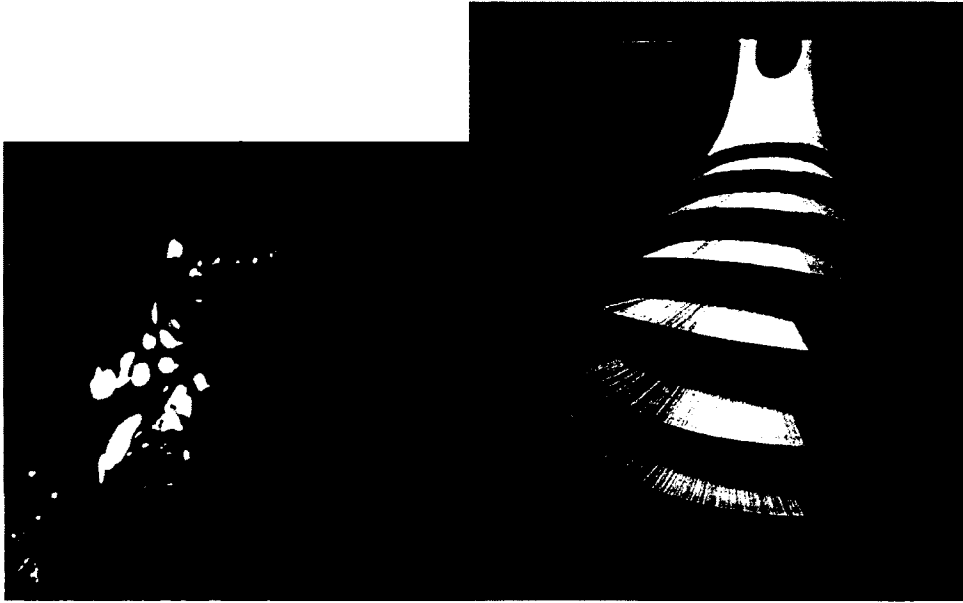


Figure 2.3: Hussein Chalayan (left) and Issey Miyake (right)



Figure 2.4: Junya Watanabe (left) and Vitor & Rolf (right)

These fashion conceptualists insist on a *holistic approach* to the design of their collections, which includes a key role in originating and monitoring the design concept, the development of radically innovative fabrics and its patterns and sculptures, and their method of communication with dramatic presentation.

Some of the most spectacular holistic approaches can be seen in the works of Alexander McQueen and John Galliano who utilize fantastic narratives, visualizations of characters and scenarios that directly relate to the ideas behind the collections. They have used novel fabrics, dramatic silhouette, theatrical cat walking and music setting to tell stories and create drama around the collections. Examples are wide ranging from Galliano's high-drama Dior S/S 2007 *Madame Butterfly* collection or his Fall 2007 collection inspired by Parisian street life in the 1910s and 1920s, to Alexander McQueen's performance of a lone model wearing a white dress and revolving on the stage as industrial spray-painting machines sprayed her in black and yellow graffiti (McQueen, *Untitled*, S/S 1999).



Figure 2.5: John Galliano's Madame Butterfly collection, Dior S/S 2007



Figure 2.6: Untitled collection by McQueen, S/S 1999

Rei Kawakubo for Comme des Garçons has dramatically influenced the Western perspective of body adornment and the meaning of clothes, as well as the Japanese conception of what it means to be a woman in a male-dominated society. People may not often understand the message that is being communicated in her collection. In fact, journalists who wish to learn the secrets of her thoughts are often given cryptic answers, hence, resulting in more confusion. But Kawakubo's approaches to fashion are full of experimentation and concepts, and she always explores larger issues on future fashion. The journalist Claire Wilcox (2000) commented that fashion designers treated fashion as a serious of conceptual study meanwhile creating beautiful artifacts as their bonus tracks. She helped foster conceptualism in fashion, and her influence can be seen in a wide variety of designers' collections as well.

Kawakubo's work has featured in countless museum collections, exhibitions and publications due to the incredibly artistic perspective she brings to each of her collections. However, she is against the idea of her work taken as art pieces. Instead she emphasizes individualism in her conceptual collections. She stated that "Fashion is not art. You sell art to one person. Fashion comes in a series and is more of a social phenomenon. It is also something more personal and individual, because you express your personality. It is an active participation; art is passive" (Conceptualists, 2002, p.168).

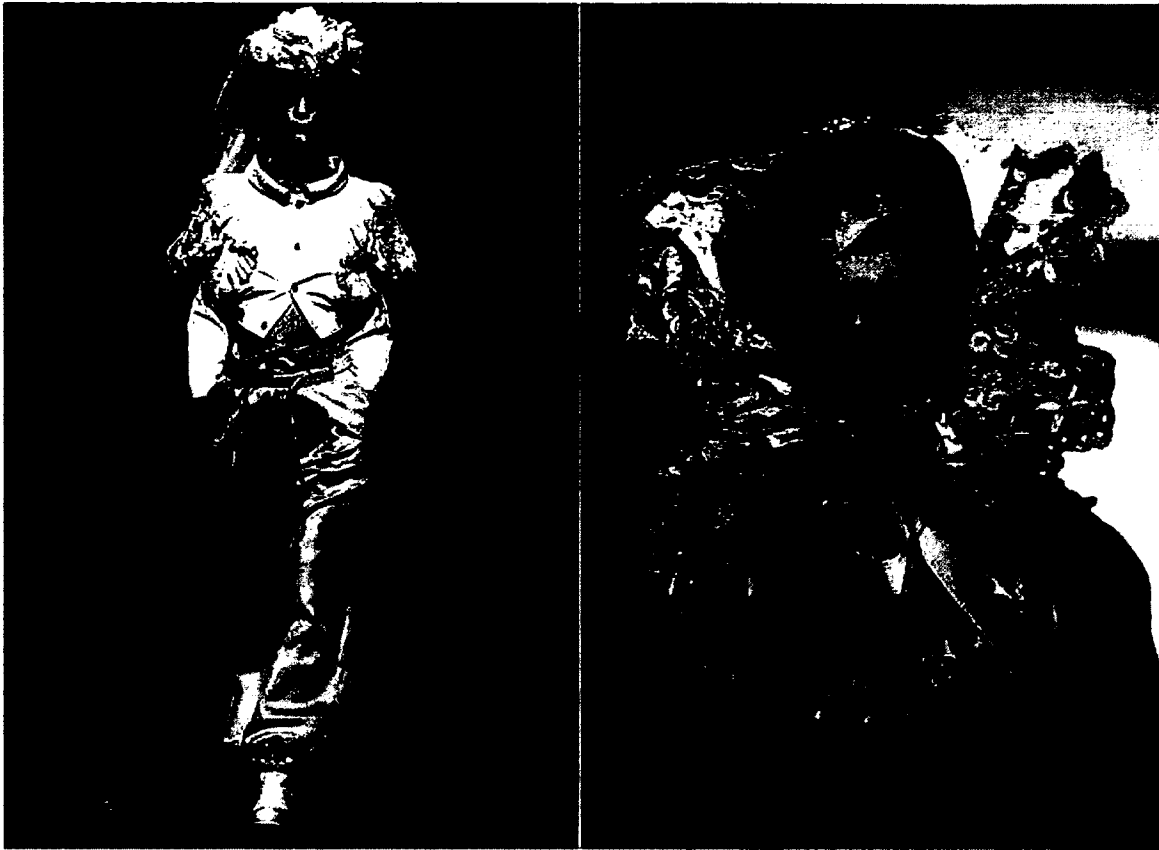


Figure 2.7: Rei Kawakubo for Comme des Garçons

Martin Margiela has, since the foundation of Maison Martin Margiela in 1988, produced clothing that calls into question the fashion system both conceptually and commercially. His designs all bear a discrete white label which is sewn into the garment with four white pick stitches, which are also visible from the back of the garment. These four stitches are the signature of a Margiela garment, but they also signify Margiela's design practice, conceptualized from his interest in making the details of construction visible. It is a form of conceptual fashion design that draws inspirations from the principles of deconstruction established in architecture. Derycke and Van de Veire (1999) explained that the term "deconstructionism" was firstly introduced at the movement in literary analysis proposed

by the French philosopher Jacques Derrida in the mid-twentieth century. Later Bill Cunningham referred the term “deconstructionism” to fashion in the show of Martin Margiela’s S/S collection in 1990.



Figure 2.8: Martin Margiela, S/S collection 1990

Margiela translates his concept of ‘deconstruction’ clearly in the realm of fashion. On his official website (www.maisonmartinmargiela.com), he suggests that “Margiela shows the inside of a clothing item, exposes its construction and focuses on that which fashion anxiously tries to conceal. Unraveling the grammar of clothing, Maison Martin Margiela reveals the strategies of the fashion system as it constructs something radically new.” Margiela not only created his innovation in fashion cycle but also enhance his creation into a radically new perspective to viewers.

In 1997, Margiela exhibited eighteen dressed dummies representing all previous Martin Margiela Collections (S/S 1989 up to A/W 1997/98) at the Museum of Boijmans Van

Benuningen in Rotterdam to reinforce his concept of deconstructionism. Margiela collaborated with a Dutch microbiologist Dr. A.W.S.M van Egeraat, professor of Wareningen Agricultural University, The Netherlands, and treated these eighteen silhouettes with mould, yeast and bacteria for four days before to the show. As the organisms' reaction began, they colored or discolored the garments. Totally opposite to the common gallery set-up, the mannequin dressed in the garments were placed outside the museum hall and viewers experiential the collection tour through the large windows within the art gallery, which was equivalent to many of his collections.



Figure 2.9: Martin Margiela's exhibition at the Museum of Boijmans van Beuningen, Rotterdam, 1997

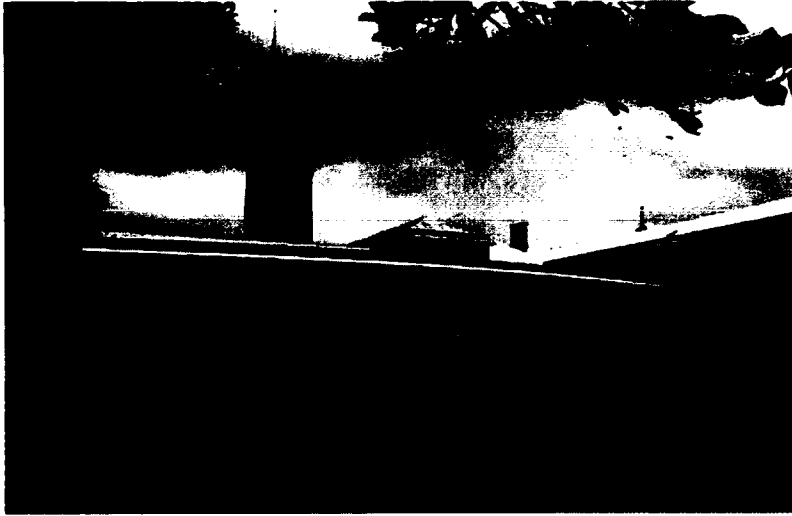


Figure 2.10: Invitation opening, the Museum of Boijmans van Beuningen, Rotterdam, 1997

Chalayan offered one of the clearest examples of conceptual fashion. He selected a context in which the work was to be communicated as an integral part of his concept, method and its execution. His work drew on a diversity of concepts and themes from cultural migration, the relationship between man, technology, architecture and nature, the human body, transience and memory of religious practices. He refined and challenged the boundaries of fashion. He communicated ideas and issues through his designs and selected appropriate communication methods for specific concepts and works. Quinn (2002) stated that the point of Chalayan's departure from conventional fashion was his use of clothing as a site of exploration, and his designs were created as expressions of concepts rather than as garments made with only functionality in mind. As a result, Chalayan's collections were characterized by "a heightened sense of meaning, an allusion to a more intense experience somewhere else, or the promise of a richer, wider horizon to be found" (Quinn, 2002, p.46).

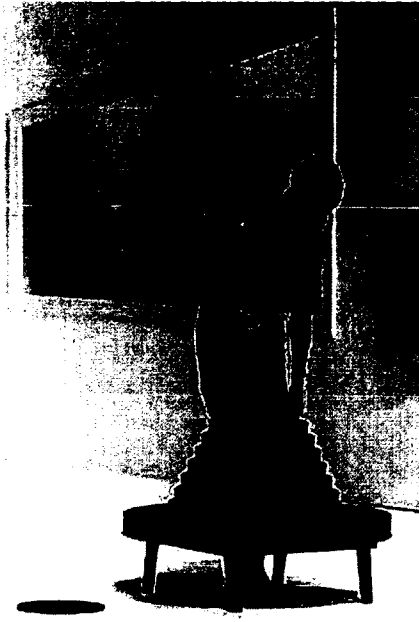


Figure 2.11: Hussein Chalayan's After Words collection, A/W 2000

Victor & Rolf is another label which began their conceptual fashion by exhibiting at the art gallery. They presented "Launch" at the art gallery Torch in Amsterdam in 1996 while they were insignificant to others. The exhibition incorporated a miniature version of all fashion elements, complete with atelier, photo-shoot stages and runways. This early experience given the way for the continue experiment in combine and recombine of these attributes and elements that let Victor & Rolf to reinvent their own language in conceptual fashion. Evans, Caroline and Frankel (2008, p.14) explained that the team of conceptual designers were "semiotic tacticians; image and presentation are fundamental to their work, and self-reference is at the core of their collection," and "they have appropriated the reflexive personae of the art world and used them in high fashion" (Evans, Caroline, and Frankel, 2008, p.14). The team has endeavored to blur the line between art and fashion in their collections.

Victor & Rolf described their conceptual collections as a cyclical system, “a constant questioning of fashion itself as a system- and our own place in it” and “the tension between doubts about our chosen medium, on the one hand, and the hope and desire to create something worthwhile, with beauty and meaning, on the other” (Evans, Caroline, and Frankel, 2008, p.33).

They successfully created meta-fashion about the role of clothing by showing typically high-concept, showmanship runway presentations. One significant example of their unusual approach is “The Fashion Show”, which served as a comment on the over-the-top hype of the fashion show. Hutcheon (1980) described the show as “full of snobbery, exclusivity and decadence”. Evans and Frankel (2008) further explained that “each model was dressed as a walking event, ‘a microcosm’ of Victor & Rolf, harnessed to independent lighting and sound systems suspended from their very own scaffolding rigs” (Evans, Caroline and Frankel, 2008, p.196), the fashion show was an entirely topsy-turvy presentation of “Upside Down” from S/S 2006, in which Victor & Rolf twisted the fashion show “Upside Down” conceptually and also literally in front of their viewers. The garments were designed to suggest that they were upside-down with the head-openings towards the floor, the hems at the shoulders and around the necks of the wearers. Other examples include a provocative all-black show (including the model’s faces), and a presentation featuring, on a revolving turntable, a single model who was layered like a Russian matryoshka doll.



Figure 2.12: Victor & Volf

Iris van Herpen is another creative fashion conceptualist who stands for reciprocity between craftsmanship and innovation in technique and materials. She focuses her work on a more conceptual, artistic and experimental approach. Van Herpen (2010) regards her collection as an artistic expression instead of a commercial focus of contemporary fashion, “In all my work I try to make clear that fashion is an artistic expression, showing and wearing art, and not just a functional and devoid of content or commercial tool” (Van Herpen, 2010). Fabio (2010) further explained that Van Herpen’s works are intended to show that fashion can certainly have an added value to the world, that it is timeless and its consumption can be less important than its beginning. In the official website (irisvanherpen.com), Van Herpen

(2010) expressed that “wearing clothing can create a very exciting and imperative form of self-expression”.

Van Herpen took her fascination in the secrets and invisibility of water as the foundation of her S/S 2011 collection “Crystallization” as part of the Amsterdam International Fashion Week. She conceptualized the antithesis of structure and the chaos of water splash in the collection, imagining the transformation of water to crystal, soft and fluid as water, as opposed to hard, mathematical structures such as ice crystals. This process was not only translated visually, but also in the design process:

“I am fascinated by the fact that there are secret lines hidden in totally transparent and liquid material. Life appears at the moment of freezing, when crystals form. Only then becomes the underlying symmetry and structure visible.”^[1]

[1] Quoted from the interview with Van Herpen (2011) in the Amsterdam International Fashion Week 2011 on the online fashion resource website ftape.com.



Figure 2.13: Iris Van Herpen's Crystallization collection, S/S 2011

Iris van Herpen continued to bring conceptual opposites to her S/S 2011 collection, such as handcrafted pieces, jointed with novel techniques. The designer collaborated with the leading New York-based MGX by Materialize (production) and well-known architect Daniel Wright in a project of 3D printing. And from the collaborations with Ecco leather, Rem D Koolhaa's shoe-line United Nude and choreographer Nannie Lenning, van Herpen manipulates materials into structural explorations that are usually reserved for industrial design. Iris van Herpen's blending couture with technology definitely attracts attention to the conceptual couture-tech courtship in the field.

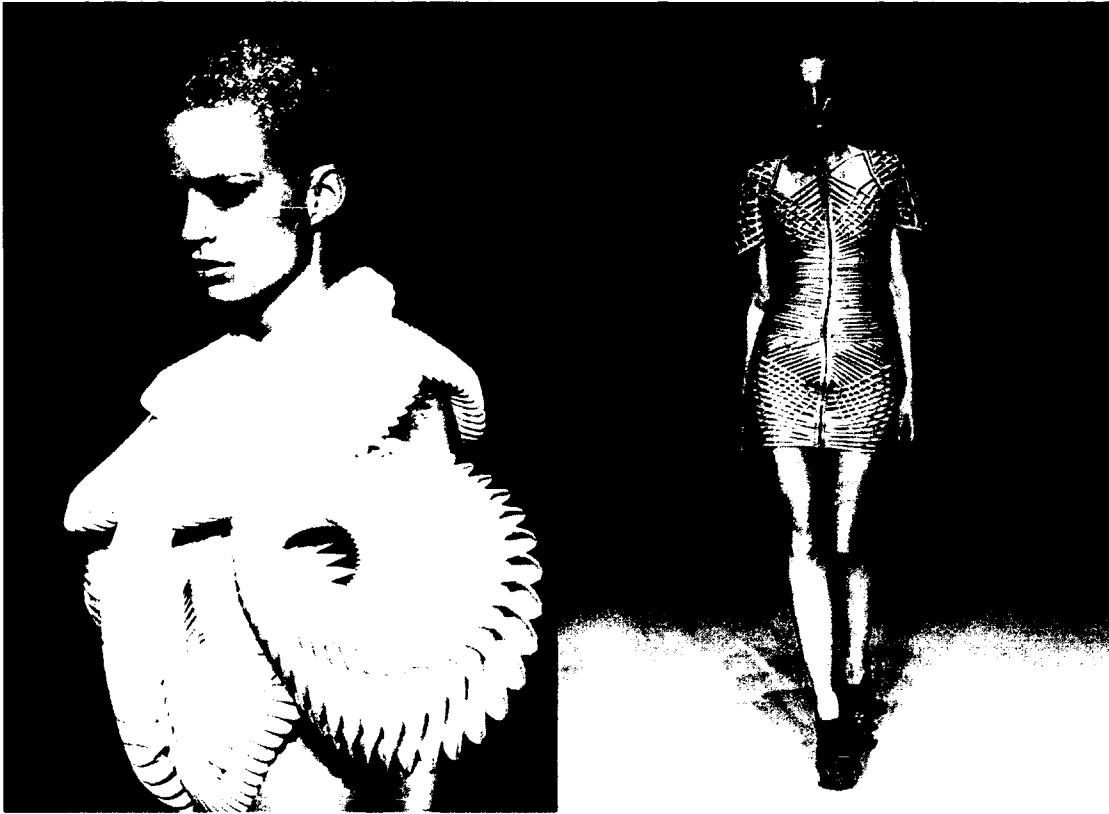


Figure 2.14: Iris Van Herpen's Crystallization collection, S/S 2011 (left and right)

Michael Kampe is a new talent in conceptual fashion design. Moreno (2011) stated that he has not only caught his viewers' attention, but also the likes of Viktor & Rolf, who have been impressed by his 3D work with fabrics and denim treatments used in his A/W 2011 collection entitled "Exploded View", where he not only included three-dimensional designs but also experimented with unusual treatments on denim. He has conceptualized the "exploded view drawings" of engineers and blueprints used by engineers; inspired from the artwork of Naoya Hatakeyama, E.V. Day, Lucy McRae, Florian Baudrexel, and Lebbeus Woods into his collection. Kampe's aesthetics were strongly influenced by urban wear, contemporary art and culture amongst interesting shapes, print designs and new fabric treatments and prints. Like other fashion conceptualists, Kampe reacted against the

commercial focus of contemporary fashion and market-led processes, focused on a more conceptual, individual, and experimental design approach: “The philosophy behind my collection is to show new directions in urban and denim wear – far from mass-market production, focused on an individual, single piece” (Kampe, 2011).



Figure 2.15: Michael Kampe’s Exploded View Collection, A/W 2011 (left and right)

2.1.2.1 Emerging conceptual fashion design

Increasing attention has been given to the revolutionary conceptual design in the fashion industry. A number of influential designers step out of the commercial side of fashion in reaction to the need for constant renewal. They embrace a slower approach to fashion in keeping with their personal philosophies and approaches. This “cultural shift, exploration

and cross over” phenomenon was also discussed by designer Simon Thorogood. Thorogood (2004) stated that the cultural shift can be seen to be an extension beyond the development of fashion exhibitions, academic and theoretical studies in fashion, and the growing acceptance of fashion as a conceptually and culturally significant practice.

Although the number of conceptually led designer is still relatively small, their work becomes increasingly significant. The emerging opportunities for funding and project sponsorship for conceptual and interdisciplinary projects also suggest that there will be more fashion designers working in new arenas with conceptual and experimental methods.

2.2 Context: Proportions of Creativity

2.2.1 Defining Creativity

Creativity is defined as a ‘highly complex context’ (Mumford and Gustagson, 1998; Perkins, 1988). Designers are always challenged by their limitless yet complicated thoughts and ideas during the ‘creative process’, which is a term used to describe the conceptual steps involved in the development of innovative solutions to problems (Fiore and Kimle, 1997). Inherent limitations of design and production further complicate designers’ directions. In order to answer to this complexity, a multidisciplinary community of creativity researchers and theorists have devoted much effort to understanding its peculiarities. Their investigations resulted in theories and models that try to describe the underlying cognitive, social, and cultural variables and the creating process that regulates the generation of creative products.

As postulated by Poincare (1956) in his early writings on creativity, the concept of 'inspiration' or 'creative incubation' fore-fronted the important role of the subconscious in the stages of creative thinking, particularly when solving mathematical or scientific problems. Articulated by de Bono (1977) in his encouragement of techniques of lateral thinking, Koestler (1964) posited creativity as a universal faculty, not restricted to special individuals, whereas theoretical physicist David Bohm (1998) positioned creativity within the quantum sphere, therefore attempting to reconcile the fundamental basis of both artistic and scientific creativity.

2.2.2 The Creative Person (The Designer)

De Cock (1996, p. 207) described that the creative individual is somewhat a "point of energy in a broader web of cultural processes of influence and engagement." Gardner (1994, p.144) pointed out that many recent works have focused on the "psycho analytical study and psychometric testing of individuals as part of a search for creativity traits and personalities."

In response to the measurement of the creative abilities of these creative individuals, many psychologists have proposed experiments and tests. Research results have claimed that creative individuals show a specific cognitive style or trait (Eysenck, 1994; Amabile, 1990; Welsh, 1975).

Gardner's (1994) experiment on the cognitive profile of creative individuals confirmed that they are "highly energetic and extremely demanding on themselves" (Gardner, 1994, p.149-150). These creative individuals may be strong with the ability to access childlike traits which let them to think outside from conventions and propose some unique questions that

might have been unnoticed. However, Getzels and Csikszentmihalyi (1976, p. 38-39) suggested that “independence might support the activity of divergence from known paths.” Stein (1974) argued that the characteristics of creativity cannot be measured. Amabile (1990, p.84) further argued that creativity was claimed to the development of an individual’s cognitive style and she supported the belief of “a regular pattern of irregularity”. Simonton (1995, p.466) indicated that the “acquisition of a rich base of *knowledge* supports an individual’s ability to make associations that lead to *ideation*.” Gardner (1994, 147-149) suggested that creative achievers establish “adequate knowledge of a domain over a decade of hard work, dedicated learning, practice, and experimentation.” Baron (1969, p.3) supported this observation and argued that “great insights only occur in minds that are amply prepared through saturation in the relevant scholarly disciplines”. Amabile (1990, p.82) agreed the above statement by stating “how you use knowledge is as important as the amount of knowledge”.

Numerous researchers emphasised the significance of an individual’s built-in motivation for achieving success in creativity; the actual process, task or activity were emphasised in their research study (Amabile, 1990; Hogarth, Gombrich, 1984; Abetti, 1996). It has been suggested that “creative individuals are intrinsically motivated to search within a domain primarily because it allows them to generate creative responses to its particular problems” (Weisberg, 1986, p.73).

Recent research at the University of Toronto and Harvard University has found that creative people are more open to incoming stimuli from the surrounding environment, and as a

result are more receptive to new possibilities (Carson, Peterson, and Higgins, 2003). Black and Baker (2005) stated that this phenomenon confirms the empirical evidence from observation of artistes and designers' creative working processes, in which elements from a wide range of sources are synthesised into an original personal vision.

2.2.3 The Creative Product

Gardner (1994) suggested that a creative product is generic terms that can be described any scientific theories, artworks or performance art. DeCock (1996, p.205) argued that "it is not possible to identify empirically the construct that is creativity, and then an emphasis on identifying the nature of creative products seems more relevant." Creative works symbolize the theoretical and practical design processes which it gives a means of critical assessment. Martindale (1994, p.160) indicated that "creative work also embodies psychophysical qualities such as novelty, complexity, surprise, unpredictability and meaning." Amabile (1982) proposed that products seem the simplest conservative, "products are the most easily observed discrete units and probably the least to disagreement" (Amabile, 1982, p.66) Richards and DeCock (1994, p.64) suggested that researchers should "supplement or replace more formal paper-based tests with longitudinal investigations that collect evidence of creative outputs."

2.2.4 The Creative Process

The various concepts of creativity such as rule-breaking, innovative juxtaposition and the four-stage process model of individual creativity (preparation, incubation, illumination and verification based on Poincare by Wallas in 1926) form a useful background for this study

into the creative processes of conceptual fashion designers who often involve several collaborators from different disciplines.

Brennan (1990) began a presentation of his group's work by showing the "basic" model of design processes in Apple Computer's Creative Services department. Brennan (1990, p.10) captured important aspects of the design process:

1. The potential for play
2. Its similarity to a "random walk"
3. The importance of iteration
4. Its irreducible "black-box" nature

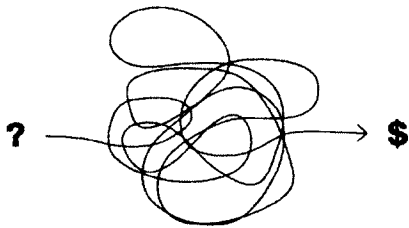


Figure 2.16: Tim Brennan's (1990) Design Process

Gardner (1994) highlighted the problems related with creative process models build-ups. He identified five different types of creative activity which should be addressed for the construction of a creative process model (Gardner, 1994, p.152):

- 1) The solution to a well-defined problem;

- 2) Devising an encompassing theory;
- 3) The creation of a frozen work;
- 4) The performance of a ritualised work;
- 5) A high-stake performance.

Gardner (1994) argued that the items number 1 and 2 replicate the type of research process connected with scientific actions. The items number 3 and 4 are associated with artistic performance. And the last item indicates activities within a specific area.

Kneller (1966, p.47) indicated that the generation of ideas in each of these areas is based on a four-stage process of *preparation, incubation, illumination and verification*:

- 1) *Preparation*: the first stage represents a period when the creative individual spends most of their time on thinking about a problem. In this stage, creative individuals have a capability to recognize the correct questions instead of the correct answers (Weisberg, 1986; Einstein and Infeld, 1938). The early proposal of problem-solving could caused a series of problem standoff instead (Seifert, Meyer, Davidson, Patalano and Yaniv, 1995).
- 2) *Incubation*: the second stage indicates a period when the creative individual seems to depart from the problem. He/She works on problem-solving at a subconscious level. This rest period may make available a chance to refresh the mind and expose it to other stimulations.

- 3) *Illumination*: the third stage typifies a fresh way of looking at a known problem or phenomenon in such a way that its essential features are grasped (Csikszentimihalyi and Sawyer, 1995, p.329). New and bright stimuli resolve individuals' bottleneck through the combination of ideas in new ways.
- 4) *Verification*: the fourth stage is produced as part of the creative process must be identified as useful. Therefore verification and testing of ideas are necessary activities and the process mostly relies on the experience of the creative individual and the field.

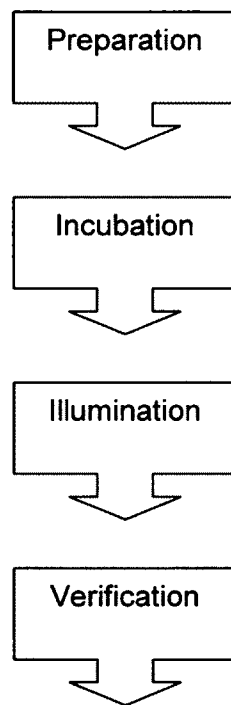


Figure 2.17: The four stages of the creative process (Kneller, 1966)

2.2.4.1 The associative basis of creative process

A number of theorists have attempted to describe the cognitive processes that lead to an *eureka moment* - "when a possible solution to a problem is recognized" (Moxey and Studd,

2000, p.177). A number of researchers suggested that “the mind is a product of biological evolution composed of modular intelligences” (Cosmides and Tooby, 1992, p.163-228) that interact and enable the cross-fertilization of ideas to take place. This is termed as *cognitive fluidity* (Mithen, 1996, p.73-94; Gardner, 1983, p.279), which supports “a creative mind in which a network of multiple intelligences work together effortlessly” (Gardner, 1994, p.149).

This neurological perspective seems to indicate that a selective combination in problem-solving proposal is a necessary stage in the creative processes. (Davidson, 1995; Perkins, 1988; Koestler, 1975) It arrived through the “imaginative toying of idea combinations prior to the moment of insight” (Isaak and Adma-Just, 1995, p.306). Hirshberg (1998, p.23-25) suggested a similar statement which ideas come from associations that overlap, collide and congeal “into a new whole” and that “synthesis is the principal impulse of the act of creation”. Boden (1996, p.117) described how this associative process relies on “strange blending” of ideas that are “merged and subtly transformed”. Koestler (1975) described *bisociation* as a cognitive-mixing process, which creative ideas are drawn together from different domains. Mednick (1962) also suggested a comparable creative process in which the “juxtaposition of psychical entities is joined through combinatory play and in which this fusion of distant realities generates creative sparks” (Mednick, 1962, p220). Partridge and Rowe (1994) again suggested that the Japanese term *Haiku*, which indicates “the combination or juxtaposition of two objects or events” is central to the action of creativity (Partridge and Rowe, 1994, p.3).

Mednick (1962) suggested that the combination of elements can happen during a process of “serendipity, mediation or ‘best-guess’ processes” (Mednick, 1962, p.221). In order to form associative elements which underlies creative-idea-generation techniques, including 1) the use of metaphors and analogies (Finke, 1995), 2) brainstorming (Osborn, 1963), 3) synetics (Baron, 1969; Lawson, 2006), and 3) morphological analysis (Stein, 1975).

However, Seifert et al. (1995) presented a more abstract neurological explanation to creativity, the *Opportunistic-assimilation Hypothesis*, which “the combination of ideas contributes to the resolution of problem impasses within a mind that acts as a networked substrate for insights” (Simonton, 1995, p.480).

Seifer et al. (1995) indicated that failure at solving problems at the initial preparation stage would cause a series of *red flags*. The term *red flags* indicate the impasse stage of the process. A break from the problem can prepare one for the resolution of an impasse by encouraging and allowing access to other stimuli.

Simonton (1995) suggested that “a rich environment in which considerable amounts of intellectual and cultural stimulation are present will encourage the generation of a more heterogeneous array of associative variations” (Simonton, 1995, p.480-481).

Creative individuals received new information during the creative process will create an impasse unconsciously, and to blend it at the preconscious level with the new stimuli, therefore to break through the surface of the individuals’ conscious.

Illumination therefore occurs at which this new piece of creative information and ideas are interpreted, compared and synthesized. The excitement that the creative individual feels at this point is “related to a sense of relief or an appeal for our sense of aesthetics, impressed by the beauty and simplicity of the solution” (Weisberg, 1986, p.21). Seifert et al. (1995) described this moment as the *eureka moment* (Seifert et al., 1995, p.118) and Mednick (1962) indicated the outcome as *creatrix* (Mednick, 1962, p.220) which designate to a new outcome that arises out of a combination of *shattered fragments of memory* (Boden, 1996, p.117).

2.3 Context: Creative Process in Design

2.3.1 Defining Design

Many forms of design deal with both precise and vague ideas, call for systematic and chaotic thinking, and need both imaginative thoughts and mechanical calculation. However, a group of design fields seem to lie near the middle of this spectrum of design activities. The architecture design, engineer design, fashion design, textile design and product design all require the designer to produce well-functioning end products aesthetically. Therefore, design can be viewed as a creative, magical, intuitive and elusive process (DeJonge, 1984; Hanks, Belliston, and Edwards, 1977) and as a performance of a very complicated act of faith (Jones, 1992).

Design is recognized as a process of pattern synthesis rather than pattern recognition. Lawson (2006) noted that designers do not aim to deal with questions of what, how and why, but deal with what the problem might be, could be and should be. Designers may be

seen to prescribe and create the future. Therefore, they are not to exhaust analysis, but to synthesise ideas, to create a boundary around a problem, to eliminate extraneous variables and to suggest a possible solution (Lawson, 2006). Darke (1979) described designers as a “primary generator” which both defines the limits of a problem and suggests the nature of its possible solution.

2.3.2 Creative Process in Design

Designers are always challenged by their limitless yet complicated thoughts and ideas during creative thinking and design processes. Inherent limitations of real situations of design and production further complicate their directions. A controlled design process is advantageous because it confines the complexities of design nature and thereby achieves optimum performance (Chapman, Bahill & Wymore, 1992; Medland, 1992).

Many researchers have tried to chart a route through the process from beginning to end. The common idea behind all these ‘maps’ of the design process consists of a sequence of distinct and identifiable activities which occur in predictable and identifiably logical order. In fact, there are considerable numbers of design process models which have been developed and mutually applied in between design fields.

However, “literature on the creative process in design has mostly been confined to studies within disciplines such as product design and architecture design” (Partridge and Rowe, 1994, p.11). Design researchers have explored the process of design throughout history (Archer 1969; Groot 1969; French 1985; Kim 1990; Lawson 1990; Suh 1990; Pugh 1991; Roozenburg and Eekel 1995; Ulrich and Eppinger 1995; Rachel Cooper 1987; Pahl and Beitz

1996). The models discussed in this study were selected because of their historical significance from different design disciplines (architecture design, engineering design and industrial product design, quality management and fashion design) and their continuously expanding framework from short mnemonic devices, such as the 4Ds (define, design, develop, deploy), to elaborate schemes, such as Archer's 9-phase, "systematic methods for designers", which facilitate our understanding of the design process.

And in recent years, Eckert and Stacey (2001) and Worden (1994) have contributed to the design process debate in the contexts of fashion design and new media design respectively. A debate with a high commercial relevance to design innovation is a much sought-after commodity in the burgeoning 'creative industries'.

2.3.3 Process Archetype: Analysis versus Synthesis

2.3.3.1 *Koberg and Bagnall (1972)*

Koberg and Bagnall (1972) divided the design problem into parts for examination (analysis). They also reassembled the situation based on their understanding of improvements discovered in their study (synthesis). Figure 1 shows all the stages of Koberg and Bagnall's model.

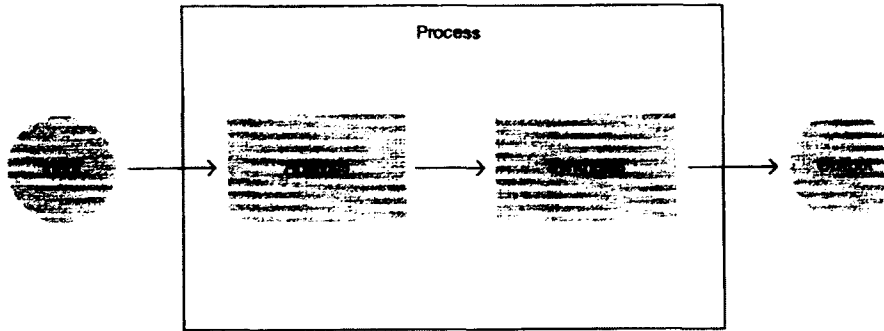


Figure 2.18: Koberg and Bagnall's design process archetype, 1972

2.3.3.2 JJ Foreman (1967)

Foreman (1967) regarded design as problem-solving like Koberg and Bagnall (1972). This stance is typical of the first generation of the design method movement. Foreman introduced the idea of needs and sub-divided the process as follows.

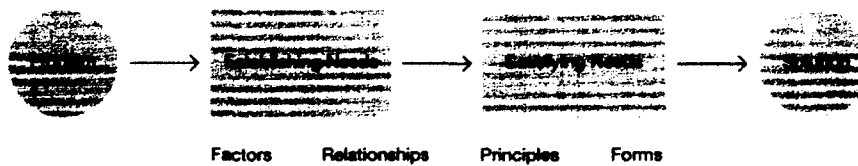


Figure 2.19: JJ Foreman's problem and solution design model, 1967

2.3.3.3 Jay Doblin (1987)

Doblin presented a similar series of expanding processes in his article “A Short, Grandiose Theory of Design”. Doblin’s notion of direct and indirect design reflects Alexander’s (1962) model of *unselfconscious and self-conscious design*.

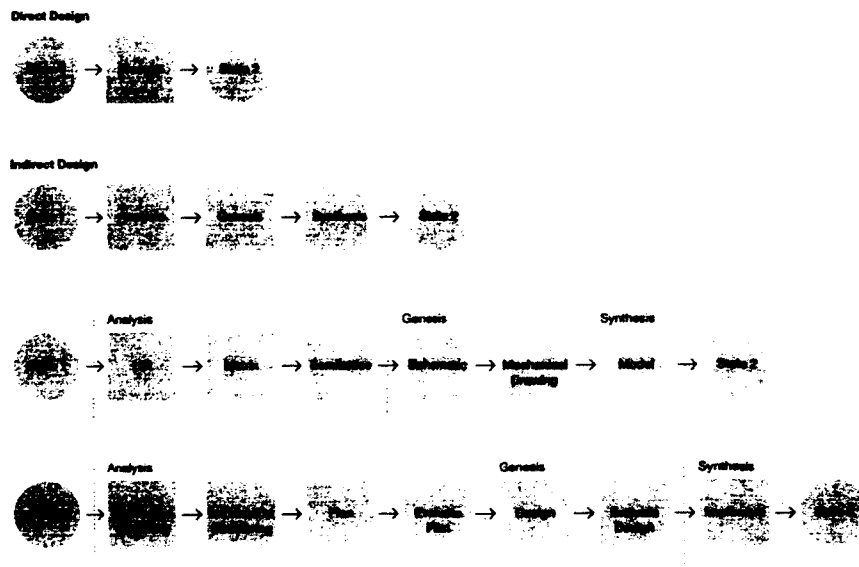


Figure 2.20: Jay Doblin’s matching process to project complexity, 1987

2.3.4 Analysis, Synthesis and Evaluation

2.3.4.1 VDI 2221 (Cross 1990): Decomposition/Recombination

The VDI Guideline follows a generally systemic procedure of first analyzing and understanding a problem as closely as possible, then breaking it into sub-problems, identifying suitable sub-solutions and combining them into an overall solution. Figure 3 shows the model of VDI 2221 from Cross (1990).

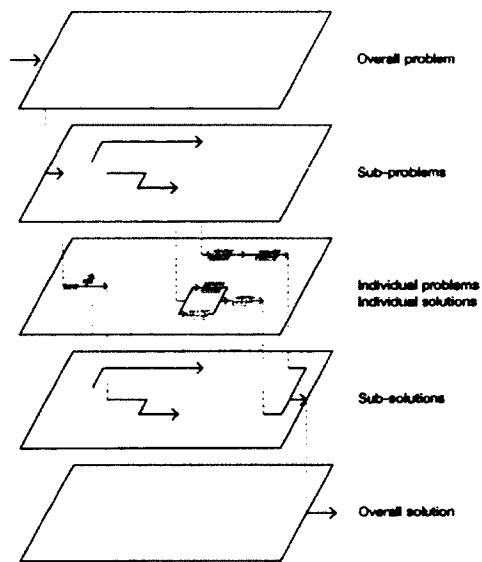


Figure 2.21: Cross's decomposition/recombination (VDI 2221), 1990

2.3.4.2 Niger Cross (2000): Divergence/Convergence

Cross (2000) suggested that the overall aim of a design strategy is "to converge on a final, evaluated and detailed design proposal, but within the process of reaching that final design there will be times when it is appropriate and necessary to diverge, widen the search or seek new ideas and starting points" (Cross, 2000, p.23).

Cross's model claimed that cycles are similar to the iterative process of Marcus and Maver's and the spirals of Boehm's.

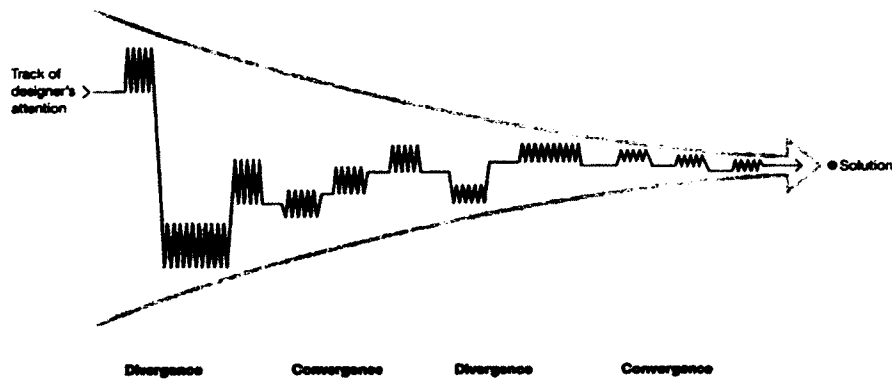


Figure 2.22: Nigel Cross's divergence & converge model, 2000

2.3.4.3 Lawson (1980): Walking process

The classic book *The Universal Traveler* (Koberg and Bagnall, 1981) expands the archetypal two-step process to three, then five, and finally seven steps. Figure 2 shows that the stages and sub-processes of Koberg and Bagnall's model.

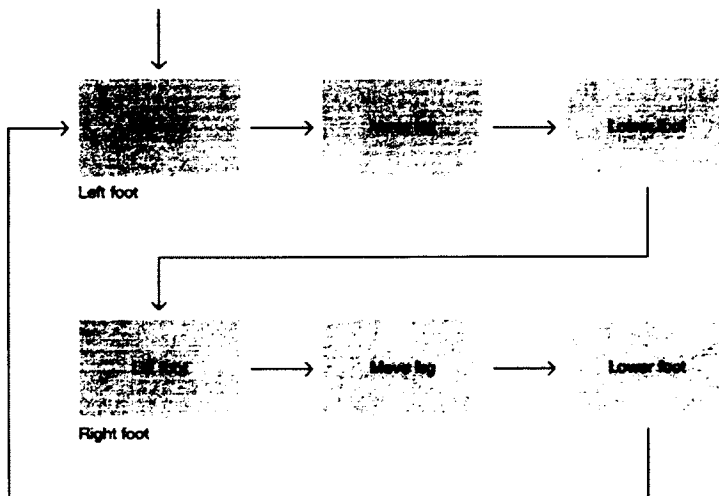


Figure 2.23: Lawson's walking process, 1980

2.3.5 Academic Models

2.3.5.1 Nigel Cross (2000): Four stage design process

Cross (2000) developed the model from the perspective of engineering design. Cross's descriptive model of the design process is based on the essential activities that the designer performs. The end-point of the process is the communication of a design, ready for manufacture. In addition, the design proposal is subject to evaluation against the goals, constraints and criteria of the design brief. The proposal itself arises from the generation of a concept by the designer, usually after some initial exploration of an ill-defined problem space. Cross's model has communication as the final stage.

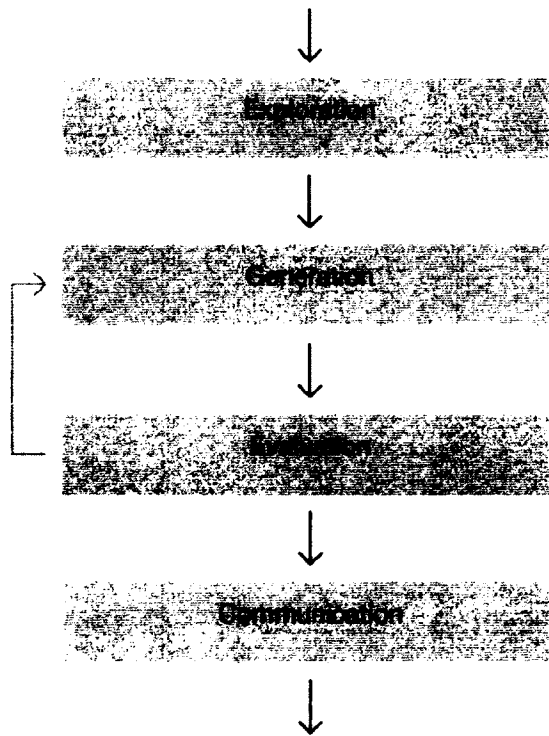


Figure 2.24: Nigel Cross's four-stage design process, 2000

2.3.5.2 *Michael J. French (1985): Engineering design process*

French wrote his model from an engineering perspective. He suggested that the analysis of the problem be a small but important part of the overall process. The output is a statement of the problem and has three elements:

1. a statement of the design problem
2. limitations placed up the solution, e.g. codes of practice, statutory requirements, customers' standards, dates of completions
3. the criterion of excellence to be worked to

Then, in the conceptual design phase, French suggested that the designer take the statement of the problem and generate broad solutions to it in the form of schemes. He indicated that this phase makes the greatest demands on the designer, and there is the most scope for striking improvement. It is the phase where practical knowledge, production methods and commercial aspects need to be brought together.

In the third phase, French suggested the schemes be worked up in greater detail and, if there is more than one, a final choice between them be made. The end product is usually set of general arrangement drawings.

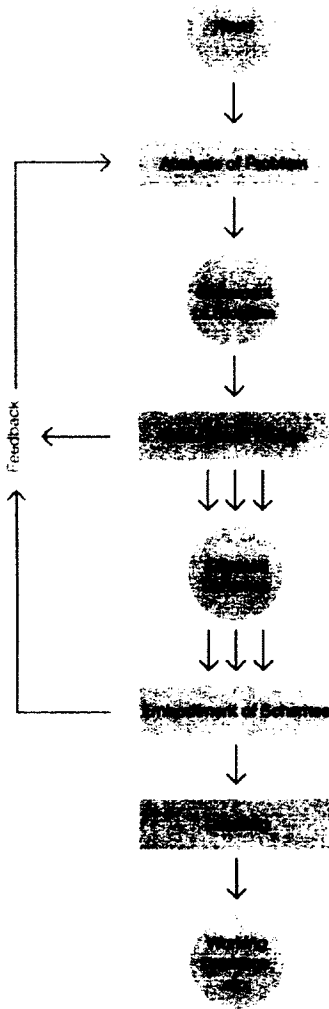


Figure 2.25: Michael J. French's engineering design process, 1985

2.3.5.3 Gerhard Pahl and Wolfgang Beitz (1984)

Pahl and Beitz's model is the general structure of the design process by swamping it in the fine detail of the numerous tasks and activities that are necessary in all practical design work. Cross (2000) referred to this model as "reasonably comprehensive" and compared it to Archer's "systematic method for designers".

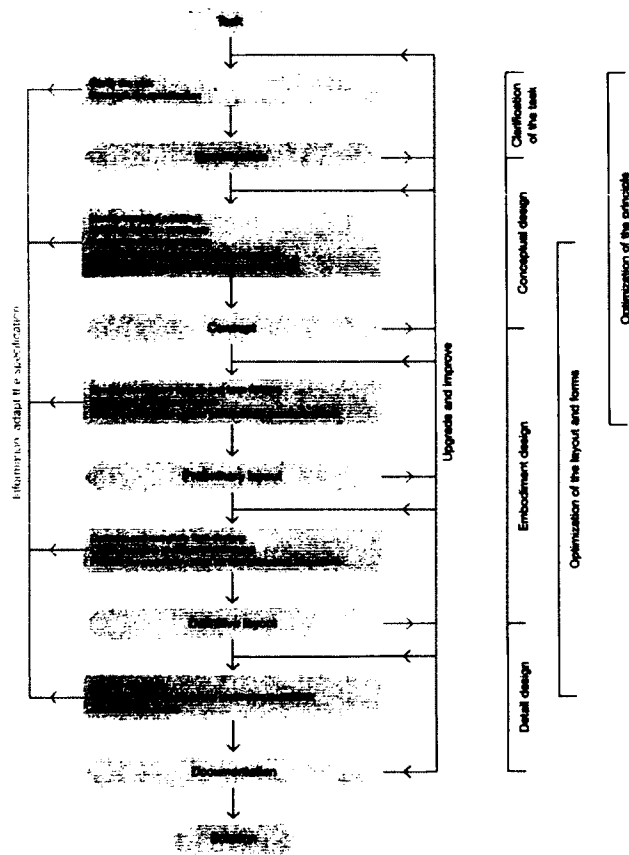


Figure 2.26: Gerhard Pahl and Wolfgang Beitz's design process, 1984

2.3.5.4 RIBA Handbook (1965): Architect's plan of work

Lawson (1965) presented this model in the RIBA (the Royal Institute of British Architects) practice and management handbook. According to the handbook, the design process is described as follows:

1. Assimilation is the accumulation and ordering of general information specifically related to the problem in hand.
2. General study is the investigation of the nature of the problem, possible solutions or means of solution.

3. Development is refinement of one or more of the tentative solutions isolated during phase 2.
4. Communication is the description of one or more potential solutions to people inside or outside the design team.

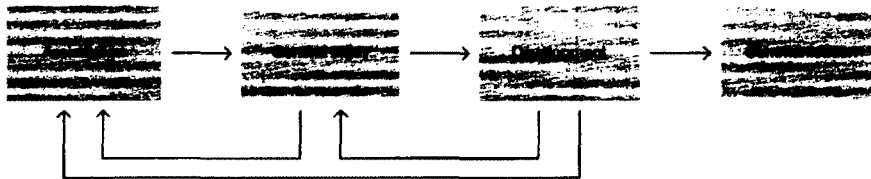


Figure 2.27: RIBA handbook, architect’s plan of work, 1965

2.3.5.5 **Richard Buchannan (1997): Design process and practice**

Buchannan (1997) provided a practical model of design processes for his students. He indicated the importance of repetition of research, scenario building, and visualization in three middle phases of his model.

Phase	Objectives	Characteristic activities
0. Vision & strategy	Discover governing ideas and circumstances Identify important variables, make preliminary decisions	Research Concept planning Strategic design planning, with input from product development partners
1. Brief	Investigation and selection Identify and select the initial focus, which is refined and expanded	Research Scenario building Visualization Project planning Communication
2. Conception	Invention and judgment Develop problem-solving ideas, generate concepts, and select ideas	Research Concept planning Scenario building Early visualization Communication
3. Realization	Development and evaluation Plan and make use of ideas, evaluate for development	Research Concept planning Scenario building Early visualization Communication
4. Delivery	Presentation Present and describe development and provide for realization	Research Concept planning Scenario building Early visualization Communication

Figure 2.28: Richard Buchannan's design process and practice, 1997

2.3.5.6 Bryan Lawson (1980): Creative process

Lawson (1980) compared the designers' creative process to their design process. He suggested that the first stage - 'first insight' (Kneller 1965) - involves the recognition that a problem exists and a commitment is made to solve it. He indicated that design problems are rarely initially entirely clear and much effort has to be expended in understanding them thoroughly. The next phase of 'preparation' involves much conscious effort to develop an idea for solving the problem (MacKinnon 1976). Lawson recognized that there may be much coming and going between these first two phases as the problem is reformulated or even completely redefined. He further suggested that the phase of preparation involve deliberate hard work and be frequently followed by a period of 'incubation' which involves no apparent effort but is often terminated by the emergence of an idea (phase of 'illumination'). In the phase of 'illumination', MacKinnon (1976) once described it as unconscious cerebration during the incubation period. The designer is unwittingly reorganizing and re-examining all his previous deliberate thoughts. Lawson then suggested that by withdrawing from the problem the designer be then able to return with fresh attitudes and approaches which may prove more productive than continuing his initial thought development. Once the idea has emerged, Lawson indicated that the designer agrees upon a final period of conscious verification in which the outline idea is tested and developed.

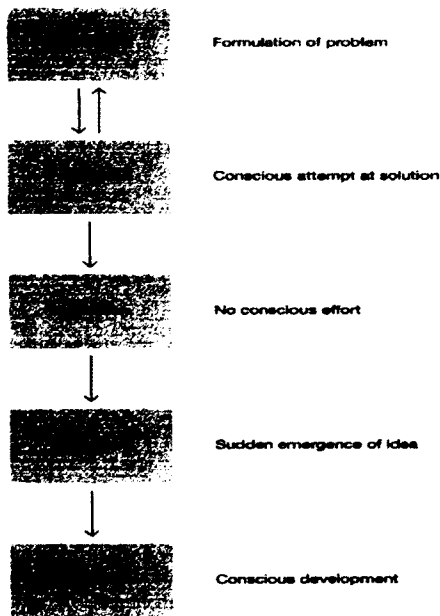


Figure 2.29: Bryan Lawson's creative process, 1980

2.3.5.7 Jane Darke (1978): Primary generator

Darke reported that most architects begin the design process with a simple idea or 'primary generator'. He suggested that this simple idea be used to narrow down the range of possible solutions, and the designer be able to construct and analyze a scheme rapidly. Darke investigated a very close, perhaps inseparable, relation between analysis and synthesis.

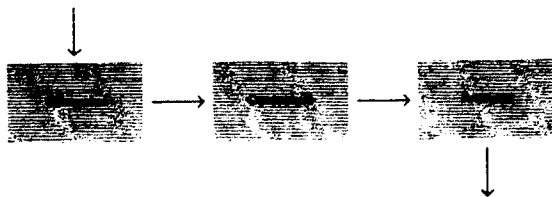


Figure 2.30: Jane Darke's primary generator, 1978

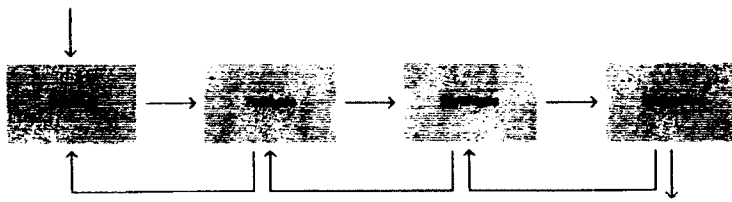


Figure 2.31: Jane Darke's design process, 1978

2.3.5.8 Marcus (1969) and Maver (1970)

For general design process models, evaluation usually follows analysis and synthesis. Marcus and Maver substituted decision as evaluation, casting the design process as a series of decisions. They layered these decisions on three levels - outline proposals, scheme design and detail design. This iterative structure is similar to those proposed by Banathy (1996) and Cross (2000). It is also similar to Boehm's spiral. And the three-level, four-step structure of this model anticipates the structure of the AIGA model.

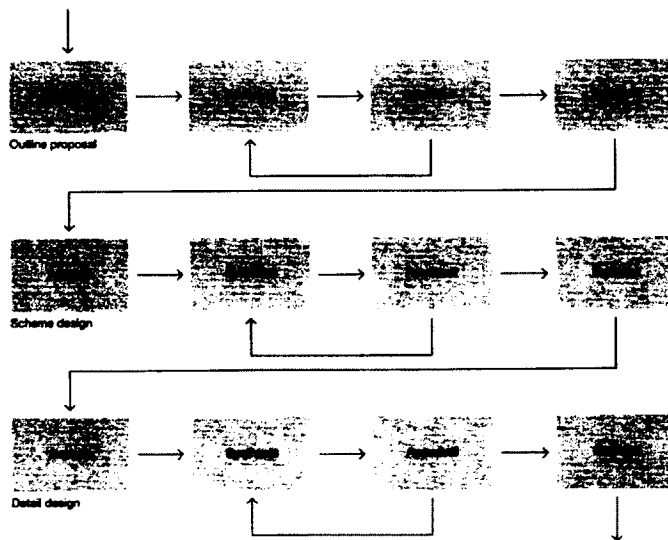


Figure 2.32: Marcus and Maver's design process, 1969-1970

2.3.5.9 John Chris Jones (1970): Design process

Jones first published "Design Methods" in 1970. He used the model for classifying and selecting design methods. Designers might use one or more methods to move from one step to another. Jones noted that the steps decrease in generality and increase in certainty. Jones also provided a scale for describing the applicable range of a method (the left side of the diagram). Designers may apply his scale to the scope of the problem being undertaken. Jones's scale is similar to the models of design scope described by Doblin (1987) and Alexander (1962).

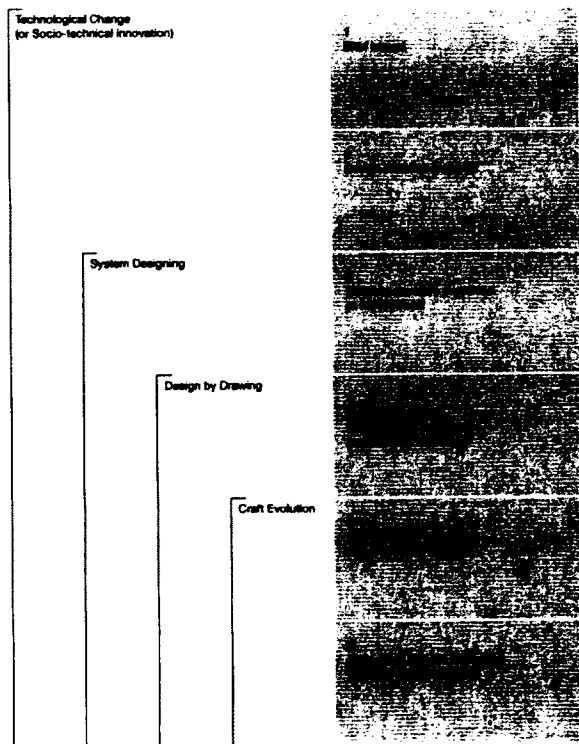


Figure 2.33 John Chris Jones's design process, 1970

2.3.6 Complex Linear Models: “Magic Number 7”

2.3.6.1 *Morris Asimow (1962): Morphology of design*

Asimow (1962) defined the morphology of design as “the study of the chronological structure of design projects.” He suggested that as a design project is initiated and developed, a sequence of events unfold in chronological order forming a pattern. He described design is a progression from the abstract to the concrete, and is a vertical structure to a design project. He also described design is an iterative problem-solving process, which is, in his own terms, a horizontal structure to each design step. Asimow defined the phases of a project (vertical) as feasibility study, preliminary design, detailed design, planning for production, planning for distribution, planning for consumption and planning for retirement.

Asimow (1962) described the design process (horizontal) as the general problem solving process. He continued to describe these steps as analysis, synthesis, evaluation, decision, optimization, revision and Implementation.

In *Introduction to Design*, Asimow (1962) described engineering design and the design process in detail. He indicated that engineering is largely concerned with design. The difference between engineering design and other design activities is the extent to which technological factors must contribute to their achievement.

Asimow (1962), like Alexander (1962), Jones (1970) and Doblin (1987), distinguished “design by evolution” from “design by innovation”. He suggested that the designed products be de

novo compared to the past, and it “creates greater risk and complexity and thus implies the need for new design tools” (2004).

Rowe (1987) he described that Asimow (1962) was a prominent industrial engineer in the 1950s and 1960s. Maldonado and Bonsiepe (1964) introduced Asimow’s model to the design and architecture community, including it in their seminal article “Science and Design” published in the journal, *Ulm* 10/11 (1964).

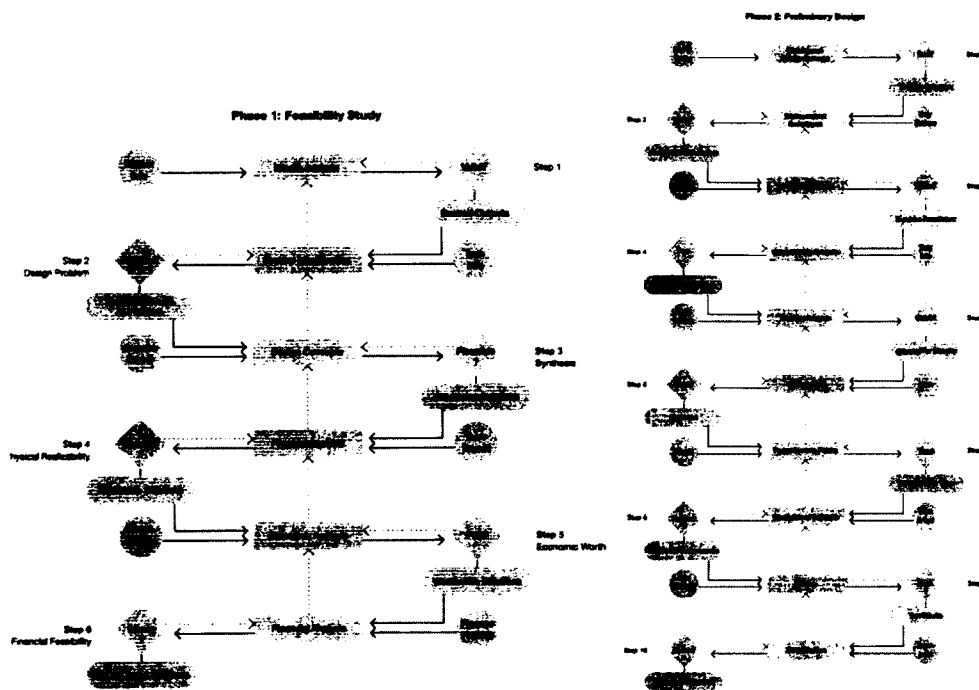


Figure 2.34: Morris Asimow’s morphology of design (1 and 2 of 3), 1962

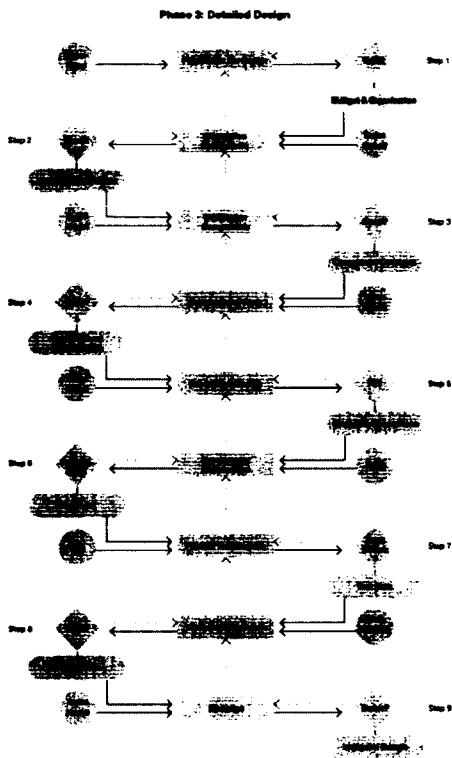


Figure 2.35: Morris Asimow's morphology of design (3 of 3), 1962

2.3.6.2 Bruce Archer (1963-1964): Basic design procedure

Archer (1964) proposed this basic design procedure model as the representative of an emerging common ground within the "science of design methods" while acknowledging continuing differences. Regarding the procedure, Archer (1964) stated that the stages are overlapping and often confused, with frequent returns to early stages when difficulties are encountered and obscurities are found.

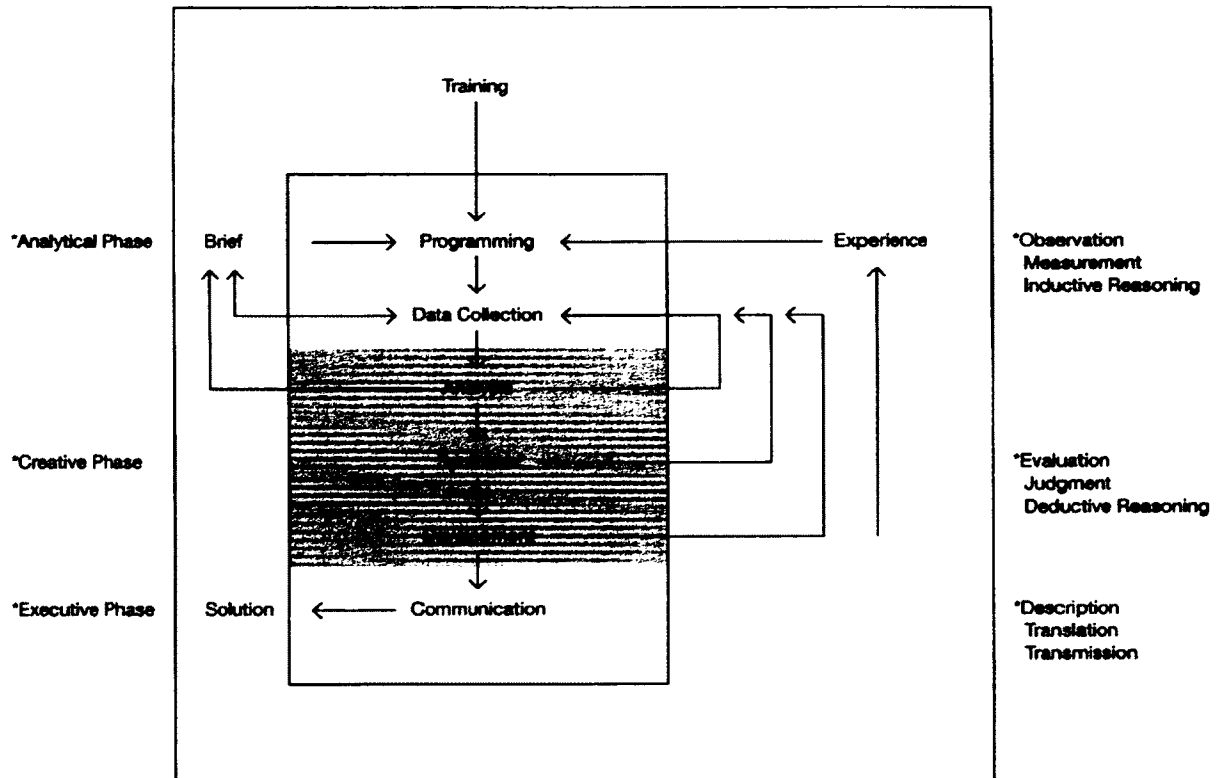


Figure 2.36: Bruce Archer's basic design procedure, 1963-1964

2.3.6.3 Koberg and Bagnall (1972): Seven-step process

Koberg and Bagnall (1972) added feedback to their seven-stage model. They noted that one stage does not need to be followed by another. They mentioned that it is possible that the stages can be considered in other ways or circular. Others see it as a constant feedback system where users never go forward without always looping back to check; where one progresses by constant backward relationships; and where the stages of the process advance somewhat concurrently until some strong determining variable terminates the process.

Koberg and Bagnall (1972) emphasized the alternatives to this model, viewing the design process as a branching system, and then as a “house race” where stages proceed concurrently rather than a “mule train” where stages proceed after each one.

“Process never ends. Its ultimate model is the spiral, a continuum of sequential round trips that go on ad infinitum.” (Koberg and Bagnall, 1972)

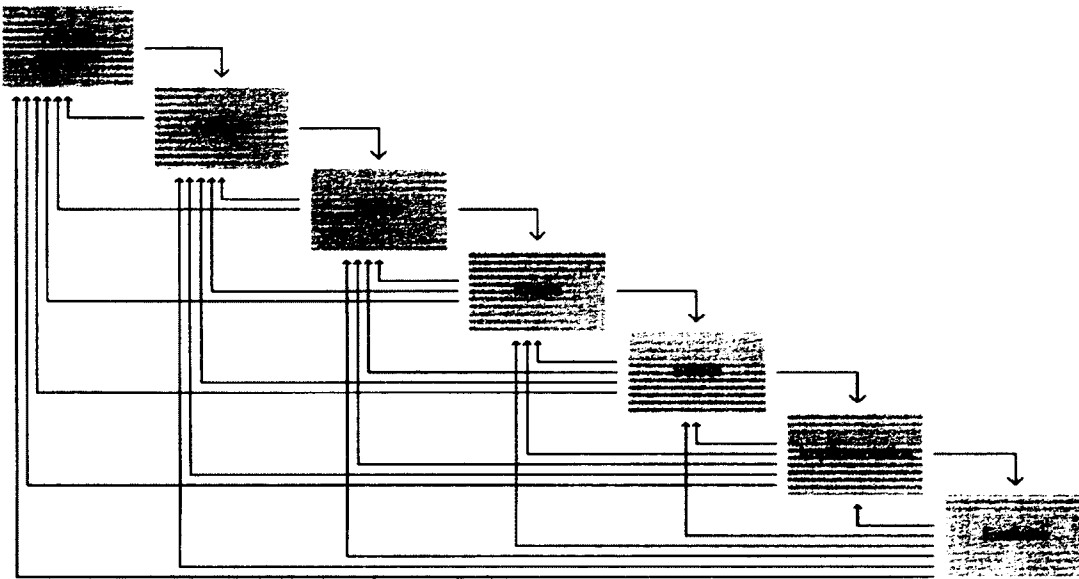


Figure 2.37: Koberg and Bagnall's seven-step process as a cascade with feedback, 1972

2.3.7 Cyclic Models: Process with Feedback

2.3.7.1 Pangaro (2002): Goal-action-feedback loops

Paul Pangaro (2002) described feedback loops in terms of a goal-action-effect-measurement cycle. In this model, a system acts to accomplish a goal within its environment. The system measures the effect's actions on the environment and compares the effect to its goal.

Designers follow this goal-action-feedback cycle. They have goals, act to accomplish them, and measure their results to see if they meet their goals.

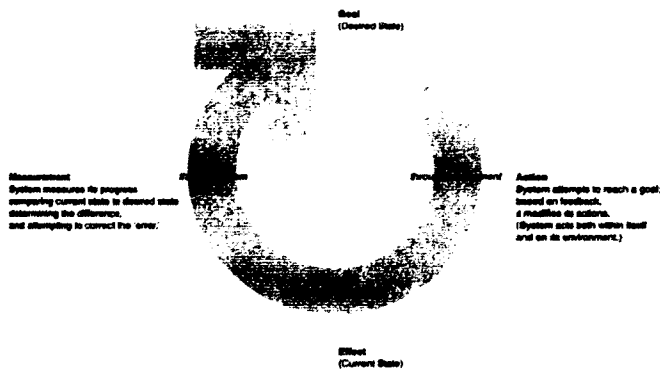


Figure 2.38: Pangaro's goal-action-feedback loops, 2002

2.3.7.2 Paul Souza (1996)

Souza (1996) used a spiral path to represent the repeating cycles in a design process. In Boehm's model, the spiral travels out from the centre suggesting that the process diverges. Travelling outward can also suggest adding increasing amounts of detail. In Souza's model, the path travels in toward the centre suggesting that the process converges on a goal.

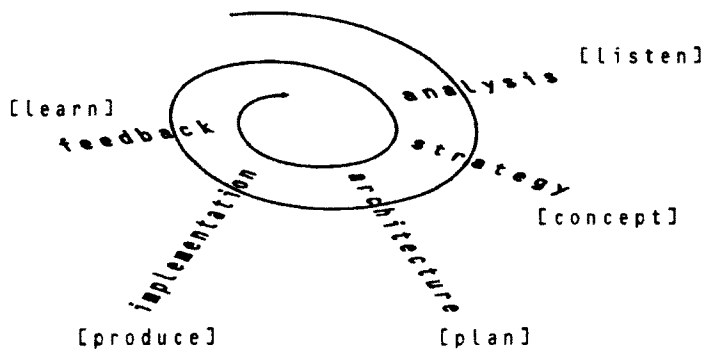


Figure 2.39: Paul Souza's design process, 1996

2.3.7.3 *Barry Boehm (1986): Spiral model of software development*

Boehm (1986) represented the repeating cycles of design with a spiral path moving away from a centre starting point.

In addition to the spiral shape, Boehm (1986) introduced a focus on risk reduction. Gary Schmidt of Washburn University offered this description of Boehm's model, "The radial dimension of the model represents the cumulative costs when finishing the steps. The angular dimension represents the progress made in completing each cycle. Each loop of the spiral from x-axis clockwise through 360 represents one phase. One phase is split roughly into four sectors of major activities:

- Objective setting
- Risk assessment and reduction
- Development and validation
- Planning the next phases

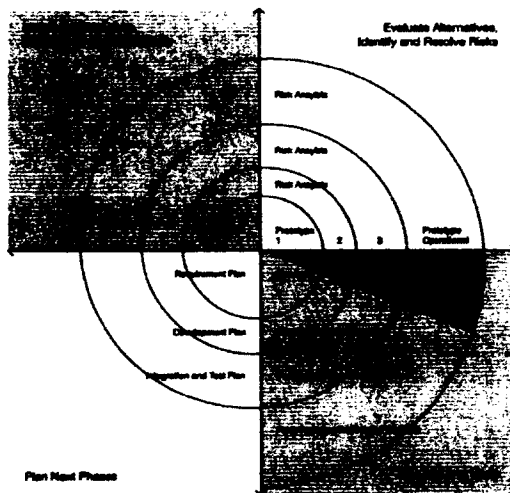


Figure 2.40: Barry Boehm's spiral model of software development, 1986

2.3.7.4 Vijay Kumar (2003): Innovation planning

Kumar (2003) presented this model at the 2003 HITS Conference (Humans, Interaction, Technology, Strategy) in Chicago. He described modes of planning (rather than steps) emphasizing the iterative and interconnected nature of the design process. He also mapped tools and methods onto each of the modes. Kumar (2003) spoke of innovation as the jump from insight to concept – from aha to eureka – describing it as a revelation, magic, genius, intuition, a hunch.

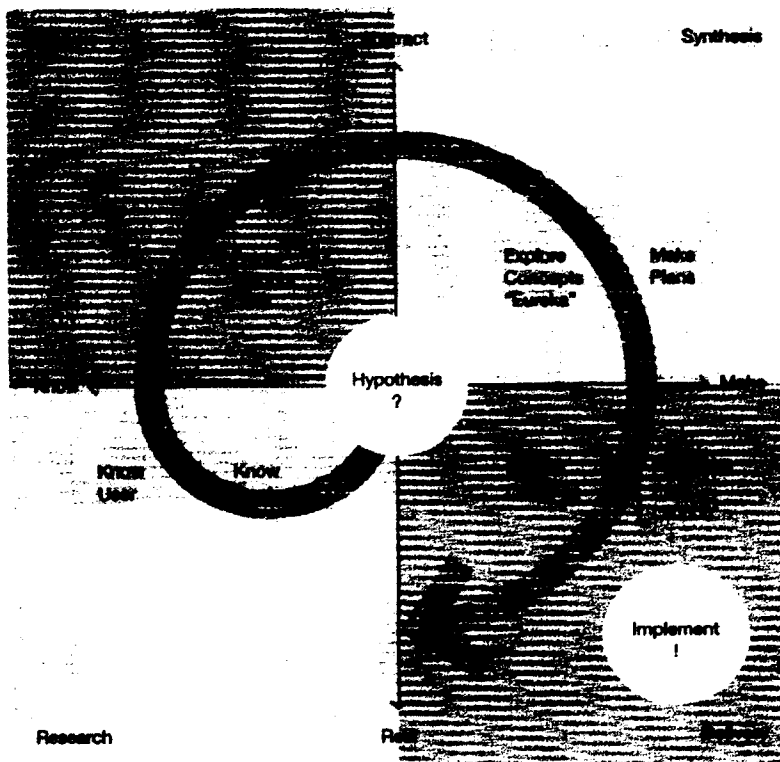


Figure 2.41: Vijay Kumar's innovation planning, 2003

2.3.7.5 Kroll (2004): Rational unified process iteration cycle

Iteration is the central principle of a rational unified process. Kroll (2004) noted that “each of the iterations includes some or most of the development disciplines (requirements, analysis, design, implementation and testing). Each of the iterations also has a well-defined set of objectives and produces a partial working implementation of the final system. And each of the successive iterations builds on the work of previous iterations to evolve and refine the system until the final product is complete. Early iterations emphasize requirements as well as analysis and design, while later iterations emphasize

implementation and testing” (Dubberly, 2004, p.126). Four principles suggested by Knoll (2004) are as follows:

1. Build functional prototypes early
2. Divide the detailed design, implementation and test phases into iterations
3. Baseline an executable architecture early on
4. Adopt an iterative and risk-driven management process

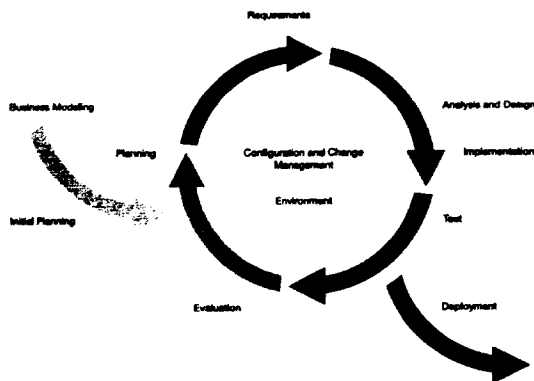


Figure 2.42: Per Knoll's Rational Unified Process iteration cycle, 2004

2.3.7.6 PDCA quality cycle after Walter A. Shewart (1939)

PDCA stands for a plan-do-check-act cycle of continuous improvement, a standard principle of quality assurance and management. It is also known as the Shewhart cycle or the Deming cycle.

The mathematician Walter A. Shewart (1939) was concerned with what he called “the formulation of a scientific basis for securing economic control”. In 1939, he published

“Statistica Method from the Viewpoint of Quality Control”, the first time he ever discussed the PDCA concept, according to the American Society for Quality (ASQ).

Edward Deming (1939) worked with Shewhart (1939) at Bell Laboratories and later popularized the PDCA cycle, especially in Japan. Deming (1939) substituted “study” for “check”. PDCA and PDSA have many incarnations and definitions. For example, the ISO 9001 standard includes the PDCA cycle. Over the last 20 years, the focus of quality management has expanded from manufacturing processes to including a systemic view of customer satisfaction.

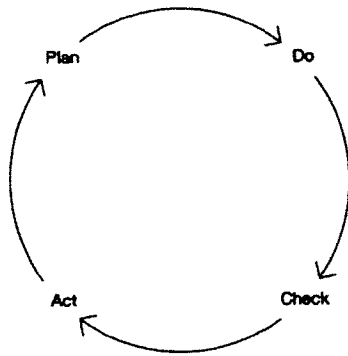


Figure 2.43: Walter A. Shewart's PDCA quality cycle, 1939

2.3.7.7 **Stephan H. Haeckel (2003): Adaptability loop**

Haeckel (2003) proposed this process of management within a changing environment. At first, it appears to be a classic feedback-based control loop. But the options for action include changing goals and thus suggest a more complex process than is represented in the model.

Haeckel's (2003) model may also be interpreted as a variation on the classic PDCA cycle. He might have chosen a simpler representation to make it easy to communicate and remember.

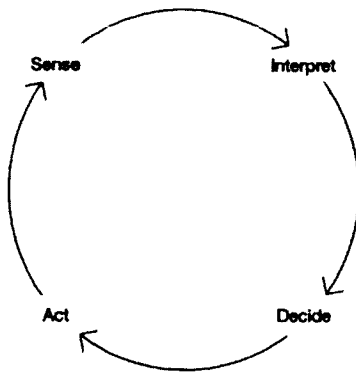


Figure 2.44: Stephan H. Haeckel, *Adaptability loop*, 2003

2.4 Context: Innovative Conceptual Fashion Design and Its Creative System

A complete theory that describes the development of creativity within a domain is illustrated in Section 2.2 in this chapter. A systemic view of creativity in fashion textiles therefore requires analysis of the following dimensions:

- The domain: the structure of fashion textile design
- The product: the creative product that results from the application of design processes
- The person: the role of an individual in generating novel fashion fabrics and garments
- The process: the processes and methods of generating novel fashion fabrics and garments

2.4.1 The Domain: Conceptual fashion design

Rhodes (1995) indicated that the functional criteria (warmth and protection), a desire of change (a psychological drive of the consumer and designer), a desire to make impression (social interaction), and strategic commercial interests have shaped the evolution of the fashion industry. The adoption of articles of clothing by consumers as an 'insignia' indicating either their social class or how they wish to be perceived leads to emulation from others (Hann and Jackson, 1987).

Historically, creative ideas have filtered from the couture houses to the high street. The "trickle-down" theory in fashion explains this social phenomenon in particular. 'High fashion' acts as a creative catalyst and a laboratory for new ideas (Craik, 1999) plays a vital role in the apparel industry. During the 1980s and early 1990s, a proliferation of designers began to source the most innovative fabrics in order to distinguish themselves from the crowd (Colchester, 1996). A new breed of creative professionals took advantage of a slimmed-down, specialized production to target consumers with high-quality, highly symbolic textile products. This explains how the innovative conceptual fashion design was initially formed in the industry.

2.4.2 The Product: Fabrics and Garments

McRobbie (1998) argued that designers of 'high-fashion' garments generate products that answer two objectives. 'High-fashion' designers create an image of their personal vision, which embodies within the designer label, and is personified by an object, for example, the garment.

Fashion shoots and catwalk shows are opportunities for designers to transmit their creative ideas to an audience and to tempt them to react in some way. All this often portrays the designer's aesthetic, functional, social, and psychological principles that will be adopted by the consumer if they wear the label. The label therefore acts as an 'insignia' which identifies an individual's social grouping. If high-fashion designers wish to promote their labels to a wider consumer base and at the same time increase turnover, then their products have to be diffused into ranges for the mainstream.

An example can be found in the work of Issey Miyake, who has created innovative pleated fabrics and garments that have been described as forms of textile *Haiku* and have also satisfied a mass of customers.^[2]

High-fashion designers are therefore diversifying into two collections: 1) collection emphasizes the designer's vision and supports the exclusivity of the label (Coleridge, 1988; Hann and Jackson, 1987) and 2) diffuses ranges that succeed in generating turnover. Diffused ranges have wider popularity at more affordable price ranges and are developed in

[2] The statistic recorded that 680,000 pleats please outfits had been sold between 1993 and 1997 (Benaim, 1997, p.6).

response to the varying demands of large numbers of customers (Frings, 1991). This has led to a repositioning of business and to the re-stimulation of the fashion-designer outlet within premier locations around the world (Moore and Ferine, 1998).

2.4.3 The Person: Conceptual Fashion Designer

Successful high-fashion designers are revered as celebrities for their fresh insights and twists on old ideas (McRobbie, 1998). As creative leaders within the fashion domain, high-fashion designers are indeed points of energy within a broader web of activity (DeCock, 1996). McRobbie (1998) analyzed the nature of successful individuals in the fashion world and drew up the following encompassing profile:

“It means being multi-skilled in hand work, design work, publicity and promotions, management, and business and having some idea of manufacture, as well as being in possession of creative vision, imagination, and all the other qualities associated with fashion design” (McRobbie, 1998, p.13).

High-fashion has been referred to as ‘idea fashion’ (McRobbie, 1998), and the idea makers have been labeled as *fashion conceptualists* (Moxey and Studd, 2000). Their work is epitomized by innovation and experimentation. Fashion conceptualists or high-fashion designers are closely associated with artists and craftsmen who are ‘free to generate problems and responses which are important to them’ (Lawson, 2006). And their work emphasized fine dressmaking and creativity (Frings, 1991). John Galliano, Alexander McQueen, and Antonio Berardi have prolonged their creativity by placing fashion alongside other art forms.

The importance of an individual’s background that supports and stimulates creativity has been emphasized by Stein (1975). Issey Miyake attributed much of his success to his experiences that were shaped by his cultural and social background:

“I am Japanese, and in my country we have remarkably strong traditions, which touch everything in our lives: art, ideas, life, and nature. We are able to make use of both technology and our traditions to make our exceptional fabrics.” (Benaim, 1997, p.12)

The influential backgrounds of designers such as Jean-Paul Gaultier, Calvin Klein, and Zandra Rhodes have been described by a number of researchers (Kingswell, 1998; Chenoune, 1998; Coleridge, 1988; Rhodes and Knight, 1984). Carr and Pomeroy (1992) proposed that creative fashion and textile designers were developed based on the history of fashion and costume. Jean-Paul Gaultier’s knowledge of past fashions and his understanding of how they should be worn have been described as ‘a sort of personal thesaurus’. This rich base of knowledge was gained through six years of apprenticeship at Cardin Esterel, and Patou before he launched his first collection in 1976 (Chenoune, 1998).

Issey Miyake served his apprenticeship with Guy Laroche and Givenchy and moved to Goeffrey Beene before the set up of his own studio in 1970. John Gailliano supplemented the freedom of the design course at St. Martin’s with the rigour and practicality of a part-time job at the National Theatre. As a dresser, he learnt how to use an iron to control different fabrication into a smoothing texture.

Fashion designers have been described as self-assured individuals who lack conformity (Carr and Pomeroy, 1992). They have also been described as ‘flamboyant and charismatic’ (McRobbie, 1998). John Galliano is seen as childlike and naive, working from a combination of his whimsical approach to life, his instinct, his mastery of clothing techniques, and his knowledge of fashion history. Some may regard him as a romantic, but this is built on a

foundation of hard-headed determination (McDowell, 1998). Galliano's total faith and confidence in his own ideas support what has been described as a gift of 'volcanic creativity' (McDowell, 1998). Paul Poret, one of the most influential courtiers of the early twentieth century, has been described as complex, confident, rebellious and supremely arrogant (McDowell, 1998). Jean-Paul Gaultier has been frowned upon by the French couture houses because he rejects their elitist traditions. His nickname as enfant terrible personifies his approach of 'deconstructing' these fashion empires (Chenoune, 1998).

2.4.4 The Process: Creative process in the domain of Conceptual Fashion Designer

2.4.4.1 *Review of methods adopted*

Numerous accounts of creative activities of textile and clothing designers appear to complement the associative nature of the creative process discussed in Section 2.2.4. In describing the nature of design, Bruce and Cooper (1997) emphasized that designers "use a combination of intuition, understanding, and current knowledge" (Bruce and Cooper, 1997, p. 13) to develop design solutions. Concepts are developed via a mix of new information about the domain, for example, technological breakthroughs and the latest marketing information, external stimulus, and previously acquired information.

Models of creative processes in different design disciplines are reviewed in Sections 2.3.3 - 2.3.6. Although each model contains unique features that can be distinguished under various items such as comprehensiveness, systematic approaches, completeness of the entire design concept and the applicability for design usage, Kneller (1966) argued that the

generation of ideas in each of the design field is based on a four-stage process of *preparation, incubation, illumination and verification*.

Hirshberg (1998) described how the antagonism generated by a clash of polarities provides the impetus for the creative spark in design disciplines. Themes based on polarities are common frames of reference for artists and designers (McRobbie, 1998), as evidenced by the works of Vivienne Westwood, John Galliano, Jean-Paul Gaultier and Dries van Noten.

Jean-Paul Gaultier's creative method is 'collect, convert, combine' (Chenoune, 1998), which is reflected in an ability to fuse together concepts such as elegant with vulgar, beautiful with ugly in a virtuous and eclectic mixing of genres. Dries van Noten's product fusion is derived from what has been described as his 'magpie aesthetic' (Tucker, 1999). This is epitomised by the layered look, which is used not only to juxtapose colour, texture and fabric, but also serves as a barrier against the cold of the Belgian climate.

Dries van Noten often uses processes that incorporate up to five techniques on one fabric, with some garments containing a mix of 'metallic foil prints, embossed sequins, felted wools, and simple pigment prints' (Tucker, 1999). The textiles of print designer Nathalie du Pasquier symbolize an approach which her collages described as the "visual equivalent of a remix in music" (Colchester, 1996, p.35).

The fact that combining materials is fundamental to the development of textiles is embodied within the term 'composites', in which "two or more materials, differing in form or composition, are combined to make a new material with enhanced performance characteristics" (Braddock and O'Mahony, 1998, p.67). Experiments in blending wool with

copper and silk with stainless steel are leading to exciting new developments in textiles (Braddock and O'Mahony, 1998).

Many studies indicated that novel fashion textiles arise from the selection and fusion of elements from diverse sources. Although this mirrors the claims regarding the associative basis of creative processes of an individual described earlier in the study, it fails to provide a framework that describes the nature of product development in the fashion-textile domain. The existing models of creative processes in other design disciplines tend to illustrate the diversity of the process and provide a broad description of design processes, but there are no specific framework proposed to the conceptual fashion domain.

Therefore, the following section is an attempt to resolve this constraint. It proposes that designers of fashion textiles adhere to a series of stages that are loosely consequential but where iterative recycling of problems and solutions occurs as fashion textile products are developed. The systematic framework should be helpful to provide a more effective and efficient creative process in the fashion-textile domain.

2.4.4.2 Development of theoretical framework of creative processes in the domain of conceptual fashion design

High-fashion has been referred to as "idea fashion" (McRobbie, 1998), and idea makers have been labeled as "fashion conceptualists" (Moxey, 2000) whose work is epitomized by innovation and experimentation. Although designers have intrinsic talents that may not be bound by rigid rules, a systematic framework should be helpful to provide a more effective and efficient design process.

The existing models of creative processes in other design disciplines tend to illustrate the diversity of the process and provide a broad description of the design process, but no specific framework has been proposed for conceptual fashion design.

For the purpose of the study, it is necessary to develop a model that is fully representative of current understanding and incorporates any entities and relationship not represented in the existing models.

Our model was developed from the models studied above. The three primary cognitive processes are accessed: analysis, synthesis and evaluation. These processes are presented in Figure 1 in grey rectangle boxes. The “analysis” phase produces “requirement, goal, direction and inspiration” as the output of investigating and clarifying the key design issues and problems involved in attaining the goal in the task situation. This output then provides input for the “synthesis” phase. The “synthesis” phase processes “solution and design” as output, but there is a continuous “artwork and prototype” cyclic process before “solution” generates “design” and the “evaluation” phase can produce an ‘outcome’.

The “solution and design” output is depicted as the input to the “evaluation” phase. An evaluation is negative if the proposed solution conflicts or is inconsistent with a design requirement creating sub-problems or new problems. If the proposed solution is confirmed as consistent with a design requirement, the result of the evaluation is considered positive and leads to the “outcome” of the process. However, a negative outcome indicates that further work on the proposed solution is required.

The structure of the conceptual fashion design framework is derived after taking into consideration the different characteristics and stages of the various studied models. Design concepts and aspects engaged in each stage are introduced in the following sections.

2.4.4.2.1 *Analysis Phase: Goal*

In the design process models developed by others, the step of goal determination is included. The first step of design processes proposed by Jones (1970) is the problem structure and designers should state objectives for a design project. Lamb and Kallal (1992) presented a model and design framework to aid designers in approaching design problems for all target customers with the first step to identify the design problem.

Like other design fields, a new collection of fashion and textiles also begin with a design goal which determines the actual design that the designer wishes to accomplish. The general goals in fashion and textile design include meeting customers' requirements, designing new styles, materials and technologies.

2.4.4.2.2 *Analysis Phase: Direction*

This is the stage where designers receive further knowledge of the cost, market demands and technical skills to accomplish their design goals. Literature was found to address this analytical stage of a design process model (Archer, 1984; Jones, 1984).

Due to the fast pace of fashion and textile business, this approach can further assist designers to define their directions that drive them to achieve the design goals in a time-consuming manner.

2.4.4.2.3 *Analysis Phase: Inspiration*

Stage 3 was developed from DeJonge’s model of design processes. DeJonge (1984) indicated that after the designers clearly define the goals for research, they should proceed to a more in-depth research of specific factors affecting the design. In fashion and textile design, these factors come from different kinds of source, including designers’ experiences, fashion trends, market preferences and local cultures. Therefore, sources of inspiration are the channels that help designers to generate useful ideas.

2.4.4.2.4 *Synthesis Phase: Solution*

Design is recognized as a process of pattern synthesis (Lawson 2006). “Solution” is considered as the beginning stage of synthesis. Watkins (1984) indicated that the designer should sift through the mass of data and ideas that are collected in the analysis stage of the process and determine the most important elements. Lamb & Kallal (1992) described that preliminary ideas in part of the process are subject to scrutiny in their model. Therefore, developing a guideline for design criteria is valuable for fashion and textile designers to define their works according to the level of creativity, the level of aesthetic appearance or the perfect selection of colour. DeJonge (1984) prolonged the establishment of design criteria for ranking and weighing in prototype evaluation.

2.4.4.2.5 *Synthesis Phase: Design*

As mentioned above, both Watkins (1984) and Lamb & Kallal (1992) emphasized the necessity of sorting the best design before implementation. Watkins (1984) described that

2.4.4.2.5 *Synthesis Phase: Design*

As mentioned above, both Watkins (1984) and Lamb & Kallal (1992) emphasized the necessity of sorting the best design before implementation. Watkins (1984) described that designers can decide on the finest idea and are required to implement the developed means to take action and try out the best idea.

2.4.4.2.6 *Evaluation Phase: Positive Implementation*

This is the final stage of synthesis. The designer conceives various alternative “design plans”, takes action and tries out the best idea until he is satisfied to offer proposals to meet the design goal. In the literature, several design models were found to have the stage of implementation (Watkins, 1984; Koberg & Bagnall, 1981; Lamb & Kallal, 1992). Beach (1998) argued that the apparel textile designers would construct their projects by using different methods to achieve their desired results.

2.4.4.2.7 *Evaluation Phase: Negative Evaluation*

Besides fashion and textile design, the evaluation stage is also important to all design fields studied above (Archer, 1965; DeJonge, 1984; Koberg & Bagnal, 1981; Watkins 1988; Lamb & Kallal, 1992). Watkins (1984) mentioned that it is the final step to analyze what happens when action is taken. According to Koberg & Bagnal (1981), the important aspects of the stage of evaluation are to compare the beginning with the end, to detect the flaws and discoveries, and to determine meaning, progress or value as it has been derived from the entire process.

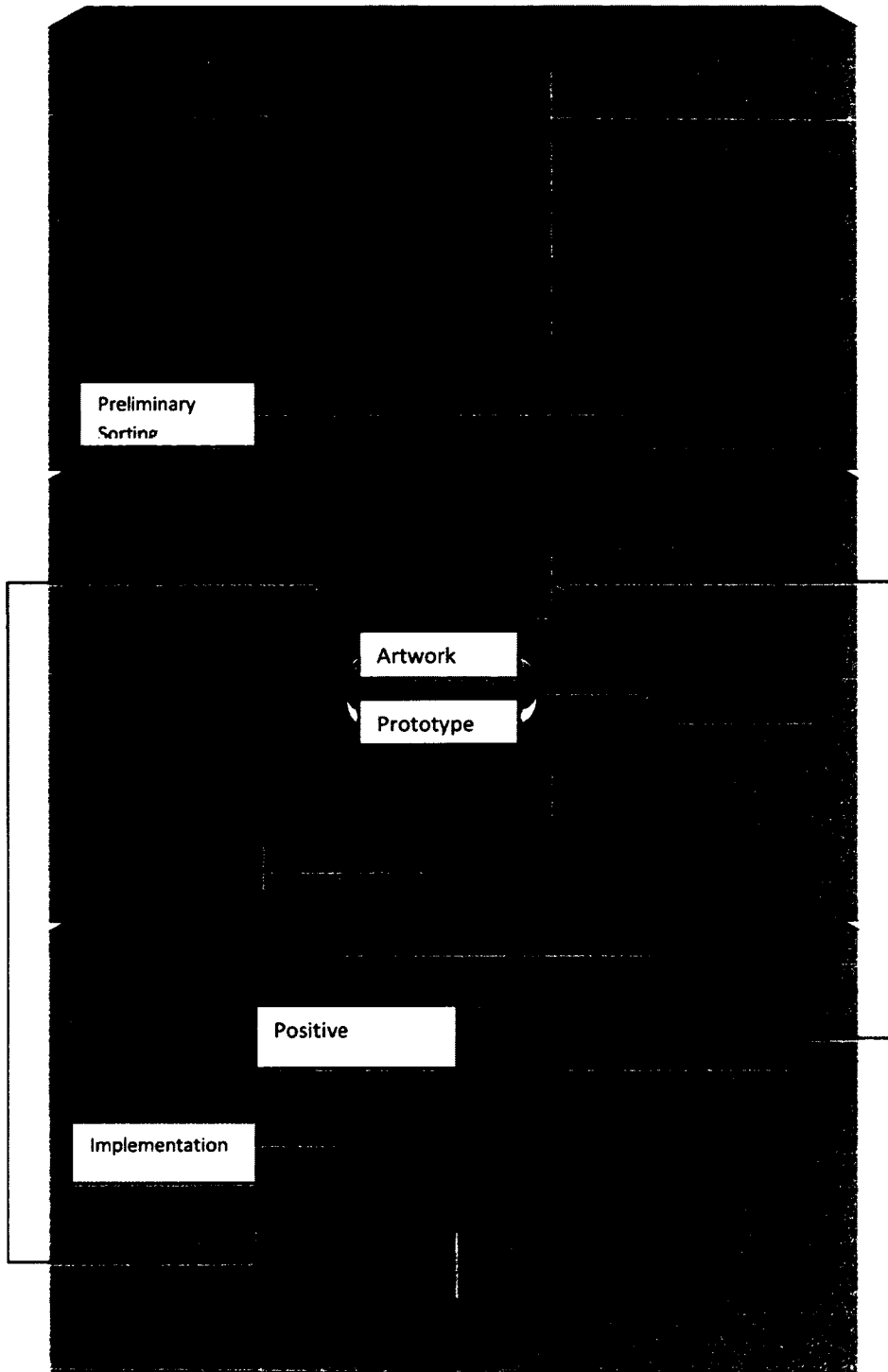


Figure 2.45: Proposed theoretical framework of conceptual fashion design process model

2.5 Conclusion

In this chapter, a theoretical framework of design processes is developed for conceptual fashion design. The development was based on a critical study of numerous significant design process models from three related design disciplines. These design models were critically evaluated and the appropriate model features were selected for the development of the theoretical framework of a design process model. The proposed model of design processes includes three significant phases: analysis, synthesis and evaluation. The output of each phase provides input for the next phase, and there is a cyclic process involved.

The creative process of developing conceptual fashion is complex and multi-dimensional. There has been a lack of research into the creative conditions that lead to the development of innovative conceptual fashion design. An initiation of a systemic conceptual framework that presents a series of creative actions and results generic to both fashion design and textile design is therefore essential.

Chapter 3 Methodology

3.1 Introduction

A combination of qualitative and quantitative research methodologies was adopted in this study in order to validate the theoretical framework suggested in the previous chapter. The proponents of adopting mixed-method research adhere to the purpose of “development” from the list of purposes for mixed research by Greene, Caracelli, and Graham (1989) and the “Fundamental Principle of Mixed Research” by Johnson and Turner (2003). There was a consistent and comprehensive theoretical framework emerging from an inductive integration of previous literature, models, theories, and pertinent information. The objective of this research is to develop a model of design processes in conceptual fashion design from the theoretical framework. Therefore, adopting the mixed research design was to obtain a convergence of validation from both qualitative and quantitative findings. In the process of “using the results from one method to help develop or inform the other method” (Caracelli, Greene and Graham 1980), the researcher was able to develop and explain the divergent aspects of a cyclical design process in the specific domain of conceptual fashion design compared to the sequential design process in the traditional fashion and textile design domain.

In the first phase of the research design, an in-depth interview with sample groups was adopted to determine the theoretical link between thoughts. Ball, Liang and Scrivener (2002) suggested that if the objects and relations represented in the model are involved in design thinking, they should be evident in designers’ talk. The method and information

sources used in this study were the same as those developed by Cross (1996) for a workshop on the use of interview and questionnaire analysis in design research – “Research in Design Thinking – Analyzing Design Activity”. A total of 100 respondents were invited for the interview, including 50 competent designers with 2 to 15 years’ (mean = 6.44) experience in fashion design and 50 post-graduate fashion and textile design students. A standardized open-ended interview was adopted. 10 open-ended questions were designed with regards to their collections, professions or final-year projects and resulted in qualitative data (Appendixes I & II). Neither the wording nor the sequence of questions on the interview protocol varied, and therefore the presentation was constant for all participants (Cross, 1996; Johnson and Turner, 2003).

An across-stage mixed model research (Johnson and Christensen, 2004) was used in the first phase in order to collect qualitative data and convert them into numerical codes that could be statistically analyzed (Tashakkori and Teddlie 2003). The inferences of the first strand led to the questions of the second strand. In the second phase, a non-experimental quantitative research approach was used to measure the observed difference and the level of agreement to the justified theoretical framework between the groups.

At the end of the chapter, a pilot test involving the actual data collection process on a small scale will be referenced for the purpose of instrument revision and a preliminary test of data collection procedures to identify and eliminate problems, allowing the researcher to make corrective changes or adjustments before collecting data from the target sample groups.

3.2 Mixed Methods Research Design

Mixed research is an approach through which the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or languages into a single study. The merging of qualitative and quantitative methods has a relatively long history and has become increasingly popular in recent years, particularly in the areas of applied research. Although there are multiple ways to mix approaches and various names ascribed to this process, mixed research can be defined generally as the integration of more than one method or data source to investigate a phenomenon.

3.2.1 Historical Background of Mixed Research Design

The historical evolution of mixed research has not been recorded in detail by any author or source. Datta (1994) and Tashakkori and Teddlie (1998, 2003) named the experts who had identified many of the major developmental milestones. The use of multiple data collection methods dates back to the earliest period of social science research. Campbell and Fiske's (1959) study of the validation of psychological traits brought multiple data collection methods into the spotlight. The actual use of multiple data collection methods is traced back to the use of multiple reference points by military naval science to locate an object's exact position, which was later used by Jack (1979) to suggest that quantitative and qualitative data could be complementary.

The mixed methods research has gradually gained momentum as a viable alternative research method over time. In the past 25 years, numerous calls for increased methodological diversity and alternative research methods have been made (Gelso, 1979;

Goldman, 1976; Howard, 1983). These calls have led to important discussions about incorporating qualitative methods in counseling research and including qualitative studies in traditional publication outlets (Hoshmand, 1989; Maione and Chenail, 1999; Morrow and Smith, 2000). They have also led to discussions about integrating quantitative and qualitative methods, commonly referred to as mixed methods research.

Both quantitative and qualitative data are increasingly available for studying social science, psychology and human behavioral research problems. Mixed research approaches across disciplines are gradually reported. Working in applied fields such as business, health care, social services and education, researchers and evaluators go about their work seeking to design and conduct studies that rely on multiple methods to understand complex social phenomena (Rallis and Rossman, 2003).

3.2.2 Theoretical Background of Mixed Research Design

Creswell (1999) argued that the mixed research approach is the third major research paradigm, adding an attractive alternative to quantitative and qualitative research. Both quantitative and qualitative research works are important and useful in a research study. Integrating qualitative and quantitative data may be the best way to gain a complete understanding of social phenomena, Coleman (1986) attested that larger-scale quantitative work can tap the more structural effects of interest, and qualitative work can better address interpretive reasons and mechanisms. In fact, the goal of mixed methods research is not to replace either of the approaches, but to draw on the strengths and minimize the weaknesses of both in single research studies (Johnson and Onwuegbuzie, 2004). Johnson

and Onwuegbuzie (2004) argued that the logic of inquiry in mixed methods research includes the use of induction (discovery of patterns), deduction (testing of theories and hypotheses) and abduction (increase validity).

Research can be viewed as falling along a research continuum with qualitative research placed on the left side and quantitative research placed on the right side, mixed methods research therefore located in the center and covering the large set of points in the middle area.



Figure 3.1: Research Continuum

Mixed methods research serves as an attempt to legitimate the use of multiple approaches in answering research questions, rather than restricting or constraining researchers' choices. Mixed methods research as the third research paradigm can also help bridge the schism between quantitative and qualitative research (Onwuegbuzie and Leech, 2004). For example, the details of qualitative data can provide insights not available through general quantitative surveys (Jick, 1979). Therefore, there is wide consensus that mixing different types of method can strengthen a study (Greene & Caracelli, 1997). Since social phenomena are very complex, different kinds of method are needed to best understand these complexities (Greene & Caracelli, 1997).

Johnson and Onwuegbuzie (2004) argued that many research questions and combinations of questions were the best and most fully answered through mixed research solutions. Data collected from both forms allow researchers to simultaneously generalize results from a sample to a population and to gain a deeper understanding of the phenomenon of interest. It also allows researchers to test theoretical models and to modify them based on participant feedback (Greene and Caracelli, 1997).

Examples of methodological work on the mixed methods research paradigm can be seen in several recent books (Alford, 1998; Brewer and Hunter, 1989; Bryman, 1989; Creswell, 2003; Greene, Caracelli, and Graham, 1989; Johnson and Christensen, 2004; King et al., 1994; Maynard and Schaeffer, 2000; Newman and Benz, 1998; Reichardt and Rallis, 1994; Tashakkori and Teddlie, 1998, 2003). Many of these works remain to be undertaken in the area of mixed methods research regarding its philosophical positions, designs, data analysis, validity strategies, mixing and integration procedures, and rationales.

One of the major principles developed by Johnson and Turner (2003) is the “fundamental principle of mixed research”. According to this principle, researchers should collect multiple data using different strategies, approaches, and methods so that the resulting mixture or combination is likely to result in complementary strengths and non-overlapping weaknesses. Johnson and Turner (2003) indicated that the fundamental principle is followed for at least three reasons: 1) to obtain convergence of corroboration of findings, 2) to eliminate or minimize key plausible alternative explanations for conclusions drawn from the research data, and 3) to elucidate the divergent aspects of a phenomenon. Johnson and Turner (2003)

also added that the fundamental principle can be applied to all stages or components of the research process.

Brewer and Hunter (1989) indicated that effective use of this principle is a major source of justification for mixed methods research because the product will be superior to mono-method studies. For instance, if the findings are corroborated via different approaches, then greater confidence can be held in the singular conclusion; if the findings conflict, then the researcher has greater knowledge and can modify interpretations and conclusions accordingly. Onwuegbuzie and Leech (2004) concluded that the goal of mixing is not to search for corroboration but rather to expand individual understanding.

Johnson and Onwuegbuzie (2004) further agreed that researchers by gaining an understanding of the strengths and weaknesses of quantitative and qualitative research will put them in a stronger position to mix or combine strategies in research design. Therefore, in their detailed study of mixed methods research, Johnson and Onwuegbuzie (2004) listed the major characteristics of traditional quantitative and qualitative research. They summarized that quantitative research is a focus on deduction, confirmation, theory/hypothesis testing, explanation, prediction, standardized data collection, and statistical analysis while qualitative research is induction, discovery, exploration, theory/hypothesis generation, the researcher acting as the primary instrument of data collection, and qualitative analysis.

Proponents of adopting mixed research typically adhere to the “compatibility thesis” and the “philosophy of pragmatism”. Johnson and Christensen (2004) argued that the

compatibility thesis is the idea that quantitative and qualitative methods are compatible, which can both be used in a single research study. Other advantages include a greater confidence in results; assistance in uncovering deviant or surprising dimensions of a phenomenon; enriched explanations, and theory integration or synthesis (Newman and Benz, 1998, pp84). And the “philosophy of pragmatism” suggests that researchers should adopt the approach or mixture of approaches that work best in a real world situation, regardless of any philosophical assumptions, paradigmatic assumptions, or any other type of assumption overall (Johnson and Christensen, 2004).

Although there are multiple ways to mix approaches, several different typologies are “fixed” for mixed research designs. For instance, Caracelli and Greene (1993) classified the ideal types of mixed research approach sequentially or concurrently. Johnson and Onwuegbuzie (2004) argued that the mixed methods research designs can be developed from two major types of mixed methods research: mixed-model and mixed-method. Johnson and Turner (2003) argued that using both open and closed questions in a questionnaire survey is one type of mixed method. Onwuegbuzie and Teddlie (2003) suggested that data can be ‘transformed’ into ‘quantitized’ or ‘qualitized’ results accordingly. Different typologies are interrelated with different approaches to sampling strategies, data collection strategies, methods of data analysis, and making inferences. Therefore, it is important that the researcher determines whether mixed research offers the best potential answer for the research study and decides the appropriate combination of complementary strengths and non-overlapping weaknesses for the study.

3.2.3 Rationale of Adopting a Mixed Research Design

Greene, Caracelli, and Graham (1989) identified the five most important rationales or purposes for mixed research design. These rationales go above and beyond the traditional notion of triangulation. Quantitative and qualitative methods can be combined to use results from one method and elaborate on results from the other method (complementarily), use results from one method and help develop or inform the other method (development), recast results from one method to questions or results from the other methods (initiation), and extend the breadth or range of inquiry by using different methods for different inquiry components (expansion).

Recently, mixed methods researchers have expanded the reasons for conducting a mixed methods investigation (Mertens, 2003; Newman, Ridenour, Newman and DeMarco, 2003; Punch, 1998). Mertens (2003) and Punch (1998) suggested that mixed methods investigations be used to:

- a) Better understand a research problem by converging numeric trends from quantitative data and specific details from qualitative data.
- b) Identify variables/constructs that may be measured subsequently through the use of existing instruments or the development of new ones.
- c) Obtain statistical, quantitative data and results from a sample of a population and use them to identify individuals who may expand on the results through qualitative data and results.

- d) Convey the needs of individuals or groups of individuals who are marginalized or underrepresented.

3.2.4 Types of Mixed Research Methods

There are multiple ways to mix approaches or methods in a study. Throughout the years, researchers have continued to develop typologies for mixed methods research design. For example, the mixed-model designs seen in Johnson and Christensen (2004) and Tashakkori and Teddlie (1998) suggested that the researcher can construct mixed-model designs by mixing qualitative and quantitative approaches within or across the stages of research. Morgan (1998) and Morse (1991) argued that the researcher should decide whether to give equal status to the quantitative and qualitative components of a mixed study or to give one paradigm the dominant status. Creswell (2003) and Morse (1991) argued that time ordering of the qualitative and quantitative phases is another important dimension, and the phases can be carried out sequentially or concurrently.

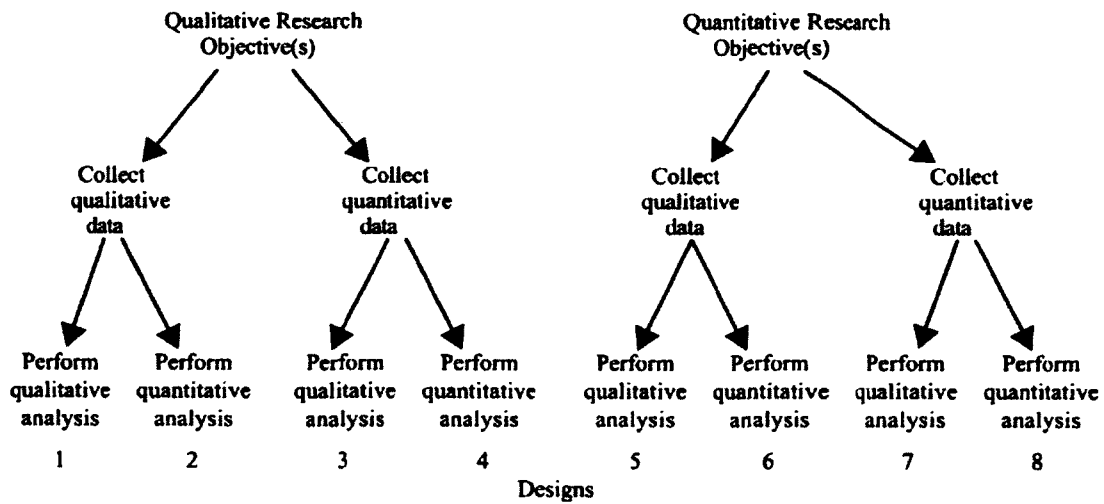
3.2.4.1 Mixed-Model and Mixed-Method Designs

In 2004, Johnson and Onwuegbuzie (2004) developed two major mixed methods research typologies (mixed-model designs and mixed-method designs), which were resulted from their detailed consideration of many other typologies, including Creswell (1994), Morgan (1998), Morse (1991), Patton (1990) and Tashakkori and Teddlie (1998). Their mixed-method designs are based on the crossing of paradigm emphasis and time ordering of the quantitative and qualitative phases (Johnson and Onwuegbuzie, 2004).

Johnson and Onwuegbuzie's (2004) two major types of mixed methods research: mixed-model (mixing qualitative and quantitative approaches within or across the stages of the research process) and mixed-method (the inclusion of a quantitative phase and a qualitative phase in an overall research study) became a milestone of legitimation typology specifically for mixed research.

In *mixed-model* research, quantitative and qualitative approaches are mixed within or across the stages of the research process. The two mixed-model research subtypes include 1) within-stage and 2) across-stage mixed model research.

- 1) In within-stage mixed model research, quantitative and qualitative approaches are mixed within one or more stages of the research study. An example of within-stage mixed model research is the use of a questionnaire that includes a summated rating scale (quantitative data collection) and one or more open-ended questions (qualitative data collection).
- 2) In across-stage mixed model research, quantitative and qualitative approaches are mixed across at least two stages of research (i.e. from designs 2 through 7). Figure 3.2 lists the across-stage mixed model research design.



Note. Designs 1 and 8 on the outer edges are the mono-method designs. The mixed-model designs are Designs 2, 3, 4, 5, 6 and 7.

Figure 3.2: Monomethod and mixed model design (Johnson and Onwuegbuzie, 2004)

Johnson and Onwuegbuzie (2004) published the above “Monomethod and mixed model designs” in an AERA conference paper with a typology based on the models from Campell and Fiske (1959) and Tashakkori and Teddlie (1998). They pointed out that the typology was originated by Patton (1990) with only 6 mixed model designs (Designs 1, 2, 3, 5, 6 and 8). Then Tashakkori and Teddlie (1998) built on this by adding two designs (Designs 4 and 7) and introduced the term ‘mixed-model’.

An example of across-stage mixed model research is the use of an open-ended interview (qualitative data collection) and transformation of data into countable results (quantitative data analysis). Tashakkori and Teddlie (1998) defined this data transformation stage as *qualitized* (quantitative data are converted into narrative data that can be analyzed

qualitatively) and *quantitized* (qualitative data are converted into numerical codes that can be represented statistically).

In mixed-method research, a qualitative phase and a quantitative phase are included in the overall research study. To construct a mixed-method design, Johnson and Onwuegbuzie (2004) suggested that the researcher make two primary decisions: a) paradigm emphasis (whether one wants to conduct the phases in equal status or dominant status) and b) time order (whether one wants to conduct the phases concurrently or sequentially).

Compared to mixed-model designs, mixed-method designs are similar to conducting a quantitative mini-study and a qualitative mini-study in one overall research study. Based on Morse's (1991) mixed-method design matrix, he explained that there are nine specific mixed-method designs that result from crossing paradigm emphasis and time order. Figure 3.2.5 shows the mixed-method design matrix based on Morse's model (1991).

		Time Order Decision	
		Concurrent	Sequential
Paradigm Emphasis Decision	Equal Status	QUAL + QUAN	QUAL → QUAN QUAN → QUAL
	Dominant Status	QUAL + quan QUAN + qual	QUAL → quan qual → QUAN QUAN → qual quan → QUAL

Figure 3.3: Mixed-method design matrix based on Morse's model (1991)

The notation used in Morse (1991) model is explained as follows:

- QUAL and qual both stand for qualitative research
- QUAN and quan both stand for quantitative research
- Capital letters denote priority or increased weight
- Lowercase letters denote lower priority or weight
- A plus sign (+) indicates the concurrent collection of data
- An arrow (->) represents a sequential collection of data

The mixed-method design can be illustrated by the following example. If qual -> QUAN is a dominant and sequential status in the study, the overall study is primarily quantitative but is preceded by a qualitative phase. In other words, the quantitative phase is primary and the qualitative phase is supportive.

3.2.4.2 The Six Sequential and Concurrent Mixed Method Designs

Creswell et al. (2003) developed a parsimonious system for classifying mixed methods research designs. There are six primary types of design: three sequential (explanatory, exploratory and transformative) and three concurrent (triangulation, nested and transformative). Figure 3.2.6 shows the six primary types of sequential and concurrent mixed method design.

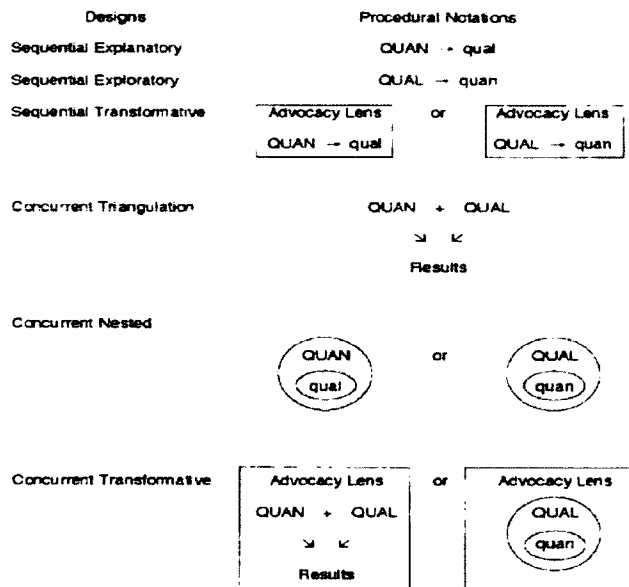


Figure 3.4: Six primary types of mixed methods research design by Creswell et al. (2003)

Creswell (2003) explained that there are three types of sequential design including 1) sequential explanatory, 2) sequential exploratory and 3) sequential transformative.

1. Sequential explanatory designs do not use an explicit advocacy lens. Quantitative data are collected and analyzed, followed by qualitative data. Priority is usually unequal and given to quantitative data. Qualitative data are used primarily to augment quantitative data. Data analysis is usually connected, and integration usually occurs at the data interpretation stage and in the discussion. These designs are particularly useful for explaining relationships and study findings, especially when they are unexpected.

2. Sequential exploratory designs do not use an explicit advocacy lens. Qualitative data are collected and analyzed, followed by quantitative data. Priority is usually connected, and integration usually occurs at the data interpretation stage and in the discussion. These designs are useful for exploring relationships when study variables are not known, refining

and testing an emerging theory, developing new test/assessment instruments based on an initial qualitative analysis, and generalizing qualitative findings to a specific population.

3. Sequential transformative designs use an explicit advocacy lens, which is usually reflected in purpose statements, research questions and implications for action and change. Quantitative data may be collected and analyzed, followed by qualitative data, and vice versa. Qualitative data may be collected and analyzed, followed by quantitative data. Thus, either form of data may be collected first, depending on the needs and preferences of the research. Priority may be unequal and given to one form of data or the other. Data analysis is usually connected, and integration usually occurs at the data interpretation stage and in the discussion. These designs are useful for giving voice to diverse or alternative perspectives.

Like sequential designs, Creswell (2003) explained that there are also three types of concurrent design including 1) concurrent triangulation, 2) concurrent nested and 3) concurrent transformative.

1. Concurrent triangulation designs collect and analyze quantitative and qualitative data at the same time. Priority is usually equal and given to both forms of data. Data analysis is usually separate, and integration usually occurs at the data interpretation stage. Interpretation typically involves discussing the extent to which the data triangulate or converge. These designs are useful for attempting to confirm, cross-validate and corroborate study findings.

2. Concurrent nested designs also collect and analyze quantitative and qualitative data at the same time. However, priority is usually unequal and given to either quantitative or qualitative data. One reason for this is that the less prioritized form of data may be included to help answer a completely different question or set of questions. Data analysis usually involves transforming the data, and integration usually occurs at the data analysis stage. These designs are useful for gaining a broader perspective on the topic in hand and for studying different groups.

3. Concurrent transformative designs use an explicit advocacy lens, which is usually reflected in purpose statements, research questions, and implications for action and change. Quantitative and qualitative data are collected and analyzed at the same time. Priority may be unequal and given to one form of data or the other. Data analysis is usually separate, and integration usually occurs at the data interpretation stage or transforms during data analysis. These designs are useful for giving voice to diverse or alternative perspectives, advocating research participants and better understanding a phenomenon that may be changing as a result of being studied.

3.3 Stages of Mixed Research Design Process

Designing a mixed research study involves at least three major steps in general. These include 1) deciding whether to use an explicit theoretical lens, 2) identifying the data collection procedures, and 3) identifying the data analysis and the integration procedures (Creswell, 1999, Greene and Caracelli, 1997, Morgan, 1998, and Tashakkori and Teddlie, 1998).

The first step involved the use of an explicit theoretical lens. As used by Crotty (1998), the term theoretical lens refers to the philosophical basis or paradigm (i.e. postpositivism, constructivism, feminism) that underlines a researcher's study and subsequent methodological choices. It is a term that can be distinguished from broader epistemologies, methodologies or methods like random sampling and interviews. Recognized theoretical lens bring implicit theories and assumptions to their investigations. Researchers at this initial stage must decide whether they are going to view their study from a paradigmatic base. In any event, the outcome of this decision informed and influenced the methodologies and methods used in the study, as well as the use of the study's findings (Creswell, 1999, Greene and Caracelli, 1997, Morgan, 1998, and Tashakkori and Teddlie, 1998).

The second step usually involves deciding how data collection is implemented. Implementation refers to the order in which quantitative and qualitative data are collected (concurrently or sequentially) and priority refers to the weight or relative emphasis. Creswell et al. (2003) and Morgan (1998) suggested that there are two types of data, including equal and unequal data status.

The third step involves deciding the point at which data analysis and integration occur. In mixed methods studies, data analysis and integration may occur by analyzing the data separately (concurrently or sequentially), transforming (qualitized or quantitized) or integrating the analyses in some way (Caracelli and Green, 1993; Onwuegbuzie and Teddlie, 2003; Tashakkori and Teddlie, 1998).

The majority of mixed research designs can be developed from the three basic stages. However, Johnson and Onwuegbuzie (2004) extended the mixed methods research process model into eight distinct steps including 1) determining the research question, 2) determining whether a mixed design is appropriate, 3) selecting the mixed-method or mixed-model research design, 4) collecting the data, 5) analyzing the data, 6) interpreting the data, 7) legitimating the data, and 8) drawing conclusions. These steps in Johnson and Onwuegbuzie's (2004) mixed research process model are explained below and shown in Figure 3.5.

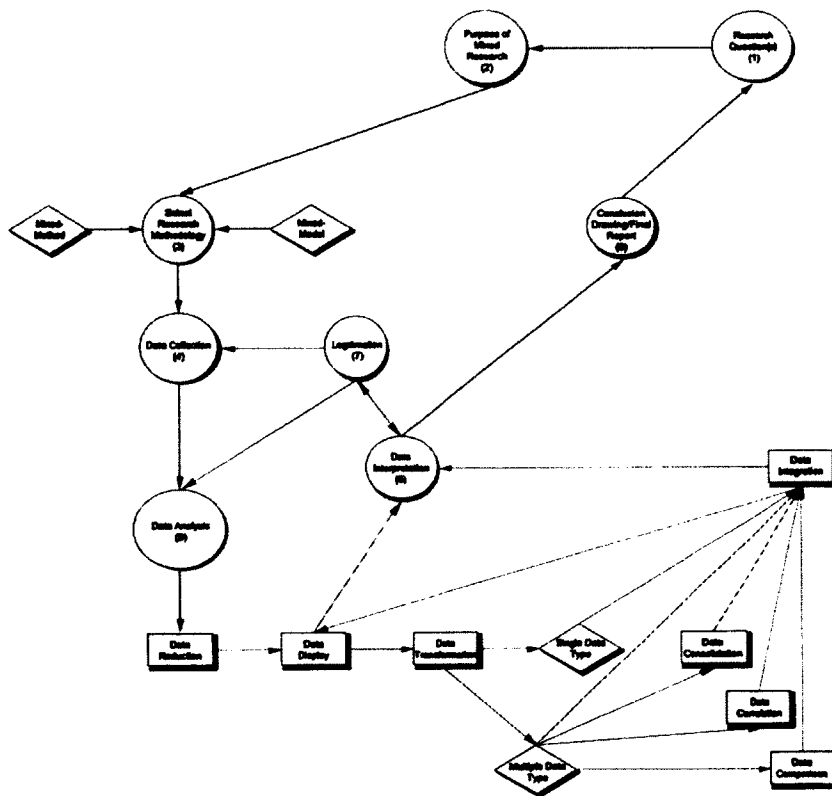


Figure 3.5: Mixed research process model by Johnson and Onwuegbuzie (2004) ^[3]

[3] Circles represent steps (1-8) in the mixed research process; rectangles represent steps in the mixed data analysis process; diamonds represent components.

3.3.1 Determine the Research Question

- A research study always starts with a research question to specify the significance of the research. It is a formal statement of the goal of a study.

3.3.2 Determine whether a Mixed Design is Appropriate

- A researcher has to decide whether it can best answer the research questions through the use of mixed research design.
- A researcher also has to determine the rationale for adopting the mixed design approaches in the study. As discussed in the above section, Greene et al. (1989) noted that there are five major rationales for conducting mixed method research, including 1) triangulation, 2) complementarily, 3) initiation, 4) development and 5) expansion.

3.3.3 Select the Mixed-Method or Mixed-Model Research Design

- A researcher has to determine the best design for the amount and kind of evidence that he/she wishes to obtain in the research investigation.
- It is important for a researcher to note that there is no limitation for building up one's design in mixed methods research. A researcher has to plan a research design that will best advise the research questions.

3.3.4 Collect the Data

- There are six major methods of data collection, including 1) tests (standardized tests that usually include information on reliability, validity and norms; tests constructed by researcher for specific purposes, skill tests, etc.), 2) questionnaires (self-report instruments), 3) interviews (situations where the researchers interview the participants), 4) focus groups (small group discussion with a group moderator present to keep the discussion focused), 5) observation (observing target groups' activities) and 6) secondary data (data that are originally collected and then archived by the researcher).
- The researcher has to decide which method can offer the maximum amount and kind of data that he/she wishes to obtain in the research investigation.

3.3.5 Analyze the Data

- The mixed methods research process model (Johnson and Onwuegbuzie, 2004) incorporates Onwuegbuzie and Teddlie's (2003) seven-stage conceptualization of the mixed methods data analysis process, including 1) data reduction, 2) data display, 3) data transformation, 4) data correlation, 5) data consolidation, 6) data comparison and 7) data integration. The researcher has to execute the data analysis process carefully for either the qualitative or quantitative phase in order to advance the data validation of the study.

3.3.6 Interpret the Data

- A researcher has to continually use strategies to provide valid data in order to make defensible interpretations of the collected data.

- The strategies used to interpret the collected data include 1) reflexivity, which involves self-awareness and critical self-reflection by the researcher's potential biases and predispositions, as these may affect the research process and conclusion of the study; 2) negative-case sampling, which involves the attempt to locate and examine cases that disconfirm the researcher's expectations and tentative explanations.

3.3.7 Legitimate the Data

- The legitimation steps involve assessing the trustworthiness of both the qualitative and quantitative data and the subsequent interpretation. Johnson and Onwuegbuzie (2004) suggested that the frameworks such as the Quantitative Legitimation Model (Onwuegbuzie, 2003) and the Qualitative Legitimation Model (Onwuegbuzie, 2000) be used to assess the legitimacy of the qualitative and quantitative phases of the study.

3.3.8 Draw Conclusion

- The conclusion report should discuss the results related to the quantitative and qualitative parts of the research investigation in order to capitalize on the strengths of mixed research.

By studying their model of the mixed research process, Johnson and Onwuegbuzie (2004) indicated that mixed research involves a cyclical, recursive and interactional process. They added that 'recursion can take place within a single study and also across related studies by informing future research', and this could always lead to 'new or reformulated research purposes and questions' (Johnson and Onwuegbuzie, 2004).

3.4 Validating the Theoretical Model by Mixed-Model Research Approach

A combination of qualitative and quantitative research methodologies was adopted in this study in order to validate the theoretical framework suggested in the previous chapter. In following Johnson and Onwuegbuzie's (2004) model of the mixed research process, there were also eight distinct stages of the mixed research process in this research study. Each stage of the mixed research process is explained below.

3.4.1 Research Questions

The symbiotic relationship that exists between fashion and textile design is often considered inseparable. In recent decades, the world of fashion and textile design has become increasingly close to and reliant on one another. Fashion designers understand that the future of their profession lies to a great extent in the selection of fabrics. Advanced textile technology yields new aesthetics, tactile qualities and performance capabilities. Fashion designers collaborate with textile designers to produce collections which feature innovative fabrics, impeccable craft and conceptual designs. This excellent collaboration of design work leads to the integration of the design process undertaken.

However, limited literature and systematic models which describe the conceptual design process can be found in either academic or industrial field. As there is an obvious knowledge gap in the subject of conceptual fashion design, this study sought to identify the

dimensions of creative success within this specific domain. A thorough understanding of the dimensions of creativity theories and creative processes in different design disciplines will help develop a rich background for the study of creative activities within the domain of conceptual fashion design. The present research attempted to 1) explore the identification of the innovative conceptual fashion design and its creative system, 2) develop a theoretical framework of the design process that presents a series of creative actions and 3) develop a model of the design process that is generic to both textile design and fashion design by rationally integrating professional knowledge from different design domains into a systematic conceptual framework.

All this raises my interest in the investigation into the design process of developing conceptual fashion design and the creative thinking by conceptual designers. This study documented and tracked the emergence and development of conceptual fashion, exposing interdisciplinary practice at the edges of the fashion discipline.

3.4.2 Purpose of Mixed Research

A combination of qualitative and quantitative research methodologies was adopted in this study in order to validate the theoretical framework suggested in the previous chapter. The proponents of adopting mixed methods research adhere to the purpose of “development” from the list of purposes for mixed research by Greene, Caracelli and Graham (1989) and the “Fundamental Principle of Mixed Research” by Johnson and Turner (2003).

Since there is a consistent and comprehensive theoretical framework emerging from an inductive integration of previous literature, models, theories and pertinent information. The

objective of this research was to develop a model of design processes in conceptual fashion design from the theoretical framework. Therefore, adopting the mixed research design was to obtain convergence of validation from both qualitative and quantitative findings. In the process of “using the results from one method to help develop or inform the other method” (Greene, Caracelli, and Graham 1989), the researcher was able to develop and explain the divergent aspects of a cyclical design process in the specific domain of conceptual fashion design compared to the sequential design process in the traditional fashion and textile design domain.

3.4.3 Selected Research Methodology

Johnson and Christensen (2004) indicated that there are two major types of mixed research design, including mixed-model research and mixed-method research. In this study, a sequential mixed model design research was adopted. An across-stage mixed model research (Johnson and Christensen, 2004) was used in the first phase in order to collect qualitative data and convert them into numerical codes that can be statistically analyzed (Tashakkori and Teddlie 2003). The inferences of the first strand led to questions of the second strand. In the second phase, a non-experimental quantitative research approach was used to measure the observed differences and the level of agreement on the justified theoretical framework between the groups.

3.4.4 Data Collection

In the first phase of the research design, an in-depth interview with sample groups was adopted to determine the theoretical link between thoughts. Ball, Liang and Scriverner

(2002) suggested that if the objects and relations represented in the model are involved in design thinking, they should be evident in designers' talk. Cross (1996) indicated that of all empirical and observational research methods for the analysis of design activities, interviews with designers can be regarded as the most effective method of examining design cognition.

The method and information sources used in this study were the same as those developed by Cross (1996) for a workshop on the use of interview and questionnaire analysis in design research – "Research in Design Thinking – Analyzing Design Activity". A total of 100 respondents were invited for in-depth interview, including 50 competent designers with 2 to 15 years' (mean = 6.44) experience in fashion design and 50 fashion and textile design postgraduate students. A standardized open-ended interview was adopted. 10 open-ended questions (Appendix Ia) were designed for their collections, professions or final-year projects, and resulted in qualitative data. Neither the wording nor the sequence of the questions on the interview protocol varied, and therefore the presentation was constant for all participants (Cross, 1996; Johnson and Turner, 2003).

3.4.4.1 In-depth Interviews Design

There are three types of qualitative interview, including 1) informal conversational interview, 2) interview guide approach and 3) standardized open-ended interview. A standardized open-ended interview (Patton, 1987 and 2002) was adopted in the first phase of research design (Appendix I). Table 3.2 shows an example of mixed interviewing (Type 5 data collection). The standardized open-ended interview was based on open-ended

- moderately high measurement validity of well constructed and tested interview protocols
- relatively high response rates are often attainable
- useful for exploration as well as confirmation

Weaknesses of interviews:

- In-person interviews are usually expensive and time-consuming
- reactive effects
- investigator effects may occur
- interviewees may not recall important information and may lack self-awareness
- perceived anonymity by respondents may be low
- data analysis can be time-consuming for open-ended items
- measures need validation

3.4.4.2 Sample Groups

The stratified random sampling technique was adopted in this study. This technique is used when the proportion of subgroups (strata) is known in the population and the selection is random yet from each of these strata.

questions and resulted in qualitative data. At the same time, neither the wording nor the sequence of the questions on the interview protocol varied, so the presentation was constant for all participants (Johnson and Turner, 2003).

Methods of Data Collection	Pure Qualitative	Mixed Methods	Pure Quantitative
2. Interviews	4	5	6
4. Tests	10	11	12
6. Secondary data	16	17	18

Table 3.1: Data Collection Matrix

With reference to the proposed theoretical framework, the interview contained ten open-ended questions pertinent to the seven stages of design processes in conceptual fashion design. The interviewees were asked to state the possible design aspects during their process of design freely and openly (Appendix I).

Strengths of Interviews:

- good for measuring attitudes and most other content of interest
- allows probing and posing of follow-up questions by the interviewer
- can provide in-depth information
- can provide information about participants' internal meanings and ways of thinking
- closed-ended interviews provide exact information needed by the researcher
- telephone and email interviews provide very quick turnaround

In this study, there were 2 groups of target sample populations involved. The first group included 50 fashion and textile design postgraduate students from the Institute of Textile and Clothing, The Hong Kong Polytechnic University. The age range of the respondents was from 22 to 45. They participated in the design process of their final-year project with 6 outfit collections. The second group included 50 competent designers with 2 to 15 years' (mean= 6.44) experience in the fashion industry. The age range of the respondents was from 23 to 50. They were entitled designers or assistant designers in their employed companies. A total of 100 respondents were invited to an in-depth interview, including 50 competent designers with 2 to 15 years' (mean = 6.44) experience in fashion design and 50 fashion and textile design postgraduate students.

3.4.5 Data Analysis

Since this research study adopted the mixed methods research process model by Johnson and Onwuegbuzie (2004), the study also incorporated Onwuegbuzie and Teddlie's (2003) seven-stage conceptualization of the mixed methods data analysis process. There were seven data analysis stages in this study which are listed as follows: 1) data reduction, 2) data display, 3) data transformation, 4) data correlation, 5) data consolidation, 6) data comparison and 7) data integration. Each stage of the data analysis process is explained below and shown in Figure 3.7.

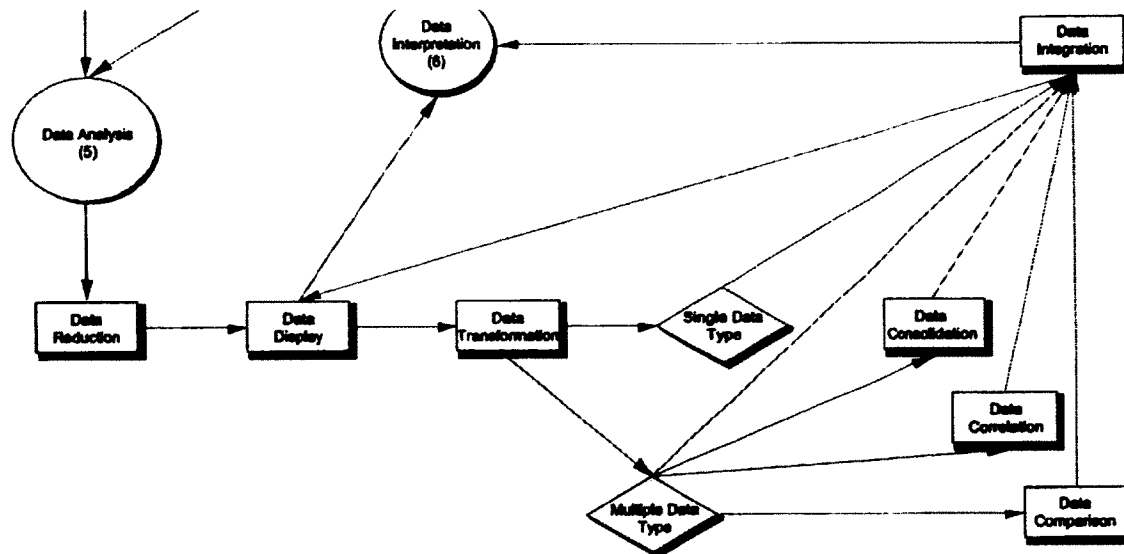


Figure 3.6: The seven-stage conceptualization of the mixed methods data analysis process by Onwuegbuzie and Teddlie's (2003)

i) Data reduction

- This stage involves reducing the dimensionality of qualitative data (i.e. via descriptive statistics, memoing) and quantitative data (i.e. via descriptive statistics, exploratory factor analysis, cluster analysis).

ii) Data display

- This stage involves describing pictorially qualitative data (i.e. matrices, charts, graphs, networks, lists, rubrics, and Venn diagrams) and quantitative data (i.e. tables, graphs)

iii) Data transformation

- This stage adopts Tashakkori and Teddlie's (1998) suggestion on 'data transformation', wherein quantitative data are converted into narrative data that can be analyzed qualitatively (qualitized) or qualitative data are converted into numerical codes that can be represented statistically (quantitized).
- Coding: the first phase of analyzing interview data is coding (Cross , 1992 and Burns, 1994), i.e. classifying material into themes, issues, topics, concepts, propositions.

The stages of coding in this study are listed below:

- The first stage of coding is to develop a list of coding categories. Then a short name is assigned to each category and a number to each subcategory.
- In the margin of the transcript file, the data can be coded by the appropriate code as the file is read. The code may refer to a phrase, a sentence or a paragraph.
- After codes have been allocated to the text in the transcript file, data coded to each category need to be collected together. We used NUDIST to store and format the text in a database, and apply an analysis package to code the data (Richards 1987).

iv) Data correlation

- This stage involves the quantitative data being correlated with the qualitized data or the qualitative data being correlated with the quantitized data.

v) Data consolidation

- This is the stage wherein both quantitative and qualitative data are combined to create new or consolidated variables or data sets.

vi) Data comparison

- This stage involves comparing data from the qualitative and quantitative data sources.

vii) Data integration

- This is the final stage whereby both quantitative and qualitative data are integrated into either a coherent whole or two separate sets (i.e. qualitative and quantitative) of coherent wholes.

3.4.6 Data Interpretation

The strategies used to interpret the collected data in this study was 'reflexivity', which involves self-awareness and critical self-reflection by the researcher's potential biases and predispositions, as these may affect the research process and conclusion of the study.

3.4.7 Legitimation

This study adopted the Qualitative Legitimation Model (Onwuegbuzie, 2000; Onwuegbuzie, Jiao and Bostick, 2004) which contains 29 elements of legitimation for the qualitative component of the mixed methods research at the data collection, data analysis, and data

interpretation stages of the study to assess the legitimacy of the qualitative phase of the study.

3.4.8 Final Report

In the conclusion report, the researcher discussed the development and explained the divergent aspects of a cyclical design process in the specific domain of conceptual fashion design compared to the sequential design process in the traditional fashion and textile design domain.

3.5 Primary Findings

A pilot test involving the actual data collection process on a small scale will be referenced for the purpose of instrument revisions and a preliminary test of data collection procedures to identify and eliminate problems, allowing the researcher to make corrective changes or adjustments before actually collecting data from the target sample groups.

The individual backgrounds of the 8 interviewees are listed in Table 3.3. All participants had worked in fashion, textile or design business for 2 to 15 years. The interviews and questionnaires were conducted between September and December in 2009. The average interview time was around 45 minutes and the average time to fill-out the questionnaire was around 15 to 45 minutes.

Code	Name	Position	Work experience	Interview time
B	Anthony Fung	Assistant Fashion Designer	10 yrs in Hong Kong brand (Izzue.com)	45 mins
C	Heidi Ho	Fashion Designer	4 yrs in Hong Kong brand (Izzue.com)	45 mins

D	Annie Ngai	Bridal gowns Designer	7 yrs in Annie bridal costume rental	30 mins
F	Kahori Maki	Textile Designer	16 yrs as active freelancer designer	50 mins
H	Dr. Xiong Gu	Part-time Lecturer, Associate Professor	20 yrs in teaching textile design	30 mins

Table 3.2: The backgrounds of pilot test participants

With reference to the proposed theoretical framework of the design process model, the interview guide contained ten open-ended questions pertinent to the seven stages of the design process model in conceptual fashion design. A questionnaire with a Likert scale (1932) required the participants to make a decision on their level of agreement on a five-point scale (strongly agree, agree, neither, disagree and strongly disagree) in the justified model of the design process adopted from phase one of the study. A set of interview questions and questionnaires is attached in Appendixes Ia and Ib.

3.5.1 Coding

The encoding process was designed to capture the relations identified in the design process of the participants' projects or collections. Hence, the turn-structured protocol data of the design discourse activities was encoded in terms of the proposed design process model (Figure 2.4.4.2 in Chapter 2). The transcripts are coded as follows:

1) An utterance was coded as **ANALYSIS** if it:

- Expressed a pre-determined design requirement or problem briefly, for example, 'the theme of the final-year project is environmental sustainability'.
(Problem/Requirement)

- Expressed a need, want or wish generated by the designers. (Goal)
 - Expressed influential factors generated by the external parties. (Inspiration)
- 2) An utterance stating a possible or provisional design proposal in response to the brief, particular requirements, or a problem was coded as a **'SYNTHESIS SOLUTION'** or **'SYNTHESIS DESIGN'**. For example, 'leather could be re-used or re-stitched into a new jacket'.
- 3) An utterance was coded as EVALUATE if it was:
- Negative: a problem arising from an appraisal in which a solution was recognised as being in conflict or inconsistent with an **'ANALYSIS'**.
 - Positive: an agreement if it acknowledged a solution or design with a given **'ANALYSIS'**

Each utterance was therefore coded as analysis problem/requirement (AP/R), analysis goal (AG), analysis inspiration (AI), synthesis solution (SS), synthesis design (SD), evaluation negative (EN) or evaluation positive (EP). Non-categorized utterances were coded as others (O). After the transcripts were coded, the steps of the proposed theoretical framework (Figure 2.45 in Chapter 2) were transcribed into a coding form as shown in Table 3.4.

Theoretical framework	Codes
ANALYSIS	A
Analysis Requirement	AP

Analysis Goal	AG
Analysis Inspiration	AI
Analysis Others	AO
SYNTHESIS	S
Synthesis Solution	SS
Synthesis Design	SD
Synthesis Others	SO
EVALUATION	E
Evaluation Negative	EN
Evaluation Positive	EP
Evaluation Others	EO

Table 3.3: Coding form for pilot test

3.5.2 Results and Discussion of Primary Findings

Instances of explicit **ANALYSIS**, **SYNTHESIS** and **EVALUATION** (capturing relations between them) are captured in Table 3.5.

Theoretical framework	Codes	Total (8)	Quantitized
ANALYSIS	A		
Analysis Requirement	AP	4	50%
Analysis Goal	AG	7	87.5%
Analysis Inspiration	AI	7	87.5%
Analysis Others	AO	6	75%

SYNTHESIS	S		
Synthesis Solution	SS	7	87.5%
Synthesis Design	SD	6	75%
Synthesis Others	SO	4	50%
EVALUATION	E		
Evaluation Negative	EN	8	100%
Evaluation Positive	EP	6	75%
Evaluation Others	EO	6	75%

Table 3.4: Coding results from pilot test group

From Table 3.5, all predicted productions and relationships were found in the data as follows:

- Analysis involving Requirement (i.e. AR, 50% of all explicit utterances)
- Analysis involving Goal (i.e. AG, 100% of all explicit utterances)
- Analysis involving Inspiration (i.e. AI, 100% of all explicit utterances)
- Analysis involving Others (i.e., AO, 75% of all explicit utterances)
- Synthesis involving Solution (i.e. SS, 100% of all explicit utterances)
- Synthesis involving Design (i.e. SD, 100% of all explicit utterances)
- Synthesis involving Others (i.e. SO, 50% of all explicit utterances)
- Evaluation yielding Negative outcome and repeat (i.e. EN, 100% of all explicit utterances)
- Evaluation yielding Positive outcome (i.e. EP, 75% of all explicit utterances)

- Evaluation yielding Others outcome (i.e. EO, 75% of all explicit utterances)

As seen from Table 3.5, evaluations occur more than requirements or solutions in the design process (as measured by outcome utterances). This shows that an evaluation is not simply a judgement as to whether a proposed solution is desirable or not. Instead, evaluations relate solutions to requirements. The negative and positive outcomes that emerge from evaluations are statements about the strengths or weaknesses of solutions in relation to requirements, comprising constraints which designers can reason as task progresses or challenges.

The data also indicate the importance of goals, solutions and negative outcomes in the conceptual design process. Since 87.5% of the implicit utterances were coded as Analysis Goal (AG) and Synthesis Solution (SS), the data suggest that in the design process of conceptual fashion design it is very important to generate solutions with reference to the designers' individual goal. The relatively low percentage (75%) of the utterances coded as *Design* in the stage of *Synthesis* indicates that a design without solutions may not be the best outcome of *Analysis*.

The 100% of the explicit utterances coded as *negative outcome* suggest that an evaluation plays a dominant role of exploring new solutions and designs. The responses indicate that an evaluation is important for a number of reasons as follows:

- It produces outcomes that enable informed correction and further development to be made.

- It produces outcomes that potentially connect multiple syntheses to a specific solution, thus building up evidence for and/or against it.
- Only through an evaluation that one can know whether and why a solution is good or bad.

Besides the explicit numbers shown above, Appendix II also shows the chronological descriptors of each category. They would be used as sources and references for further quantitative approach in this study.

3.6 Conclusion

We proposed a theoretical framework to explicitly represent analysis, synthesis and evaluation outcomes and their interactions with conceptual fashion design. We emphasised the importance of the notion of an evaluation outcome, which is not simply 'negative' or 'positive'. Instead it is a relation between *synthesis* and *evaluation*, expressing whether and why the proposed solution or design is good or bad. We sought and found evidence in the designers' interviews for productions and relations posited in the model. The results show that the explicit consideration of the designers' goals definitely generated solutions to tasks. Likewise, the important role of evaluation outcomes indicates a clear cyclical model for conceptual fashion design (90% of all coded utterances). Therefore, it is reasonable to conclude from the above results that the designer's goals (analysis), solutions (synthesis) and outcomes (evaluation) feature prominently in the design process of conceptual fashion design.

Chapter 4: Data Analysis and Results

4.1 Introduction

The objective of the research study was to develop a model of design processes in conceptual fashion design from a theoretical framework. The purpose of this chapter is to obtain convergence of validation from both qualitative and quantitative findings in order to justify and develop the ultimate model of design processes in the specific domain of conceptual fashion design.

As mentioned in the previous chapter, the proponents of adopting mixed methods in this research adhere to the purpose of “development” from the list of purposes for mixed research by Greene, Caracelli, and Graham (1989). In the process of “using the results from one method to help develop or inform the other method” (Caracelli, Greene and Graham 1980), there were two phrases of research design which were carried out sequentially in the study.

4.2 The Seven-Stage Conceptualization of the Mixed Methods Data Analysis Process

A seven-stage conceptualization of mixed methods data analysis processes by Onwuegbuzie and Teddlie (2003) was adopted to analyze the data collected from interviews and questionnaire surveys. There were seven data analysis stages in this study which are listed as follows: 1) data reduction, 2) data display, 3) data transformation, 4) data correlation, 5) data consolidation, 6) data comparison and 7) data integration. Each stage of data analysis processes is explained below (Figure 4.1).

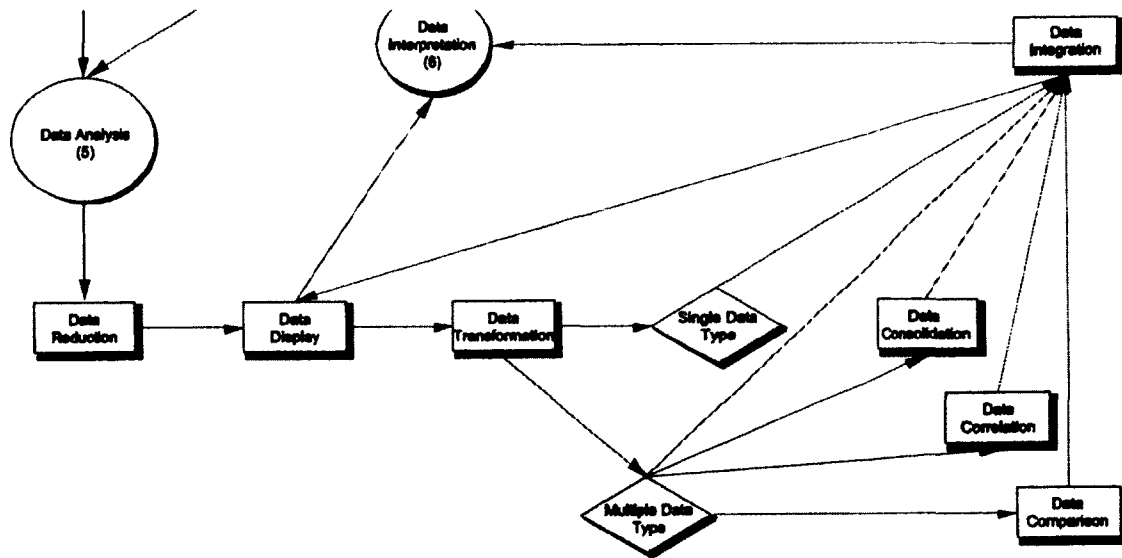


Figure 4.1: The seven-stage conceptualization of the mixed methods data analysis process by Onwuegbuzie and Teddlie's (2003)

viii) Data reduction

- This stage involves reducing the dimensionality of qualitative data (i.e. via descriptive statistics, memoing) and quantitative data (i.e. via descriptive statistics, exploratory factor analysis, cluster analysis).

ix) Data display

- This stage involves describing pictorially qualitative data (i.e. matrices, charts, graphs, networks, lists, rubrics, and diagrams) and quantitative data (i.e. tables, graphs)

x) Data transformation

- This is the stage which adopts Tashakkori and Teddlie's (1998) suggestion on 'data transformation', wherein quantitative data are converted into narrative data that can be

analyzed qualitatively (qualitized) or qualitative data are converted into numerical codes that can be represented statistically (quantitized).

- Coding: the first phase of analyzing interview data is coding (Cross, 1992; Burns, 1994) (i.e. classifying materials into themes, issues, topics, concepts and propositions). The coding stages of this study are listed below:

- The first coding stage is to develop a list of coding categories. Then a short name is assigned to each category and a number to each subcategory.
- In the margin of the transcript file, the data can be coded by the appropriate code as the file is read. The code may refer to a phrase, a sentence or a paragraph.
- After codes have been allocated to the text in the transcript file, data coded to each category needs to be collected together. We used NUDIST to store and format the text in a database and apply an analysis package to code the data (Richards 1987).

xi) Data correlation

- The stage involves quantitative data correlated with qualitized data or qualitative data correlated with quantitized data.

xii) Data consolidation

- This is the stage wherein both quantitative and qualitative data are combined to create new or consolidated variables or data sets.

xiii) Data comparison

- This stage involves comparing data from qualitative and quantitative data sources.

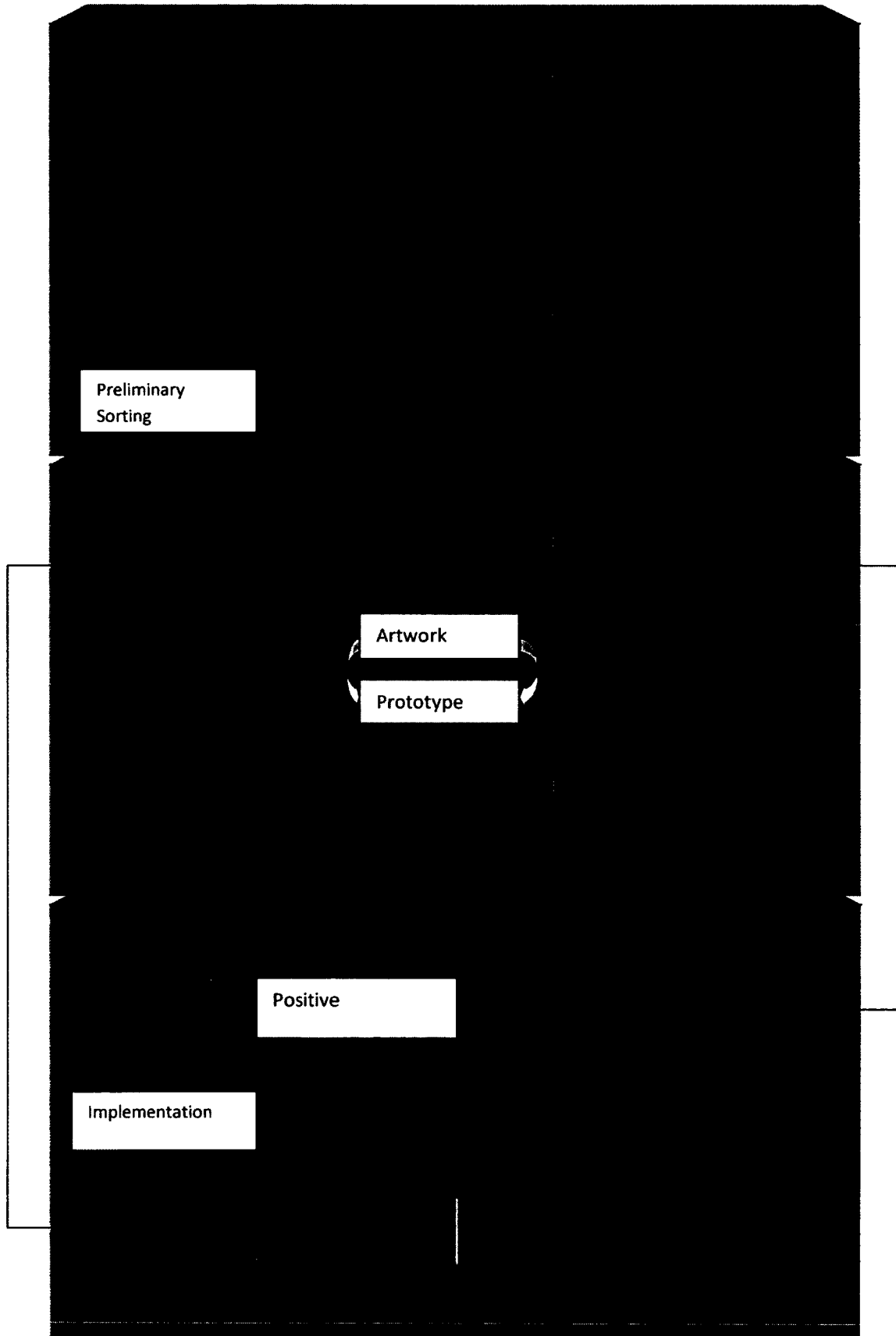
xiv) Data integration

- This is the final stage wherein both quantitative and qualitative data are integrated into either a coherent whole or two separate sets (i.e. qualitative and quantitative) of coherent wholes.

4.2.1 Data Reduction

A total of 100 respondents were invited to an in-depth interview, including 50 competent conceptual fashion designers with 2 to 15 years' (mean = 6.44) experience in fashion design and 50 fashion and textile design postgraduate students. A standardized open-ended interview was adopted. 10 open-ended questions (Appendix 1a) were designed for the proposed theoretical framework of design processes in Chapter 2 and resulted in qualitative data. Neither the wording nor the sequence of the questions on the interview protocol varied, and therefore the presentation was constant across participants (Cross, 1996; Johnson and Turner, 2003).

In answering the interview questionnaire, all respondents expressed their opinions or agreements on the statements showing different design aspects of the proposed theoretical model of design processes as shown below:



Group I: Fashion and textile design postgraduates

A total of 50 in-depth interviews were conducted in Hong Kong, with 40 fashion and textile design female postgraduate students and 10 male postgraduate students. The checklist matrix involved reducing the dimensionality of qualitative data from interviews with design students (See Appendix IIa).

Group II: Conceptual fashion designers

A total of 50 in-depth interviews were conducted in Hong Kong with 38 competent female fashion designers and 12 competent male fashion designers with 2 to 15 years' (mean = 6.44) experience in the fashion industry. The checklist matrix involved reducing the dimensionality of qualitative data from interviews with fashion designers (See Appendix IIb).

4.2.2 Data Display

The reduced dimensionality of qualitative data is listed in Tables 4.1 and 4.2. The reduced qualitative data are pictorially displayed in the charts in this section.

Group I: Fashion and textile design postgraduates' students

A total of 10 interview questions were pictorially displayed in the charts. The reduced dimensionality of qualitative data from interviews with design students is presented in Table 4.1 and is pictorially displayed in Charts 4.1 to 4.10.

4.2.2.1 Postgraduate Students' Design Process

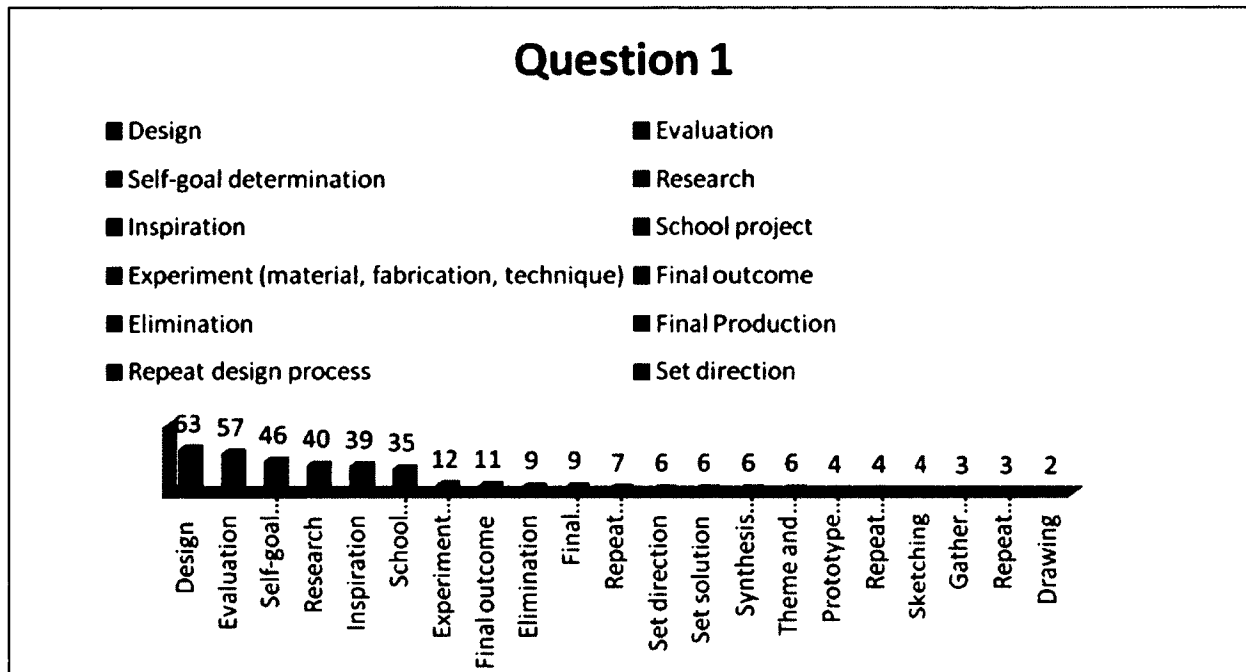


Chart 4.1: Aspects of design processes for postgraduate students

In Chart 4.1, there are 63 utterances indicating that “design” is the most dominant aspect of the postgraduates’ design process. Compared with the “self-goal determination” (46 utterances), “design” is the most important first stage in their design process. “Evaluation” with 57 utterances is the second most important aspect, which shows that students needed evaluation to reassure the final outcome. That “research” and “inspiration” have similar numbers of utterances (40 and 39 respectively) indicates that both instruments played more or less the same role in the design process. That the number of utterances decreases in “experiment (material, fabrication, technique)” and “final outcome” implies that the students did not spend much attention to the later stages of the design process. However,

the number of utterances drops even lower in the “synthesis phase” of the design process (6 utterances in “set direction”, “set solution”, “synthesis ideas” and “theme and mood board”), which shows that the students paid rather little attention to the stage of synthesis. There were very few students (2 utterances) regarding “drawing” as one of the aspects in the design process, which implies that drawing became a less common instrument in the design process of the postgraduate students.

4.2.2.2 Stage 1: Requirement

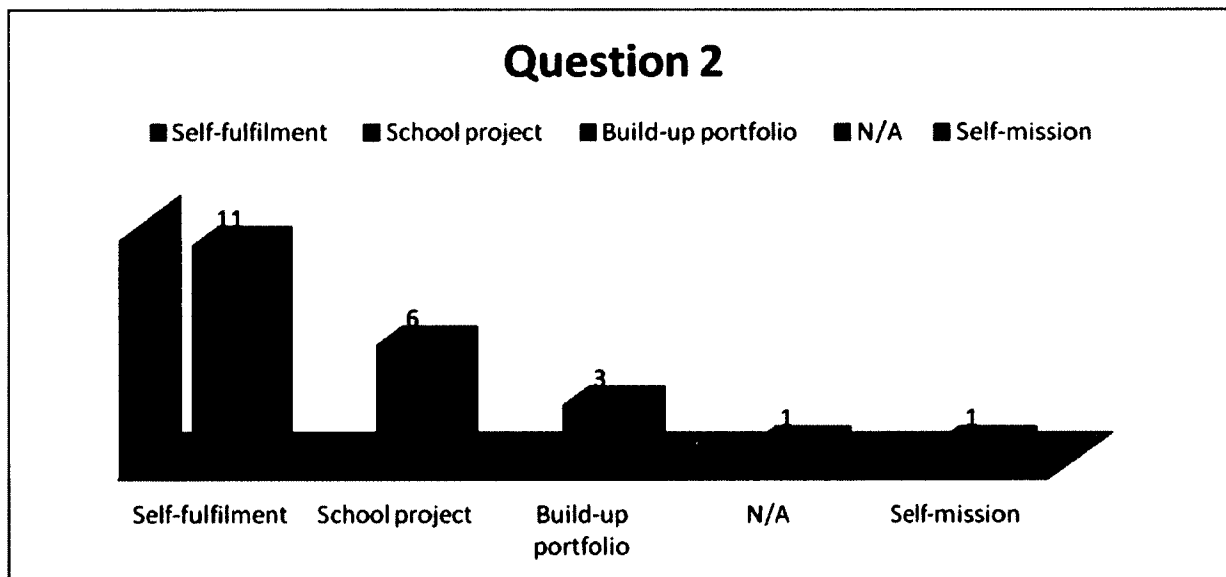


Chart 4.2: Aspects of Stage 1 - Requirement

Similar to the results obtained from Question 1, there are 11 utterances showing that “self-fulfillment” was a dominant aspect of “requirement” during the design process of the postgraduate students. “School project” (6 utterances) and “build-up portfolio” (3 utterances) were equally important in the post-graduate students’ requirement stage of the design process. Surprisingly, there is a relatively high number of utterances in the “N/A” as

some students did not give proper or direct answers, indicating that there were many different reasons that determined a student's requirement for their collection.

4.2.2.3 Stage 2: Goal

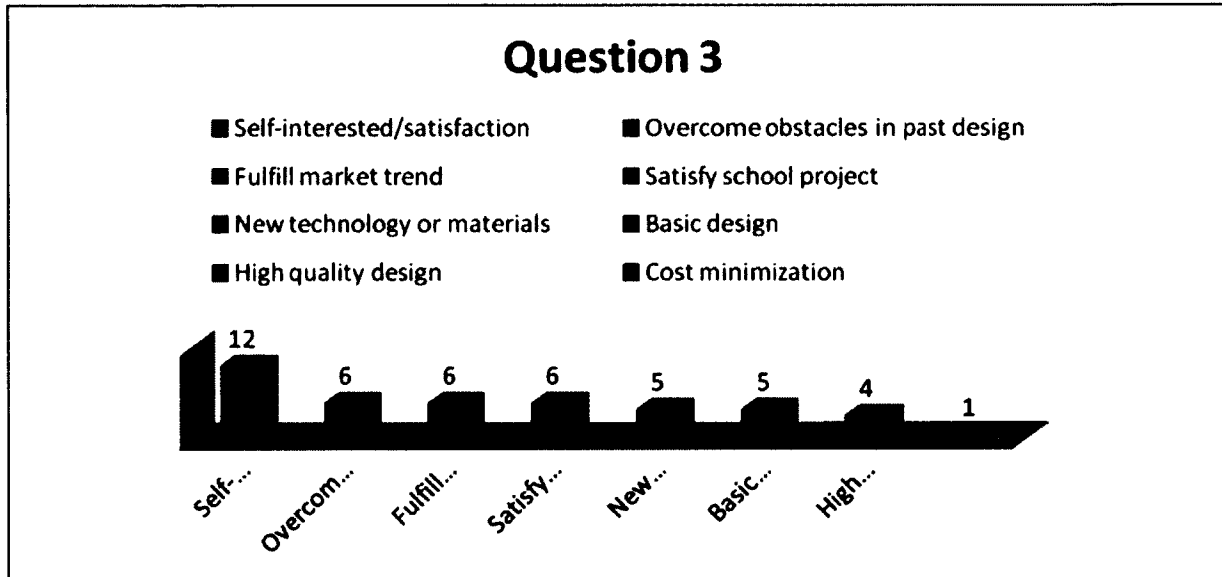


Chart 4.3: Aspects of Stage 2 - Goal

Similar to the results obtained from Questions 1 and 2; there are 12 utterances again showing that “self-interested/satisfaction” was a dominant goal to the postgraduate students. The other goals included “overcome obstacles in past design”, “fulfill market trend”, “and satisfy school project”, “new technology or materials”, “basic design and high quality design”. However, there is a rather low number of respondents choosing the goal of “cost minimization”, which suggests that postgraduate students were not concerned about their budget when creating school projects.

4.2.2.4 Stage 3: Direction

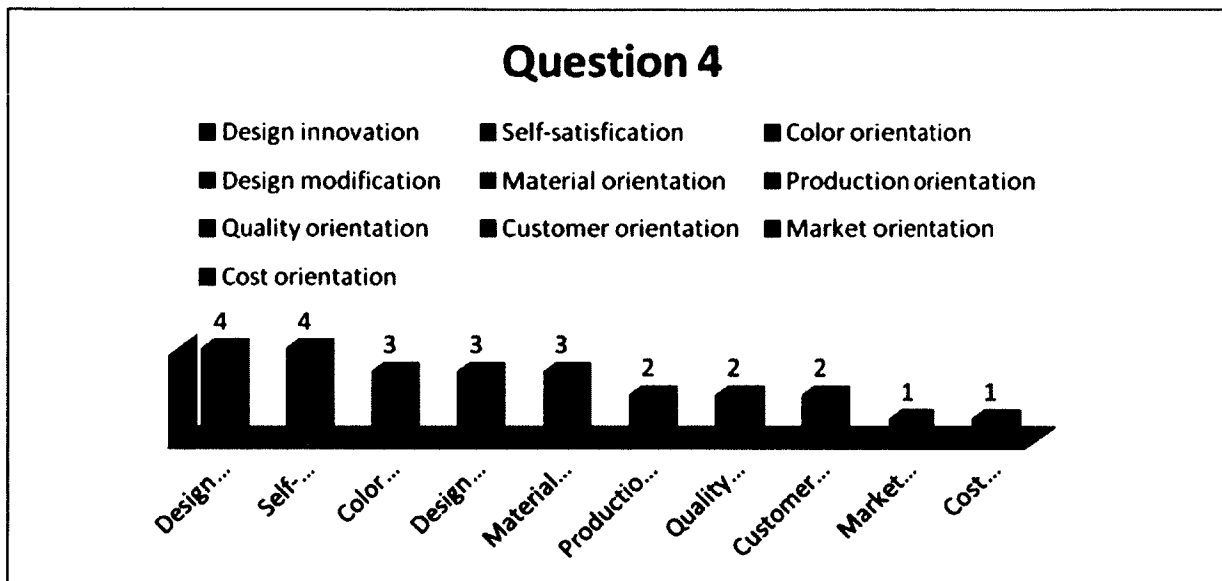


Chart 4.4: Aspects of Stage 3 - Direction

In Charts 4.1 to 4.3, the results suggest that “self-fulfillment” was a dominant aspect of the design process of the postgraduate students when they were creating their final year projects. Both “design innovation” (4 utterances) and “self-satisfaction” (4 utterances) were the important aspects when they determined the direction of their design. Other directions were focused on design orientation, including “color orientation”, “design modification” and “material orientation” (3 utterances each). The low numbers suggest that the postgraduate students were less market-oriented and showed little consideration about cost and budget.

4.2.2.5 Stage 4: Inspiration

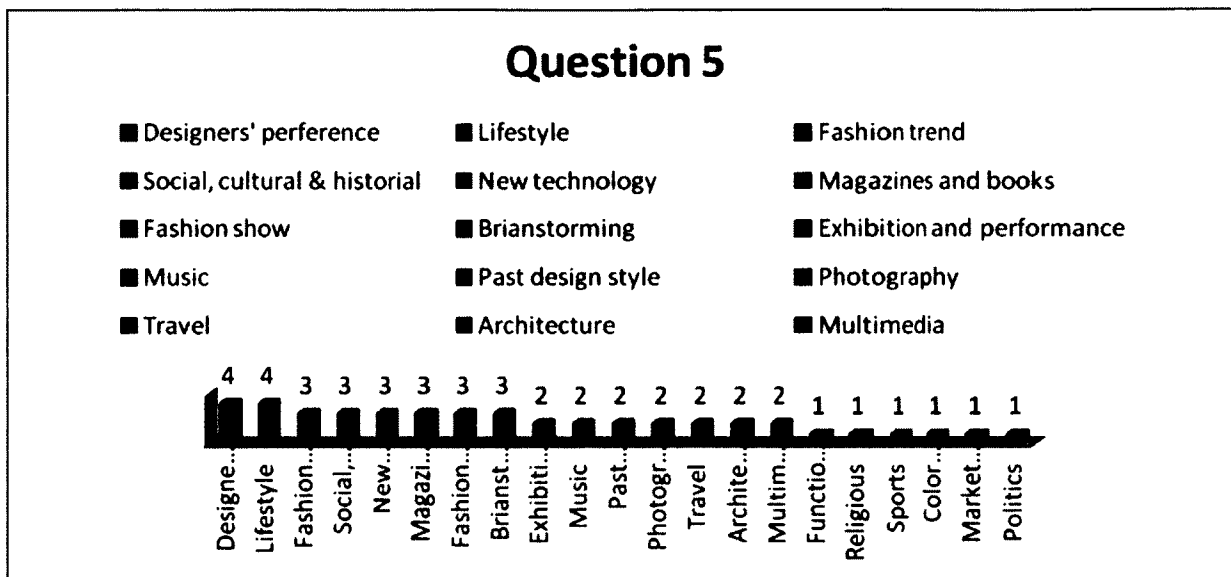


Chart 4.5: Aspects of Stage 4 - Inspiration

These results were consistent with those of Stages 1 to 3. Both “designers’ preferences” and “lifestyle” were the most concerned items in the stage of inspiration, since the postgraduate students wanted to fulfill their satisfaction when creating their collections. “Fashion trend”, “social, cultural and historical” and “new technology” were the second main source which stimulated the students’ creativity. The third important source consisted of “magazines and book” and “fashion show” because they were convenient for the students to get the latest news on fashion trends.

Again, the low numbers of “market trend” and “politics” indicate that the postgraduate students were hardly influenced by those factors and their collections were not market-led.

4.2.2.6 Stage 5: Solution

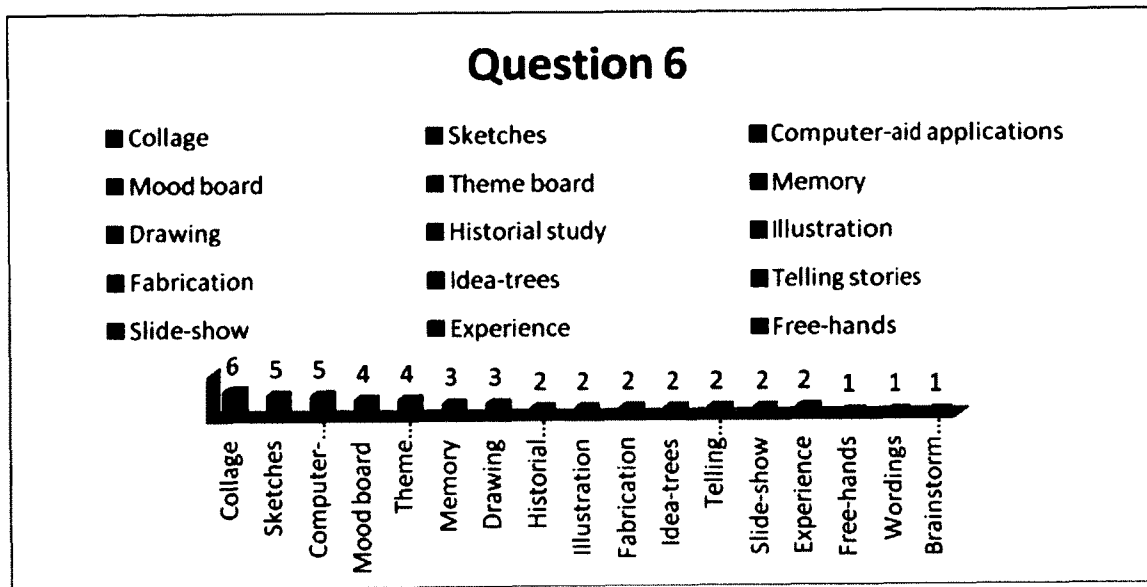


Chart 4.6: Aspects of Stage 5 - Solution

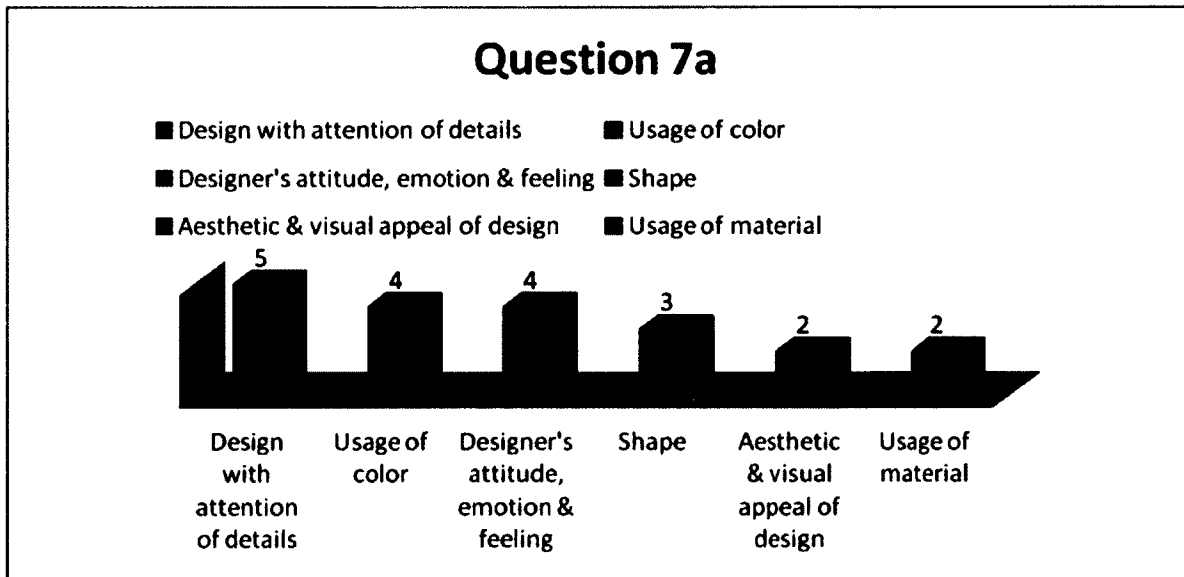
The students were asked about their synthesis solutions or provisional design proposals in response to their analysis phase of the design process, particularly requirements, problems and goals. Each student was asked to give solutions when they synthesized the output from the analysis. The results of different groups ranged from artwork collage to brainstorming. Ultimately, seventeen possible design solutions were compiled as shown in Chart 4.6.

The three most common design solutions were collage (6 utterances), sketches (5 utterances) and computer aid applications (5 utterances). Collages and sketches are deemed traditional to synthesize designers' thoughts and ideas, but due to the emergence of computer technologies, computer-aided applications are now common instruments to students when generating their creative thoughts before design.

Mood and theme boards (4 utterances each) were commonly used by the students to create synthesis solutions and ideas as well. They said that the preparation of mood and theme board could help them distinguish complicated design inspirations, thoughts and ideas clearly.

The relatively small numbers of free-hands, wordings and brainstorm (1 utterance each) show that the students were more comfortable to generate their thoughts or solutions pictorially (i.e. collage, sketches, drawing, mood and theme boards, illustration, fabrication, slide-shows).

4.2.2.7 Stage 6: Design



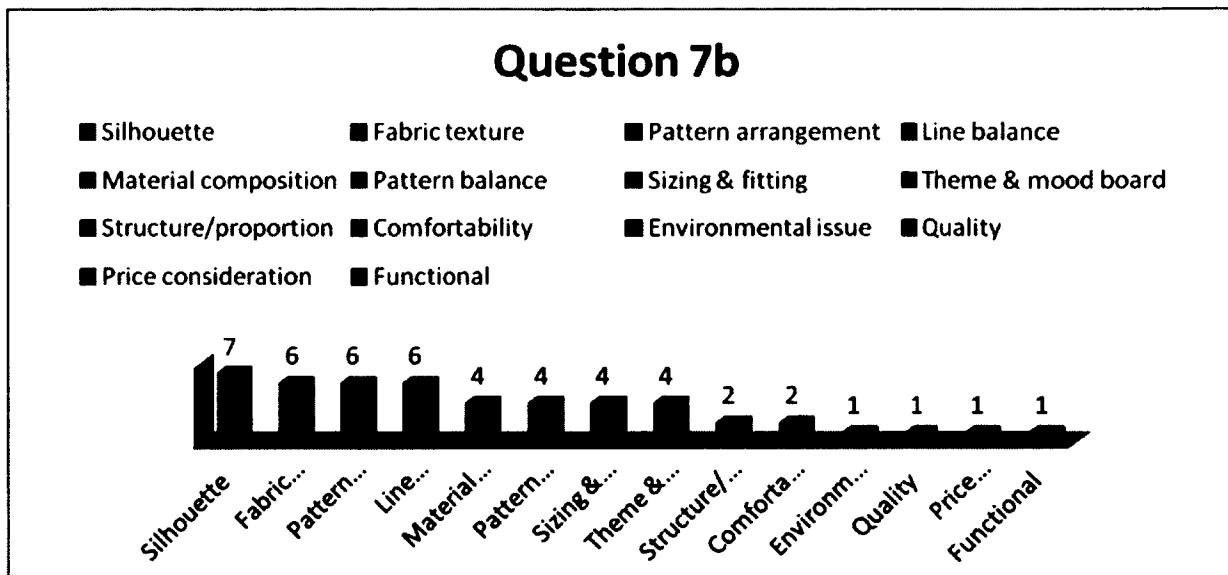


Chart 4.7: Aspects of Stage 6 - Design

Regarding questions 7a & b, the students were asked to express their concerned aspects or design elements when designing their collections in response to the proposed solution. There were totally 20 aspects in the stage of design. According to the results, there were two strands of aspects reported in the design process. One strand of results suggested a possible design collection or designers' attitude without response to the proposed solution (i.e. "design with attention to details", "usage of color", "designer's attitude, emotion & feeling", "aesthetic & visual appeal of design", and "usage of material"). The most important aspect among them was 'design with details' because most of the students thought that the uniqueness of details could both transform their concepts and add individuality to their collections, which made them stand out from the rest of the conceptual designers.

The other stand of results suggested a possible design collection in response to the proposed solution. The most dominant elements of design were 'silhouette' and 'fabric texture'. Since the main goal of the students was 'self-fulfilment' as shown in the early part of the interview, their designs were to satisfy individuality rather than market needs. It was not surprising that they were more concerned about desirable silhouette and fabrication for their collections.

As mentioned in the above sections, 'fabric texture' was one of the dominant design elements which the students emphasized in the design process. Fabrication had an important role in the conceptual design process as well. The high numbers of 'usage of colour', 'pattern arrangement', 'line balance' and 'material composition' show that the students paid a lot of attention to fabrication selection. The above vital design elements were used for expressing the designer's specific mood and theme.

The low numbers of 'price' and 'functional' show that the students were hardly concerned about the market value of their designs.

4.2.2.8 Stage 7: Evaluation Negative

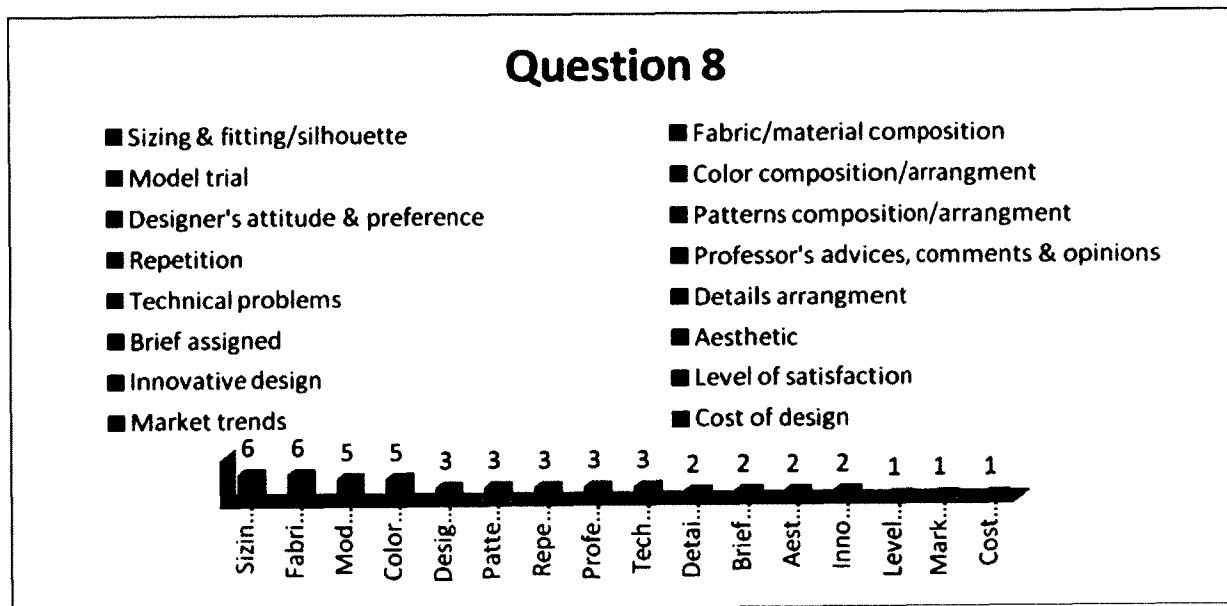


Chart 4.8: Aspects of Stage 7 - Negative Evaluation

When answering Question 8, the students were asked to express their concerns during the evaluation process. They reported that if there was a problem arising from an evaluation in which a solution was recognized as inconsistent with their goals or requirements suggested in the 'analysis phase', it was considered a 'negative' outcome. The 'negative' outcome needed to be regenerated in the cycle of the design process in order to perform a better collection.

Similar to the findings of design elements, 'sizing & fitting/ silhouette' and 'fabric/ material composition' were the most important criteria for the students to evaluate their designs. Unlike mass-produced clothing, the students said that the uniqueness of their design was dependent on the distinctiveness of the silhouette and the exclusiveness of fabric and material compositions.

The third important source of the evaluation process was 'model trails' because it was convenient for the postgraduate students to alter the fit on a human body in order to deliver a 'custom-made' concept like conceptual fashion collections. 'Colour composition/ arrangement' was also a visual element that affected the attractiveness of conceptual design. The students reported that the colour composition was rather important in the process of designing conceptual fashion. Special colour composition could not only attract audiences' attention to the catwalk, but also add individuality to design collections. For example, Rei Kawakubo's black collection created an outstanding conceptual fashion icon in the industry.

As mentioned in the above stages of the design process, the postgraduate students were less influenced by trends and their collections were not market-led. The low numbers of 'market trends' and 'cost of design' suggested that they were hardly concerned about the market needs when evaluating their designs.

4.2.2.9 Stage 8: Evaluation Positive

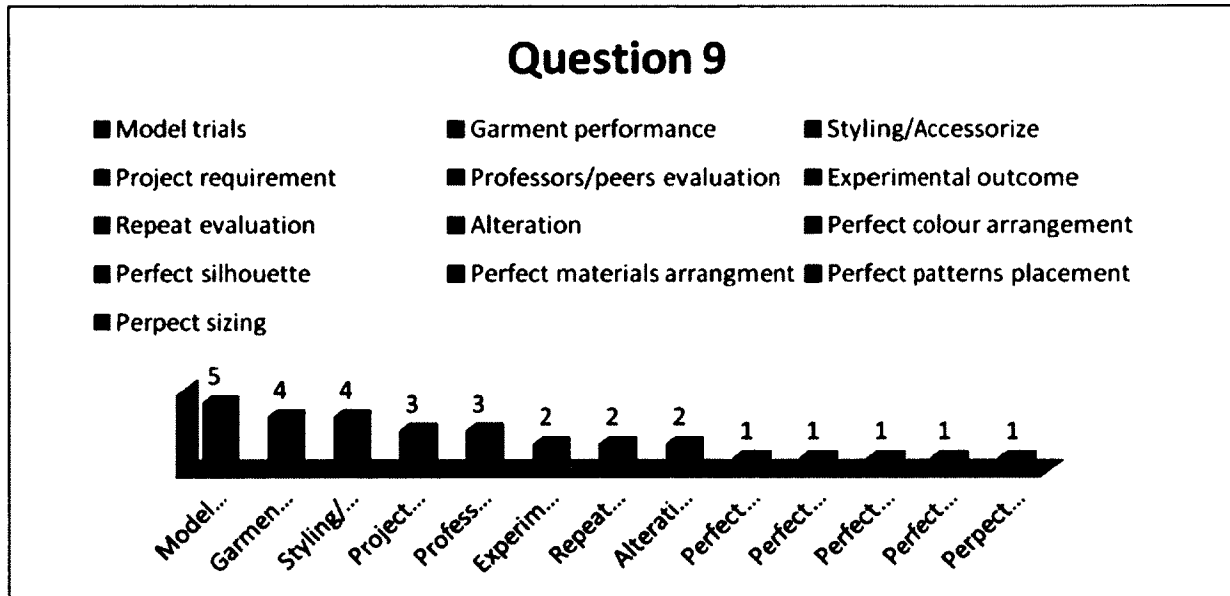


Chart 4.9: Aspects of Stage 8 – Positive Evaluation

The students were asked to express their concerns during the ‘second’ step of the evaluation process in Question 9. They said that an agreement only happened if it acknowledged a solution or design with given goals or requirements. Positive outcomes were filtered to an enhancement evaluation process before completion. The students considered this process as ‘evaluation positive’.

When answering Question 9, the students expressed their concerns in response to their ‘positive’ evaluation in the design process, particularly advancement aspects. According to the results, ‘model trials’ was the most important aspect of the enhancement evaluation process. It is not surprising because the focus on conceptual fashion wasn’t only about the garments, but also the presentation of the clothed body and its movement, which could dramatically affect the viewer’s attention and designers’ messages. The second most

important aspects were identified as “garment performance” and “styling/accessorize”. The students said that they would pay much attention to the way their designs performed in front of the viewers. Their conceptual designs were acted as media to communicate their messages.

Certain aspects of “evaluation negative” became less important in this stage. The low numbers of “perfect colour arrangement”, “perfect silhouette”, “perfect materials arrangement” and “perfect patterns arrangement” indicate that the technical problems were important. The students were interfered by the conceptual aspects in the latter part of the design process.

4.2.2.10 Stage 10: Evaluation Positive Repeat

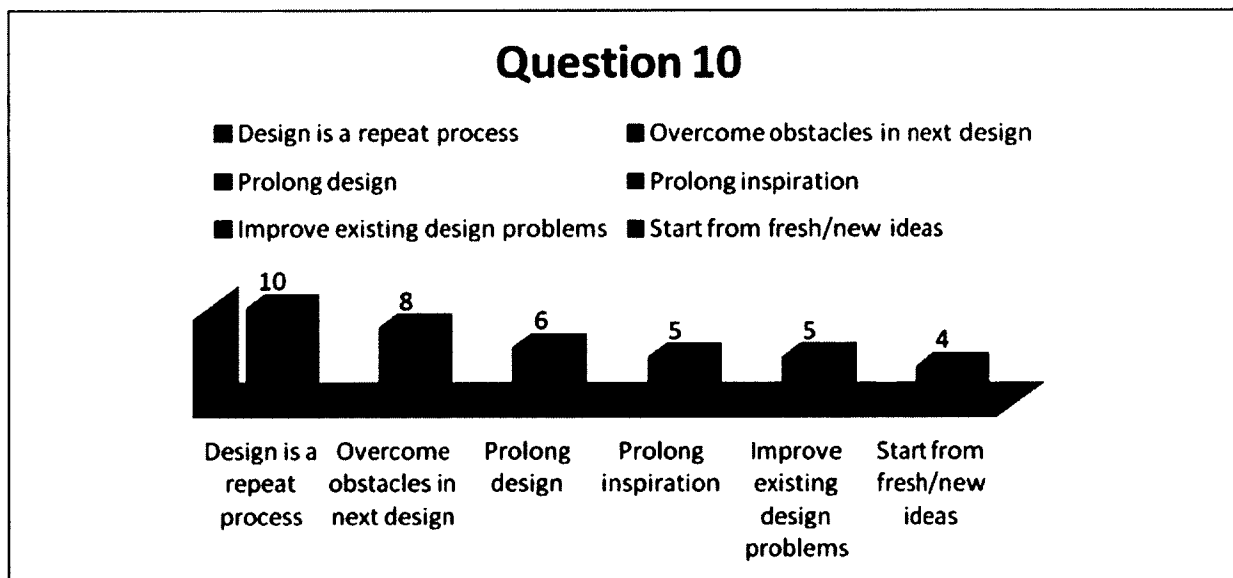


Chart 4.10: Aspects of Stage 10 – Positive Repeat

When answering Question 10, the students suggested the possible development of their design after the evaluation process completed. Surprisingly, a high number of (34

utterances) of students said that they would regenerate their design for further development. There were 10 utterances saying that “design is a repeat process”. The others suggested that their design should be further develop in the design cycle. Only 4 utterances indicate that the cycle of the design process was sequential and would be terminated after the completion of evaluation.

Group II: Conceptual fashion designers

A total of 10 interview questions were pictorially displayed in the charts. The reduced dimensionality of the qualitative data from the interviews with the fashion designers is presented in Table 4.2 and pictorially shown in Charts 4.11 to 4.20.

4.2.2.11 Conceptual Fashion Designers’ Design Process

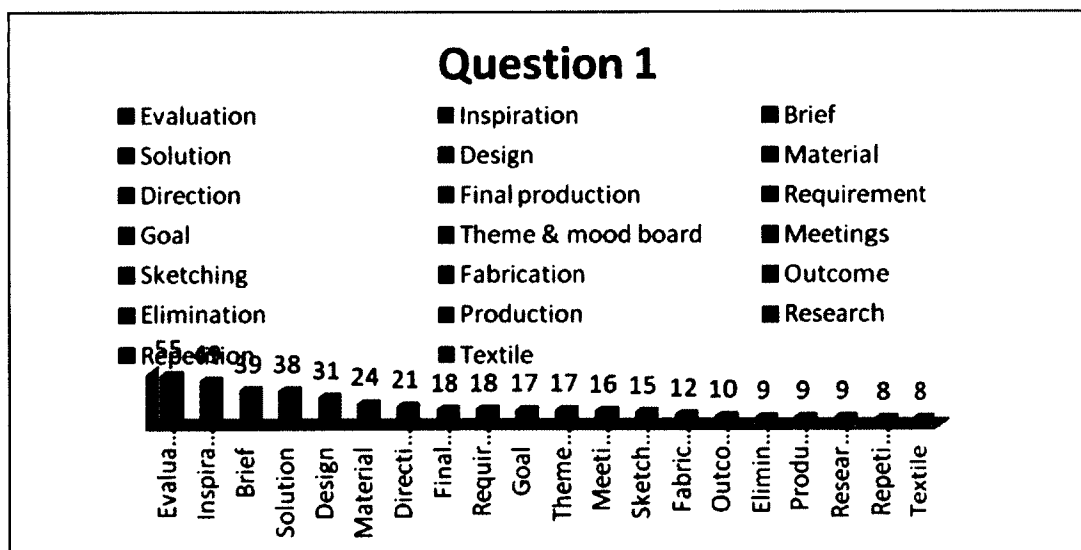


Chart 4.11: Aspects of design processes for conceptual fashion designers

According to Chart 4.11, there are 55 utterances indicating that “design brief” was the most dominant aspect of the conceptual fashion designers’ design process. Compared with “self-

fulfillment” (9 utterances), “design brief” was obviously the most important first stage of their design process. “Inspiration” (49 utterances) was the second most important aspect, which suggests that besides imagination, the designers also needed visual references to stimulate their ideas, concepts and creativity. “Evaluation” (39 utterances) was the third most important aspect, showing that the designers needed to evaluate their final outcome. The almost equal utterance numbers of “evaluation” and “solution” (39 and 38 respectively) indicate that both instruments played the same role in the design process. The utterance numbers of “material”, “theme and mood boards”, “fabrication” and “textile selection” imply that the designers spent many hours in the “synthesis phase”. The number of utterances decreased in the aspects of “goal setting” and “topic determination”, which shows that the designers did not pay much attention to their self-satisfaction. Few designers (3 utterances) regarded “computer-aided sketching” as one of the aspects of the design process. Unlike the results from the postgraduate students, computerized applications were still not a common instrument to the conceptual designers. Contrarily, “collages” and “drafts on sketch books” had higher utterance numbers (10 utterances each).

4.2.2.12 ***Stage 1: Requirement***

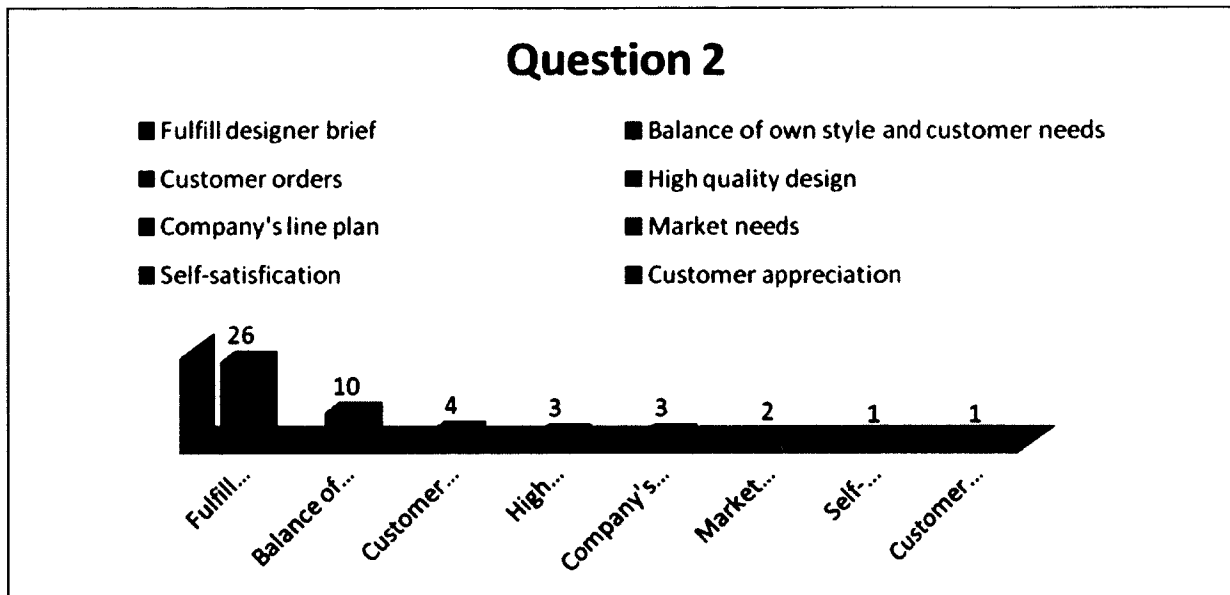


Chart 4.12: Aspects of Stage 1 - Requirement

Similar to the results from Question 1, there were 26 utterances indicating that “fulfill design brief” was the most dominant aspect of the “requirement” stage in the design process of conceptual fashion designers. “Balance of own style and customer needs” was the second most important aspect in the “requirement” stage. The designers said that although part of their job was to cater for the needs of customers, but their own fashion style was the main attraction to the market. “I think they wanted someone who understood the DNA of the brand and shared something of it, but who could bring a new idea,” said Marios Schwab, a conceptual designer who collaborated with Halston to conjure a new vision of the label in 2010. Other aspects such as “customer orders” (4 utterances), “high quality design” and “company’s line plan”(3 utterances) and “market needs” (2 utterances) were similarly important in the conceptual fashion designers’ requirement stage of the design process. “Self-satisfaction” and “customer appreciation” recorded low utterance

numbers, suggesting that the designers were less concerned with their personal reaction; instead they were more concerned about their team spirit and appreciation.

4.2.2.13 Stage 2: Goal

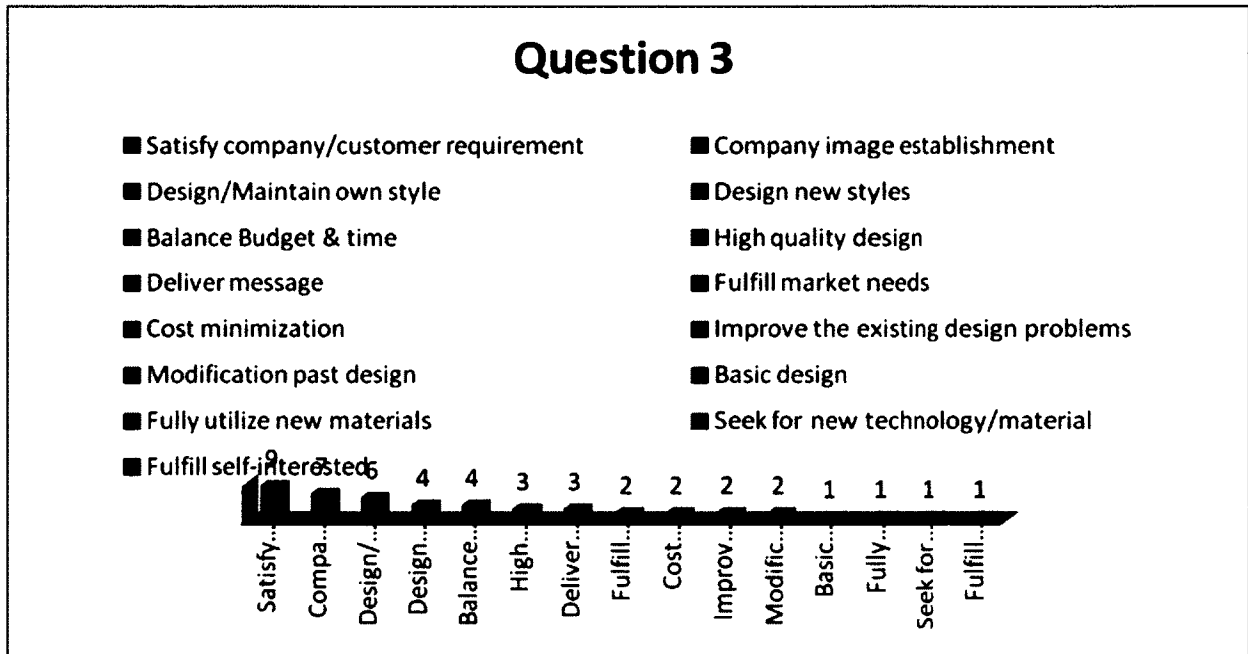


Chart 4.13: Aspects of Stage 2 - Goal

The designers were asked about their general goals before creating any design. Each respondent was asked to mention the goals they wanted. The results spread widely from tangible objectives like “cost minimization” to qualitative intents such as “company image establishment”. There were 12 possible design goals as shown in Chart 4.13.

Similar to the results from Questions 1 and 2, the two most common design goals were “satisfy company/customer requirement” (9 utterances) and “company image establishment” (7 utterances). The findings were deemed reasonable because the

conceptual designers conducted their designs for famous brands or tailor-made their designs on a freelance basis. The conceptual fashion designers also catered for customers' requirements and market needs to maximize their company's profits.

The next important goals were "design/maintain own style" (6 utterances) and "create new style" (4 utterances), suggesting that individuality and uniqueness of their creativity were still valued by most of the conceptual fashion designers. The other goals of the conceptual fashion designers including "high quality design", "deliver messages", "improve existing design problems" and "modification of past design" had similar utterance numbers. The findings suggested that the designers were very concerned with the balance of design characteristics and business requirements. The low utterance number of "fulfill self-interest" indicates that the designers were less concerned with their sense of self-satisfaction.

4.2.2.14 Stage 3: Direction

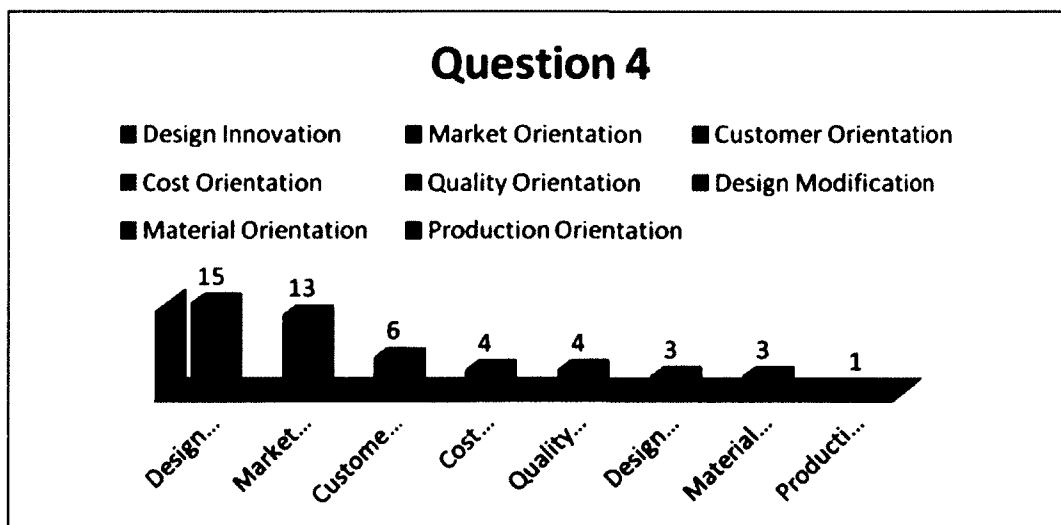


Chart 4.14: Aspects of Stage 3 - Direction

From Charts 4.1 to 4.3, the findings suggest that the conceptual designers worked hard on the balance between their creativity and the business requirements. Therefore, both “design innovation” and “market orientation” became important aspects determining the direction of the collections. However, other design directions were mainly focused on business orientation and production plans, including “customer orientation”, “cost orientation” and “quality orientation”.

4.2.2.15 Stage 4: Inspiration

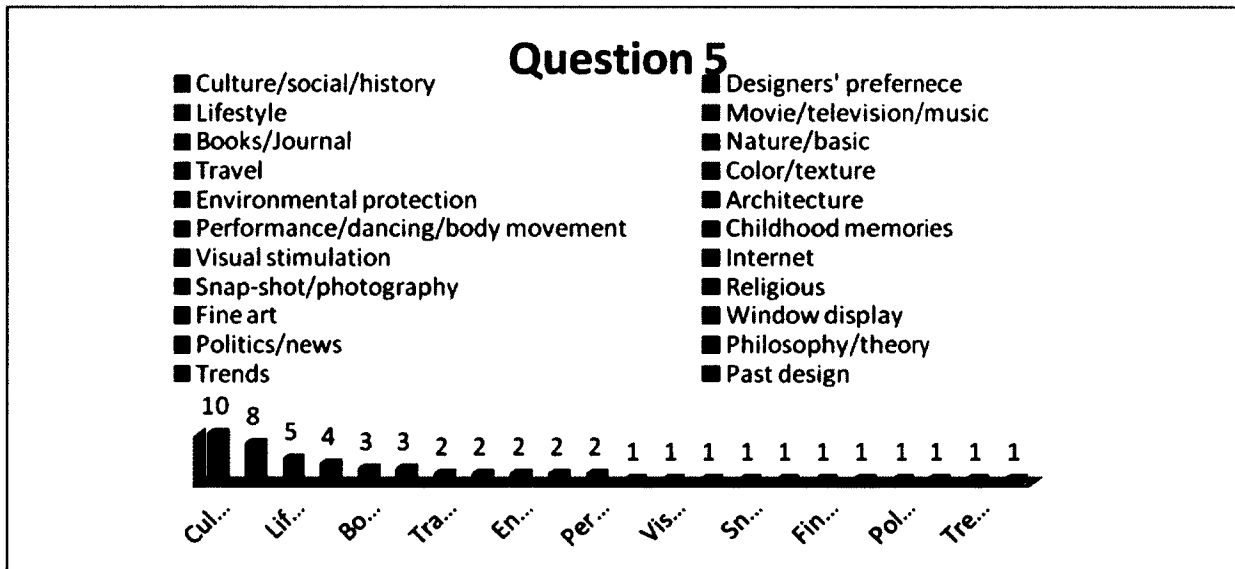


Chart 4.15 Aspects of Stage 4 - Inspiration

Although inspiration was the source of imagination, the conceptual designers mentioned some other sources of ideas as shown in Chart 4.15. The findings were consistent with the results from Stages 1 to 3. Both “culture/social/history” and “designers’ preferences” were the most common concerned items in the stage of inspiration since the characteristics of the conceptual fashion designers were conjured from their own stories. Although most of

them needed to compromise with certain business requirements, but their distinctive style and creativity did not vanish. “Lifestyle” and “movie/television/music” were the second main source of inspiration which stimulated the designers’ creativity. The third most important source of inspiration was “books/magazines/journals” and “fashion show” because they were easily accessible to the designers to receive the latest news on fashion trends. The other factors spread widely from tangible objectives such as “statistic from last sales” to qualitative intents like the designers’ “childhood memories”.

4.2.2.16 Stage 5: Solution

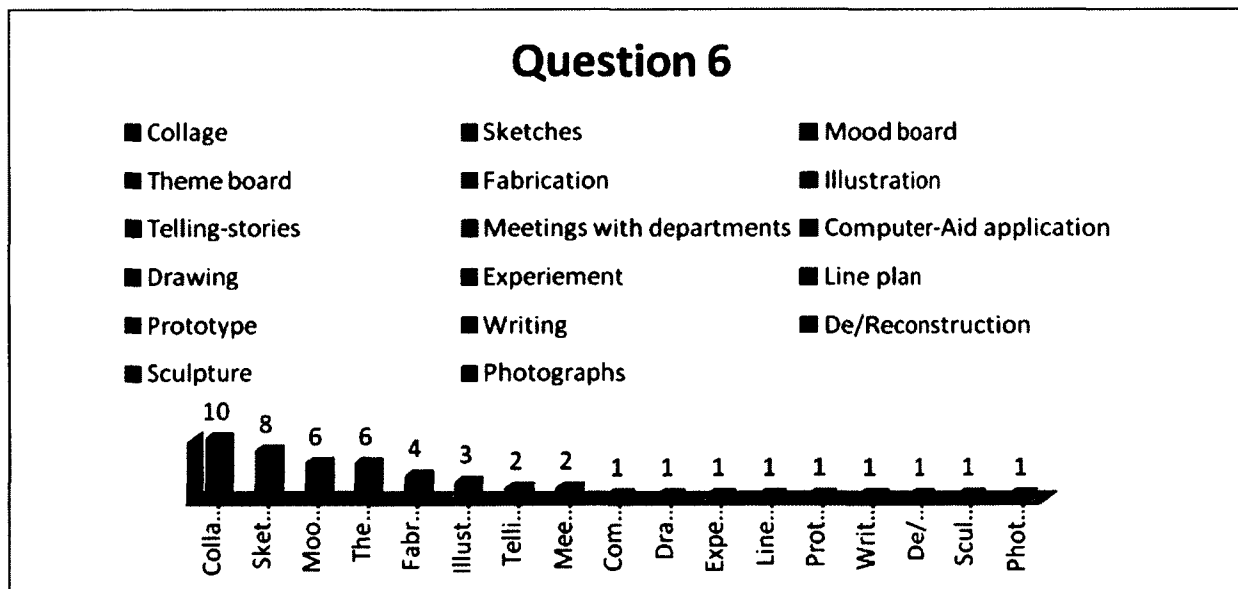


Chart 4.16: Aspects of Stage 5 - Solution

The designers were asked about their synthesis solutions or provisional design proposals in response to their analysis phase of the design process, particularly requirements, problems and goals. Each designer was asked to give their solutions as they synthesized the output from the analysis. The results spread from artwork “collage” to experiments of

“de/reconstruction”. Ultimately, seventeen possible design solutions were compiled as shown in Chart 4.16.

The two most common design solutions were “collage” (10 utterances) and “sketches” (8 utterances). Collages and sketches were deemed traditional to synthesize the designers’ thoughts and ideas. “Mood and theme boards” (6 utterances each) were commonly used by the designers to synthesize solutions and ideas as well. The designers said that the preparation of mood and theme boards could help them distinguish the complicated design inspirations, thoughts and ideas. Another interesting factor was “telling stories”, the conceptual designers said that they frequently “told” their stories or messages through their design works.

The rather low number of “computer-aided application” (1 utterance) showed that the designers were not ready to adopt the computerized application in their design process.

4.2.2.17 Stage 6: Design

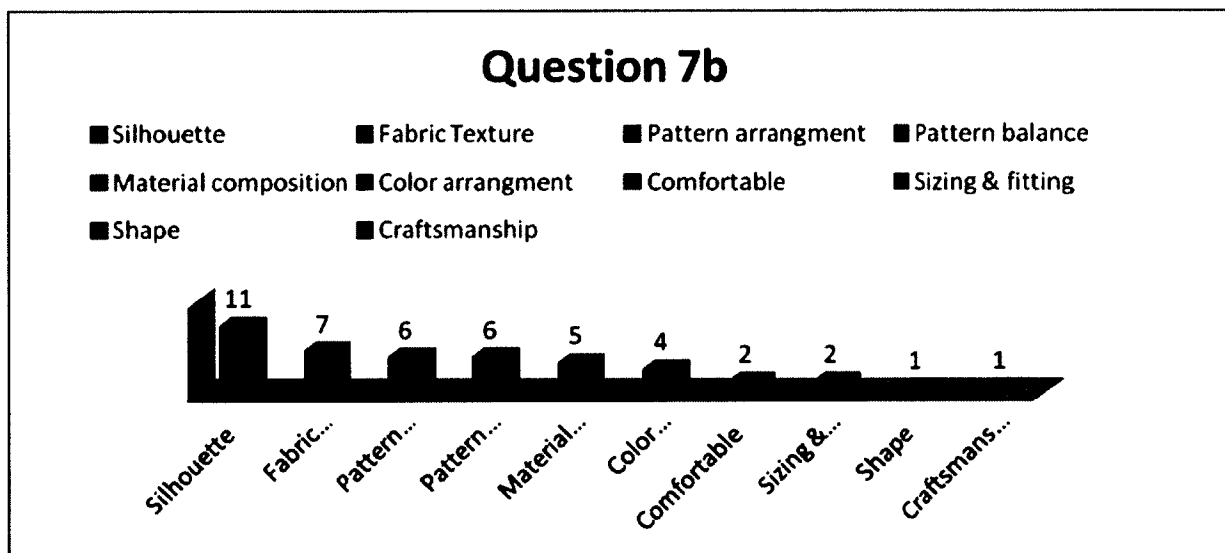
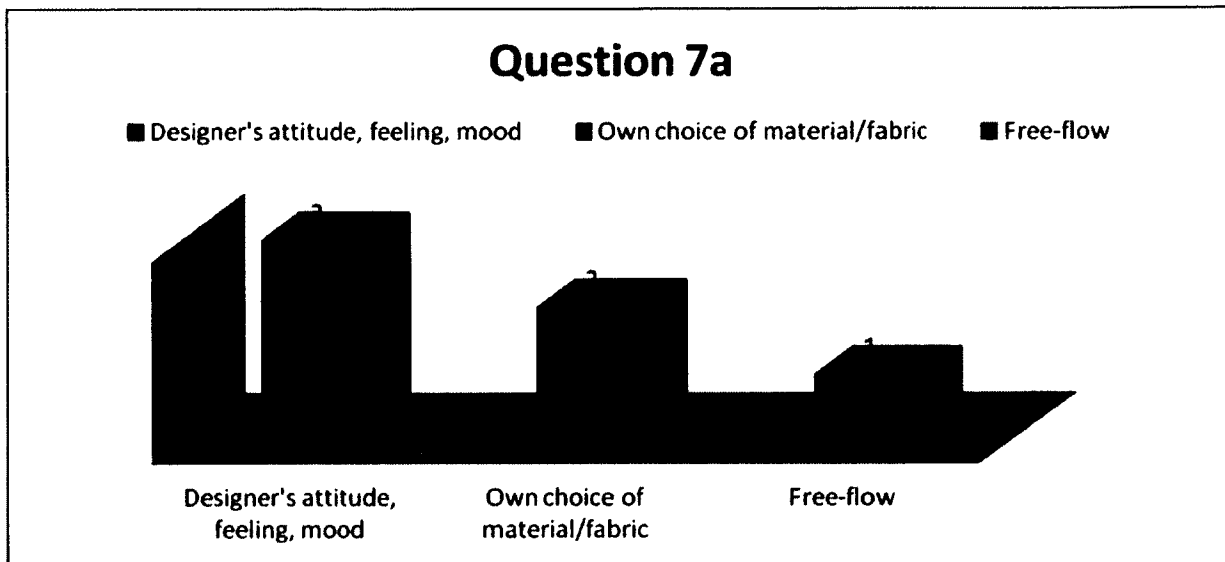


Chart 4.17: Aspects of Stage 6 - Design

When answering Questions 7, the designers were asked to name their concerned aspects or design elements when designing their collections in response to the proposed solutions. There were 13 aspects of the design stage. According to the results, there were two strands of aspects reported. One strand of results suggests a possible design collection or the

designers' attitude irrespective of the proposed solutions (i.e. "designer's attitude/feeling/mood", "own choice of material/fabric" and "free-flow"). The most important aspect among them was 'designer's attitude/feeling/mood' because most of the designers said that they wanted to translate their concepts and messages into their designs for the viewers or wearers. They believed that a design would change the wearer's mood and attitude directly.

The other strand of results suggests a possible design collection in response to the proposed solutions. The most dominant design elements were 'silhouette' and 'fabric texture'. Since one of the designers' main goals was to design innovative collections and create new styles, their designs were to satisfy both individual and market needs. Therefore, it was not surprising that they wanted desirable silhouette and fabrication for their collections in order to attract the viewers' attentions.

As mentioned above, 'fabric texture' was one of the dominant design elements in the design process. Fabrication had an important role in the process of conceptual design as well. The findings in "pattern arrangement", "pattern balance", "material composition" and "colour arrangement" showed that the designers paid a lot of attention to fabrication selection. The above vital design elements were used for expressing the designers' specific mood and theme.

4.2.2.18 Stage 7: Evaluation Negative

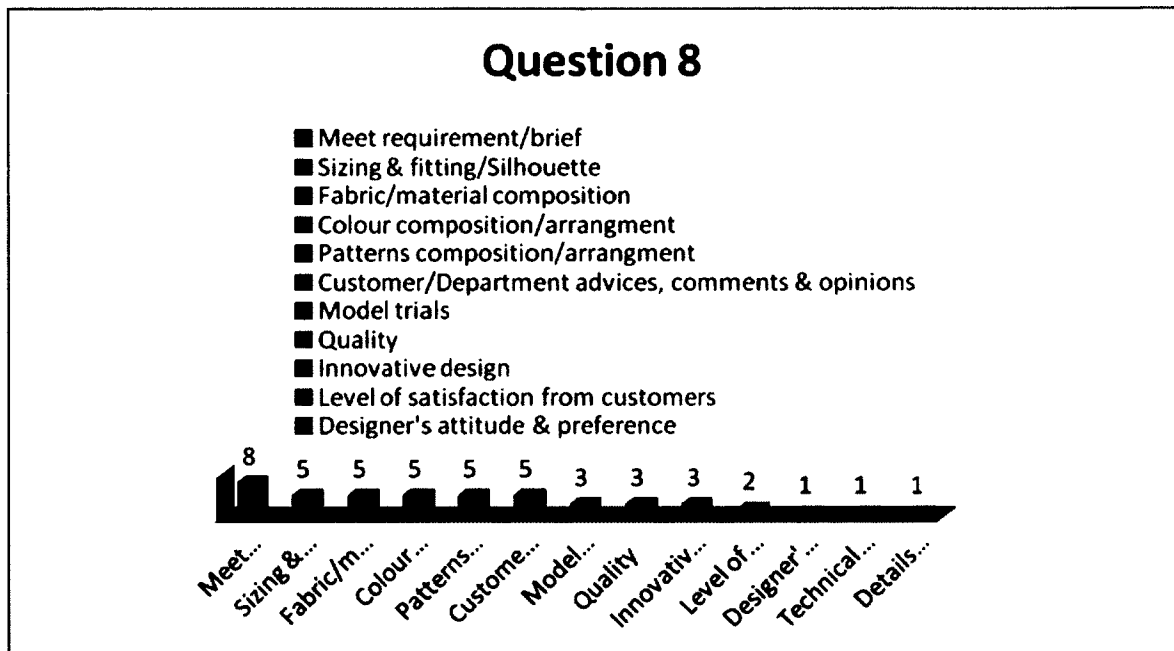


Chart 4.18: Aspects of Stage 7 – Negative Evaluation

When answering Question 8, the designers were asked to express their aspects or concerns in the evaluation process. The designers said that if there was a problem arising from an evaluation in which a solution was in conflict or inconsistent with their goals or requirements suggested in the ‘analysis phase’, then it was considered a ‘negative’ outcome. The ‘negative’ outcome needed to be regenerated in the cycle of the design process in order to design a better collection.

The most important aspect of the conceptual fashion designers was “meeting requirement/brief”. Unlike the students, the designers had a certain job regulations to follow. They didn’t have the freedom that the students enjoyed when doing their school projects. It was their duty to balance creativity and market needs. Therefore, the aesthetic

part of the collection became the second most important criterion for the designers, including “sizing & fitting/silhouette”, “fabric/material composition”, “colour composition/arrangement”, “pattern composition/arrangement”, which had similar roles in the evaluation process for the conceptual designers. The designers said that the uniqueness of their design was dependent on the distinctiveness of the silhouette and the exclusiveness of the fabric and material compositions.

The third most important source was ‘model trials’ because the designers could alter the fit on a human body in order to deliver a ‘custom-made’ concept in their conceptual fashion collections.

As in the above stages of the design process, the designers were less influenced by their sense of satisfaction and their collections were sometimes influenced by customers or market needs. The low number of ‘designer’s attitude & preference” suggested that the designers were less concerned about their personal attitudes when evaluating their designs.

4.2.2.19 Stage 8: Evaluation Positive

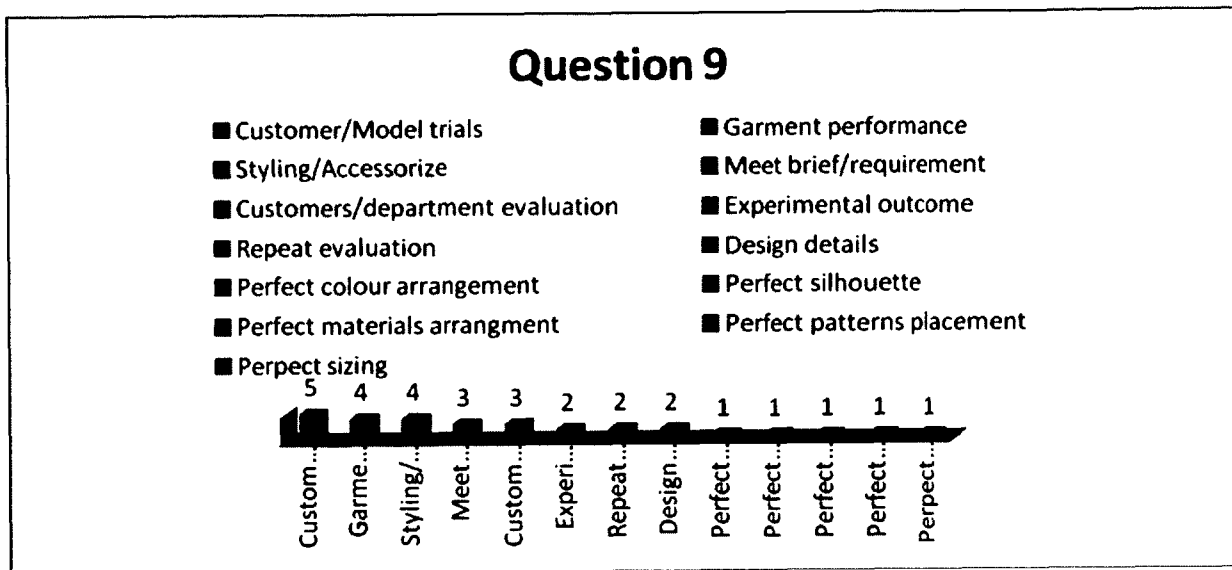


Chart 4.19: Aspects of Stage 8 – Positive Evaluation

When answering Question 9, the designers were asked to express their aspects or concerns during the ‘second’ step of the evaluation process. The designers said that an agreement could be reached only when it acknowledged a solution or design with given goals or requirements. Positive outcomes were filtered to an enhancement evaluation process before completion. The designers regarded this process as ‘evaluation positive’.

When answering Question 9, the designers were asked about their aspects or concerns in response to their ‘positive’ evaluation in the design process, particularly advancement aspects. According to the results, ‘customer/model trials’ was the most important aspect in the enhancement evaluation process. It was not surprising because the focus on conceptual fashion was not only about garments, but also the presentation of the clothed body and its movement, which could dramatically affect a viewer’s attention and the designer’s

messages. The second most important aspects were identified as “garment performance” and “styling/accessories”. The designers said that they paid much attention to how their designs performed in front of the viewers. Their conceptual designs were acted as a medium to communicate their messages.

However, “meeting brief/requirement” and “customer/department’s evaluation” were still the concerns that the designers needed to consider in this latter stage of the design process.

Like the results from the postgraduate students, the important aspects of “evaluation negative” became less relevant in this stage. The low numbers of “perfect colour arrangement”, “perfect silhouette”, “perfect material arrangement” and “perfect pattern arrangement” indicate that the technical problems were not important. The designers and the students were interfered in terms of the conceptual aspects in the latter part of the design process.

4.2.2.20 Stage 9: Evaluation Positive Repeat

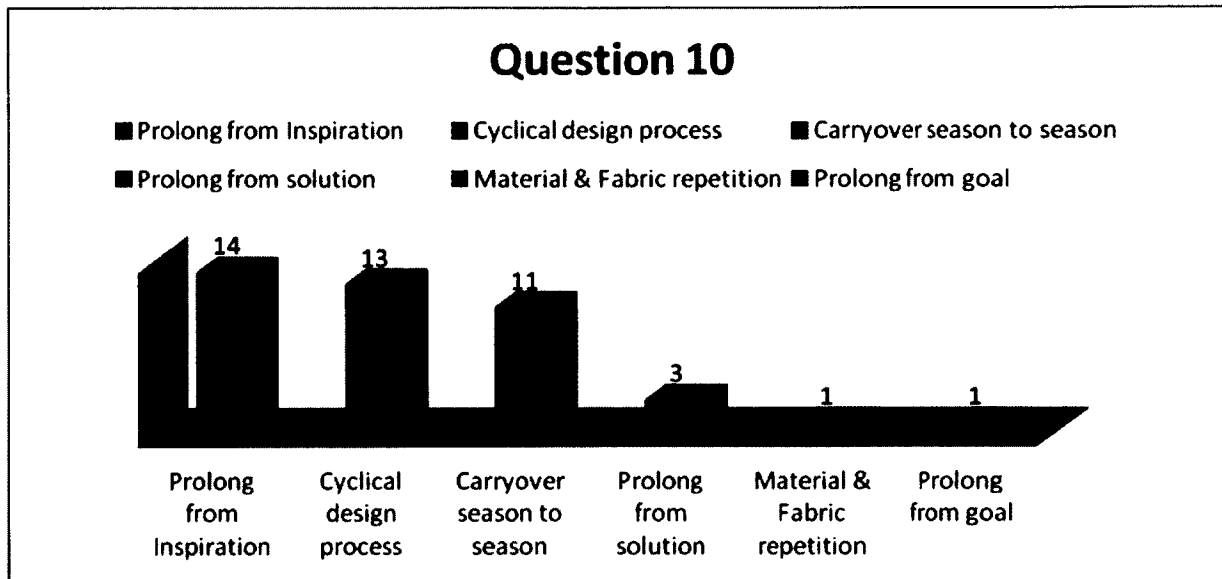


Chart 4.20: Aspects of Stage 10 – Positive Repeat

When answering Question 10, the designers were asked about possible development of their design after the evaluation process completed. Surprisingly, most of the designers (43 utterances) reported that they would regenerate their design for further development.

The findings suggested that a “cyclical design process” occurred in conceptual fashion design. There were 14 utterances showing that the designer would prolong their ideas and creativity from the stage of inspiration. 11 designers said that their designs would carry over to each following season because “repetition makes a greater distinction”. The other findings suggested that the stage of the design cycle could be further developed in different stages of the design process.

4.2.3 Data Transformation

In the first phase of analysis, the interview data were coded (Cross, 1992 and Burns, 1994).

The coding process was designed to capture the relations identified in the design process of the students' final-year projects and the designers' collections. Hence, the turn-structured protocol data of the design discourse activities were coded in terms of the proposed design process model (Figure 1). The transcripts were coded as follows:

Theoretical framework	Codes
ANALYSIS	A
Analysis Requirement	AP
Analysis Goal	AG
Analysis Direction	AD
Analysis Inspiration	AI
SYNTHESIS	S
Synthesis Solution	SS
Synthesis Design	SD
Synthesis Design via Solution	SDS
EVALUATION	E
Evaluation Negative Repeat	ENR
Evaluation Positive	EP
Evaluation Positive Repeat	EPR

Table 4.1: Coding Form

A statement was coded as ANALYSIS if it:

- Expressed a pre-determined design requirement or problem briefly. For example, ‘the theme of the final-year project is environmental sustainability’ was coded as ‘ANALYSIS REQUIREMENT’
- Expressed a need, want or wish generated by the designers, which was coded as ‘ANALYSIS GOAL’
- Expressed a concept directed to the designers’ problem/requirement or goal listed above, which was coded as ‘ANALYSIS DIRECTION’
- Expressed influential factors generated by the external parties, which were coded as ‘ANALYSIS INSPIRATION’

A statement was coded as SYNTHESIS if it:

- Suggested a possible or provisional design proposal in response to the brief, particular requirements, a problem or a goal, which was coded as a ‘SYNTHESIS SOLUTION’
- Suggested a possible design collection without response to the proposed solution, which was coded as ‘SYNTHESIS DESIGN’
- Suggested a possible design collection in response to the proposed solution, which was coded as ‘SYNTHESIS DESIGN SOLUTION’

A statement was coded as EVALUATION if the outcome was:

- Negative – a problem arose from an evaluation in which a solution was in conflict or inconsistent with an 'ANALYSIS', and then regenerated in the cycle of the design process
- Positive – if an agreement acknowledged a solution or design with a given 'ANALYSIS'
- Positive Repeat – an agreement same as 'Positive' to regenerate in the cycle of the design process for the next collection

Each reduced statement from the interviews was coded in categories/ sub-categories: analysis requirement (AR), analysis goal (AG), analysis direction (AD), analysis inspiration (AI), synthesis solution (SS), synthesis design (SD), synthesis design via solution (SDS), evaluation negative repeat (ENR), evaluation positive (EP) or evaluation positive repeat (EPR). After coding the transcripts, the steps of the proposed theoretical framework (Figure 4.2) were transcribed into a coding form as shown in Table 4.3.

4.2.4 Data Correlation

After preparing the data above, instances of explicit ANALYSIS, SYNTHESIS and EVALUATION statements and sub-categories (capturing relations between them) are displayed in Tables 4.3 and 4.4.

Group I: Fashion and Textile Design Post-graduate Students

Theoretical framework	Codes	Total_50	Quantitized
ANALYSIS	A		
Analysis Requirement	AR	22	44%
Analysis Goal	AG	45	90%
Analysis Direction	AD	25	50%
Analysis Inspiration	AI	46	92%
SYNTHESIS	S		
Synthesis Solution	SS	47	94%
Synthesis Design	SD	20	40%
Synthesis Design via Solution	SDS	45	90%
EVALUATION	E		
Evaluation Negative Repeat	ENR	48	96%
Evaluation Positive	EP	30	60%
Evaluation Positive Repeat	EPR	38	76%

Table 4.2: Coding results from student group

Group II: Conceptual Fashion Designers

Theoretical framework	Codes	Total_50	Quantitized
ANALYSIS	A		
Analysis Requirement	AR	50	100%
Analysis Goal	AG	48	96%

Analysis Direction	AD	49	98%
Analysis Inspiration	AI	50	100%
SYNTHESIS	S		
Synthesis Solution	SS	50	100%
Synthesis Design	SD	5	10%
Synthesis Design via Solution	SDS	47	94%
EVALUATION	E		
Evaluation Negative Repeat	ENR	50	100%
Evaluation Positive	EP	30	60%
Evaluation Positive Repeat	EPR	43	86%

Table 4.3: Coding results from conceptual fashion designer group

4.2.5 Data Consolidation

Group I: Fashion and Textile Design Postgraduate Students

From Table 1, all predicted relationships of the students' design process were found in the data as follows:

- Analysis involving requirement (AR, 43% of all explicit statements)
- Analysis involving goal (AG, 90% of all explicit statements)
- Analysis involving direction (AD, 50% of all explicit statements)
- Analysis involving inspiration (AI, 92% of all explicit statements)
- Synthesis involving solution (SS, 94% of all explicit statements)
- Synthesis involving design (SD, 40% of all explicit statements)

- Synthesis involving design-related solution (SDS, 90% of all explicit statements)
- Evaluation yielding negative outcome and repeat (ENR, 96% of all explicit statements)
- Evaluation yielding positive outcome (EP, 60% of all explicit statements)
- Evaluation yielding positive outcome but repeat (EPR, 76% of all explicit statements)

As seen from Table 1, *'goal'* occurred more than *'requirement'* (the number of outcome statements) in the analysis phase of the design process, showing that *'goal setting'* was a dominant aspect of the postgraduate students' design process as compared with the requirement. Although there were more than 50% of utterances indicating that they had involved *'requirement'* in their analysis processes, but 90% suggested that the postgraduate students paid more attention to setting up their *'goal'* in the analysis phase of their design process.

There were half of the utterances indicating that they had involved *'direction'* in the analysis phase of the design process, showing that the postgraduate students would consider setting up a direction for their collections, but didn't think *'direction'* was a dominant aspect of their design processes. Instead, they believed that *'inspiration'* was an important aspect which accounted for 93% of utterance agreements.

'Solution' and *'design'* had similar roles in the design process. Above 90% of the respondents said that they had involved both solution and design in the synthesis phase of their design process, showing that the *'synthesis'* phase was indispensable to the postgraduate students' design processes. Furthermore, the close percentages of *'solution'*

(94%) and '*design relates Solution*' (90%) implied an inseparable relationship between them, which suggested that a design could only occur after the problem-solution, has been stated by the students.

'*Evaluation negative*' occurred more often than goals or solutions in the design process, showing that evaluation was not simply a judgement on whether a proposed solution was desirable. Instead, evaluation related a solution to the students' goals. The interrelationship between '*goal*', '*solution*' and '*evaluation negative*' indicated that there was cyclical movement in the design process of the postgraduate students.

The negative and positive outcomes that emerged from evaluation were statements about the strengths or weaknesses of solutions in relation to the students' goals, comprising constraints which the students regarded as task progresses or self challenges.

The data also indicated that the importance of '*goal*', '*solution*' and '*evaluation*' in the conceptual design process of the postgraduate students. There were 90% of the statements coded as analysis goal (AG) and 95% as synthesis solution (SS), implying that it was important to generate solutions with reference to the individual goals in the design process of the postgraduate students.

The comparatively low percentage (40%) of the statement coded as '*design*' in the stage of *Synthesis* indicated that a design without solutions might not be the best outcome of *analysis*.

96% of the statements were coded as *'evaluation negative'* and a surprising 75% coded as *'evaluation positive repeat'*, which suggested that evaluation played a dominant role in exploring new solutions and designs for a number of reasons as follows:

- It produces outcomes that enable informed correction and further development to be made
- It produces outcomes that potentially connect multiple syntheses to a specific *'solution'*, thus building up evidence for newer solutions and designs
- Only through evaluation that designers are able to know whether and why a *'solution'* is good or bad

Besides the explicit numbers above, the revision of the phase-based conceptual design process for the postgraduate students is shown below:

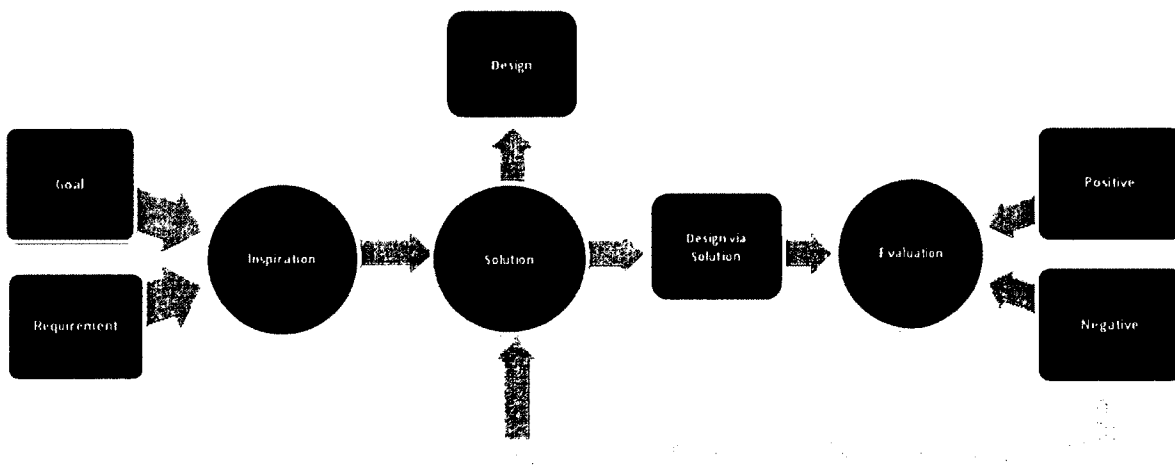


Figure 4.2: Conceptual design process for postgraduate students

Group II: Conceptual Fashion Designers

From Table 2, all predicted relationships of the conceptual fashion designers' design process were found in the data as follows:

- Analysis involving requirement (AR, 100% of all explicit statements)
- Analysis involving goal (AG, 96% of all explicit statements)
- Analysis involving direction (AD, 98% of all explicit statements)
- Analysis involving inspiration (AI, 98% of all explicit statements)
- Synthesis involving solution (SS, 100% of all explicit statements)
- Synthesis involving design (SD, 5% of all explicit statements)
- Synthesis involving design-related solution (SDS, 94% of all explicit statements)
- Evaluation yielding negative outcome and repeat (ENR, 96% of all explicit statements)
- Evaluation yielding positive outcome (EP, 60% of all explicit statements)
- Evaluation yielding positive outcome but repeat (EPR, 86% of all explicit statements)

In Table 2, the close percentages of “requirement, goal, direction and inspiration” indicated that these four sequential stages were highly related and played important roles in the analysis phase of the design process of the conceptual fashion designers.

However, 100% of the responses showed that *'requirement'* was the most dominant aspect of the designers' design process in comparison with *'goal'* setting. Although there were more than 96% of utterances indicating that the designers involved *'goal'* in their analysis process, 100% suggested that the designers gave priority to their project brief or requirement in the analysis phase of their design process.

'Direction' and *'inspiration'* accounted for 98% and 100% of the responses respectively, suggesting that they were highly significant aspects of the analysis process of the conceptual fashion designers. The designers reported that both direction and inspiration balanced out their endless creativity and business decisions. With theme and mood boards, the designers could know how much they could accomplish in each collection. The relatively low utterance number of "goal" suggested that the designers were more satisfied when fulfilling 'requirements' by their customers, companies or the market rather than their own needs..

Same as the results from the postgraduate students, *'solution'* and *'design'* had similar aspects of the design process. Above 90% of the respondents said that they had involved both solution and design in the synthesis phase of their design process, showing that the *'synthesis'* phase was indispensable to the conceptual designers. Furthermore, the close percentages of *'solution'* (100%) and *'design via solution'* (94%) suggested an inseparable relationship between them. This also suggested that a design might only occur after the problem-solution has been stated by the designer. However, a relatively low percentage of *'design'* (10%) showed that the designers would not generate designs without a proposed solution.

The data also indicated that the importance of 'requirement' and 'solution' in the conceptual design process. Since 100% of the utterances were coded as analysis requirement (AR) and synthesis solution (SS), the data suggested that it was an important

process for the conceptual fashion designers to generate solutions with reference to the designer or company's requirements.

'*Evaluation negative*' was as important as '*requirement*', '*inspiration*' and '*solution*' in the design process. '*Evaluation*' was not simply a judgement on whether a proposed solution was desirable. It also related '*Solution*' to the designers' '*Requirement*'. The interrelationship between '*requirement*', '*inspiration*', '*solution*' and '*evaluation negative*' indicated that there was cyclical movement in the design process of the conceptual fashion designers.

The negative and positive outcomes that emerged from evaluation were statements about the strengths or weaknesses of solutions in relation to the designers' '*requirement*', comprising constraints which the designers regarded as task progresses or self challenges.

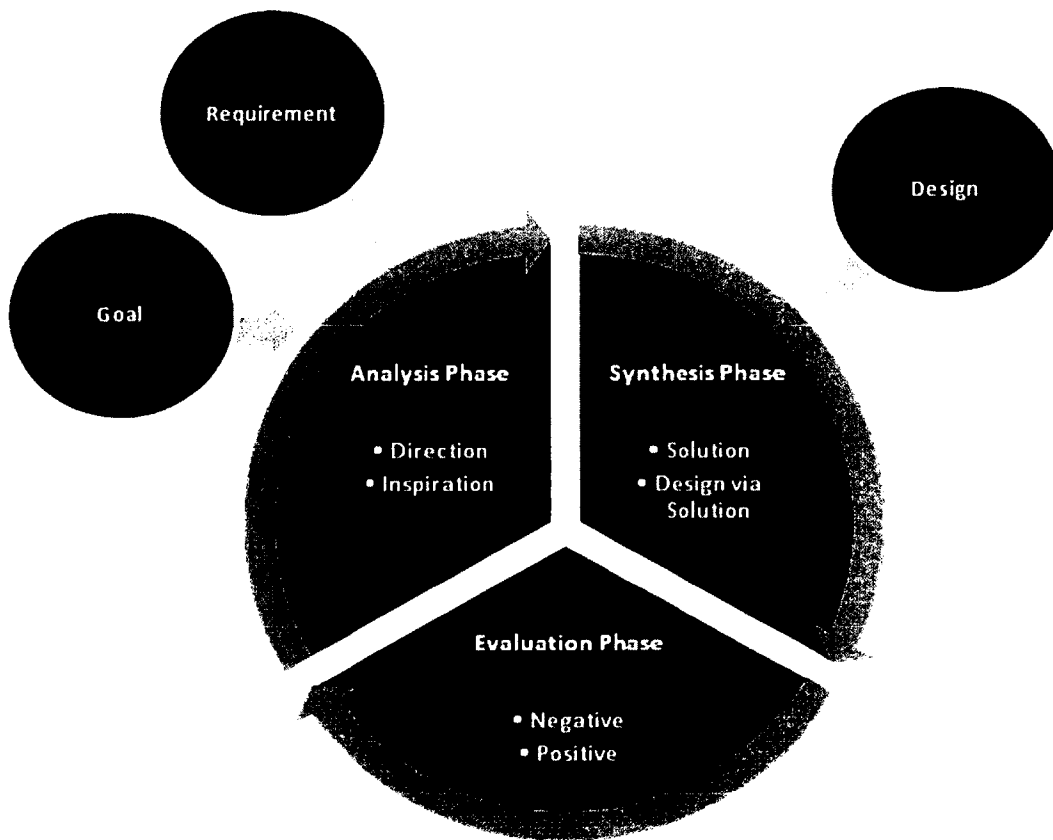
The comparatively low percentage (10%) of the statement coded as '*design*' in the phase of *synthesis* indicated that a design without solutions might not be the best outcome of *analysis*.

100% of the statements coded as '*evaluation negative*' and a surprising 86% coded as '*evaluation positive repeat*' suggested that evaluation played a dominant role in exploring new solutions and designs for a number of reasons as follows:

- It produces outcomes that enable informed correction and further development to be made

- It produces outcomes that potentially connect multiple syntheses to a specific 'solution', thus building up evidence for newer solutions and designs
- Only through evaluation that designers are able to know whether and why a 'solution' is good or bad

Besides the explicit numbers above, the revision of the activity-based conceptual design process for the conceptual fashion designers is shown



below:

Figure 4.3: Conceptual design process model for conceptual fashion designers

4.2.6 Data Comparison

Group I: Fashion and Textile Design Postgraduates Students

First-order Category Students	Codes	Total_50	Quantitized	Second-order Category	Quantitized
ANALYSIS	A				
Analysis Requirement	AR	22	44%		
				Self-satisfaction	6
				Build-up portfolio	3
				Experiment new materials	1
				Self-mission	1
				Overcome obstacles in past design	6
				Fulfil market trend	6
				Satisfy school project	6
				New technology or materials	5
				Basic design	5
				High quality design	4
				Cost minimization	1

Analysis Direction	AD	25	50%		
				Colour orientation	3
				Design modification	3
				Material orientation	3
				Production orientation	2
				Quality orientation	2
				Customer orientation	2
				Market orientation	1
				Cost orientation	1
				Fashion trend	3
				Social, cultural & historical	3
				New technology	3
				Magazines and books	3
				Fashion show	3
				Brainstorming	3

				Exhibition and performance	2
				Music	2
				Past design style	2
				Photography	2
				Travel	2
				Architecture	2
				Multimedia	2
				Functional	1
				Religious	1
				Sports	1
				Colour trend	1
				Market trend	1
				Politics	1
				SYNTHESIS	S
				Sketches	5
				Computer-aided applications	5
				Memory	3

				Drawing	3
				Mood board	4
				Theme board	4
				Historical study	2
				Illustration	2
				Fabrication	2
				Idea-trees	2
				Telling stories	2
				Slide-show	2
				Experience	2
				Free-hands	1
				Words	1
				Brainstorming	1
Synthesis Design	SD	20	40%		
				Usage of colour	4
				Designer's attitude, emotion & feeling	4
				Shape	3
				Aesthetics & visual appeal of design	2

				Usage of material	2		
						Fabric texture	6
						Pattern arrangement	6
						Line balance	6
						Material composition	4
						Pattern balance	4
						Sizing & fitting	4
						Theme & mood boards	4
						Structure/proportion	2
						Comfort ability	2
						Environmental issue	1
						Quality	1
						Price consideration	1
						Functional	1
EVALUATION	E						
Evaluation Negative Repeat	ENR	48	96%				

				Model trial	5
				Colour composition/arrangement	5
				Designer's attitude & preference	3
				Pattern composition/arrangement	3
				Repetition	3
				Professor's advices, comments & opinions	3
				Technical problems	3
				Detail arrangement	2
				Assigned brief	2
				Aesthetics	2
				Innovative design	2
				Level of satisfaction	1
				Resource limitation	1
				Cost of design	1
Evaluation Positive	EP	30	60%		
				Advance details	4
				Repeat until satisfied	4

				Project requirement	3
				Professors/peers evaluation	3
				Experimental outcome	2
				Repeat evaluation	2
				Perfect colour arrangement	2
				Accessories	1
				Perfect silhouette	1
				Perfect material arrangement	1
				Perfect pattern placement	1
				Styling	1
Evaluation Positive Repeat	EPR	38	76%		
				Overcome obstacles in next design	8
				Prolong design	6
				Prolong inspiration	5
				Improve existing designs	5
				Start afresh/new ideas	4

Group II: Conceptual Fashion Designers

First-order Category Designers	Codes	Total_50	Quantitized	Second-order Category	Quantitized		
ANALYSIS	A						
				Balance between own style and customer needs	10		
				Customer orders	4		
				High quality design	3		
				Company's line plan	3		
				Market needs	2		
				Self-satisfaction	1		
				Customer appreciation	1		
						Company image establishment	7
						Design/Maintain own style	6
						Create new styles	4
						Balance between budget and time	4

High quality design	3
Deliver messages	3
Fulfil market needs	2
Cost minimization	2
Improve existing designs	2
Modify past design	2
Basic design	1
Fully utilize new materials	1
Seek new technology/material	1
Fulfil self-interest	1
Market orientation	13
Customer orientation	6
Cost orientation	4
Quality orientation	4
Design modification	3
Material orientation	3
Production orientation	1

Designers' preference	8
Lifestyle	5
Movie/television/music	4
Magazines/books/journals	3
Nature/basic	3
Travel	2
Colour/texture	2
Environmental protection issues	2
Architecture	2
Performance/dancing/body movement	2
Childhood memories	1
Visual stimulation	1
Internet	1
Snap-shot/photography	1
Religion	1
Fine art	1
Window display	1

				Politics/news	1
				Philosophy/theory	1
				Trends	1
				Past design	1
SYNTHESIS	S				
				Sketches	8
				Mood board	6
				Theme board	6
				Fabrication	4
				Illustration	3
				Telling stories	2
				Meeting with departments	2
				Computer-aided applications	1
				Drawing	1
				Experiment (fabrication/material)	1
				Line plans	1
				Prototype	1

				Words and poems	1
				De/Reconstruction	1
				Sculpture	1
				Photographs	1
Synthesis Design	SD	5	10%		
				Own choice of materials/fabrication	2
				Free-flow	1
				Fabric Texture	7
				Pattern arrangement	6
				Pattern balance	6
				Material composition	5
				Colour arrangement	4
				Comfort	2
				Sizing & fitting	2
				Shape	1
				Craftsmanship	1
EVALUATION	E				

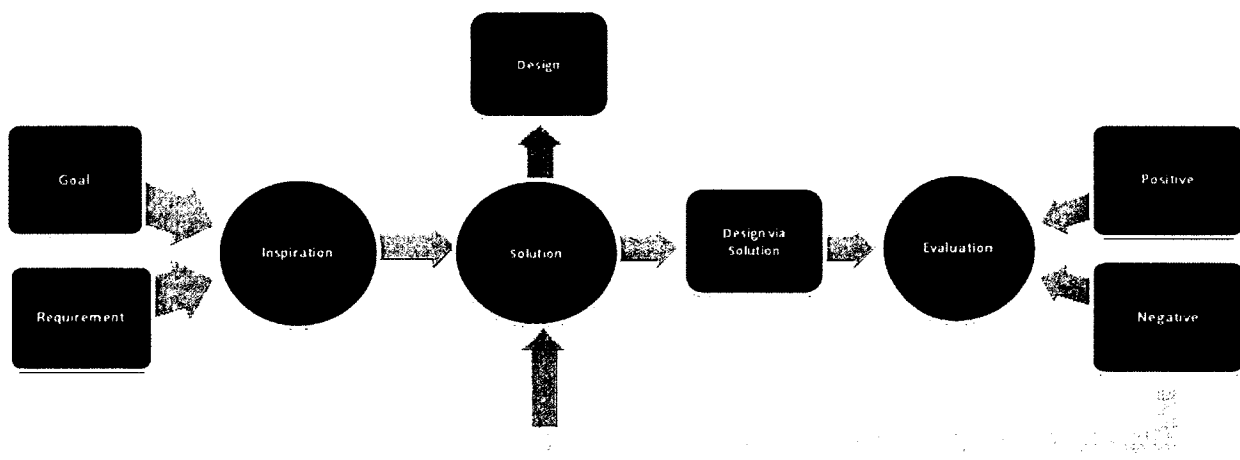
Evaluation Negative Repeat	ENR	50	100%		
				Sizing & fitting/Silhouette	5
				Fabric/material composition	5
				Colour composition/arrangement	5
				Pattern composition/arrangement	5
				Customers/departments' advices, comments & opinions	5
				Model trials	3
				Quality	3
				Innovative design	3
				Level of customer satisfaction	2
				Designer's attitude & preferences	1
				Technical problems	1
Detail arrangement	1				
Evaluation Positive	EP	30	60%		
				Garments performance	4
				Styling/accessories	4
				Meet brief/requirement	3

				Customers/departments evaluation	3
				Experimental outcome	2
				Repeat evaluation	2
				Design details	2
				Perfect colour arrangement	1
				Perfect silhouette	1
				Perfect material arrangement	1
				Perfect pattern placement	1
				Perfect sizing	1
Evaluation Positive Repeat	EPR	43	86%		
				Carry over to each following season	3
				Materials & Fabrication repetition	1
				Repeat from Goal	1

4.2.7 Data Integration

This was the final stage where both quantitative and qualitative data were integrated into either a coherent whole or two separate sets (i.e. qualitative and quantitative) of coherent wholes. With the data collected and analyzed in the above sections, a systematic integration delivered a clear view of the design process of both the postgraduates and the conceptual fashion designers. The expansion of the archetypal three-phase process has transformed into a four-phase cyclical design process model in this section.

Group I: Post-graduate Fashion and Textile design students



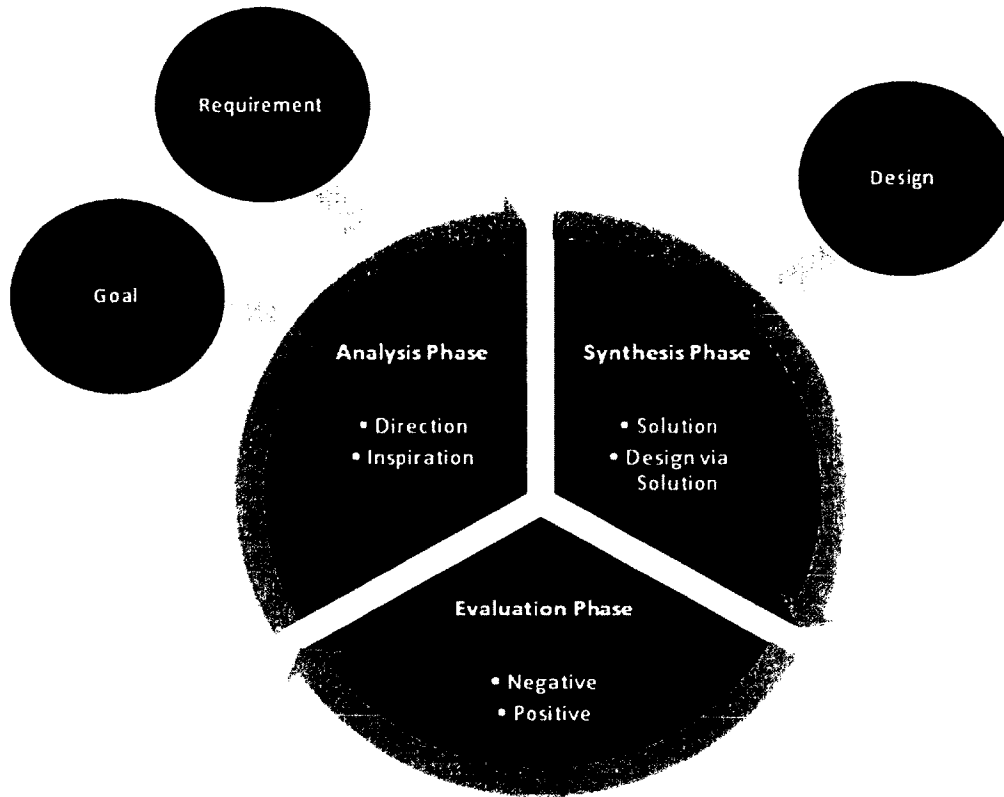
Design Phase **Design Stage** **Examples of information generated**

<p>Identification Phase</p> <p>Requirements</p>	<p>Direction</p>	<p><i>Self-satisfaction, color orientation, design modification, material orientation, production orientation, quality orientation, customer orientation, market orientation & cost orientation</i></p>
<p>Goal</p>		<p><i>Self-satisfaction, color orientation, design modification, material orientation, production orientation, quality orientation, customer orientation, market orientation & cost orientation</i></p>

Inspiration		<i>Designers' preference, lifestyle, fashion trends, social, cultural & historical, new technology, magazines and books, fashion show, brainstorming, exhibition & performance, music, past design style, photography, travel, architecture, multimedia, functional, religious & sports</i>
Written		Historical study, idea-trees
Expression		Individual attitude, emotion & feeling
Development Phase (Synthesis)	Design	<i>Silhouette, fabric texture, pattern arrangement, line balance, material composition, pattern balance, sizing & fitting, theme & mood board, structure/proportion, comfortability, environmental issue, quality, price consideration, functional, design with attention of details, usage of color, designer's attitude, emotion & feeling, shape, aesthetic & visual appeal of design, usage of material</i>
Positive		<i>Model trials, garment performance, styling/accessorize, project requirement, professors/peers evaluation, experimental outcome, repeat evaluation, alteration, perfect color arrangement, perfect silhouette, perfect materials arrangement, perfect patterns placement & perfect sizing</i>

Table 5: Information generated and the design process of post-graduate students

Group II: Conceptual fashion



designers

Design Phase	Design Stage	Examples of information generated
Investigation Phase Conceptual	Analysis/Inspiration	<i>Market research, trend analysis, customer research, competitor research, cost analysis, quality analysis, design analysis, material analysis, production analysis</i>
	Direction	<i>Design innovation, market orientation, customer orientation, cost orientation, quality orientation, design modification, material orientation & production orientation</i>
	Inspiration	<i>Culture/social/history, designers' preference, lifestyle, movie/television/music, books/journal, nature/basic, travel,</i>

color/texture, environmental protection, architecture, performance/dancing/body movement, childhood memories, visual stimulation, internet, snap-shot/photography, religious, fine art, window display, politics/news, philosophy/theory, trends & past design

	Written	Line plan, writing
	Expression	Individual attitude, emotion & feeling
Development Phase (Synthesis)	Design	<i>Silhouette, fabric texture, pattern arrangement, pattern balance, material composition, color arrangement, comfortable, sizing & fitting, shape & craftsmanship</i>
	Positive	<i>Customer/model trials, garment performance, styling/accessorize, meet brief/requirement, customer/department evaluation, experimental outcome, repeat evaluation, design details, perfect color arrangement, perfect silhouette, perfect materials arrangement, perfect patterns placement, perfect sizing</i>

Table 6: Information generated and design process of conceptual fashion designers

4.3 Conclusion

This chapter adopts Johnson and Onwuegbuzie's (2004) mixed research process model and extends it into eight distinct steps, including 1) determining the research question, 2) determining whether a mixed design is appropriate, 3) selecting the mixed-method or mixed-model research design, 4) collecting the data, 5) analyzing the data, 6) interpreting the data, 7) legitimating the data and 8) drawing conclusions. The research data were collected and analyzed using Johnson and Onwuegbuzie's model for further integration and development of the conceptual fashion design process model.

Chapter 5 Development of Conceptual Fashion Design Process Model

5.1 Introduction

In this chapter, a development of an innovative fashion collection based on the developed conceptual fashion design process model is presented. This experimental activity is meant to provide both students and designers with a valuable reference for designing a successful fashion collection in a conceptual context. The developed model of the conceptual fashion design process makes use of understanding the context of design problems, design processes and users in the conceptual design domain. The focus of the new model was on the continuous cyclical design process which could generate an incremental output. The new model was characterized by four phases of design processes: investigation, interaction, development and evaluation. Each phase is closely related, connected and interacted with each other like engineering gears. The development of a fashion collection would be displayed in a step-by-step approach. A discussion will be included for further engagement of the project.

5.2 The Four Phases of the Developed Conceptual Design Process

Based on the new conceptual design model, an innovative fashion collection was designed on the four phases of the process, including investigation, interaction, development and evaluation as shown in Figure 6.1. In the new conceptual design model, the researcher expanded the archetypal three-phase process (Analysis, Synthesis and Evaluate) to a four-phase cyclical model. The four phases of this process are further described as follows:

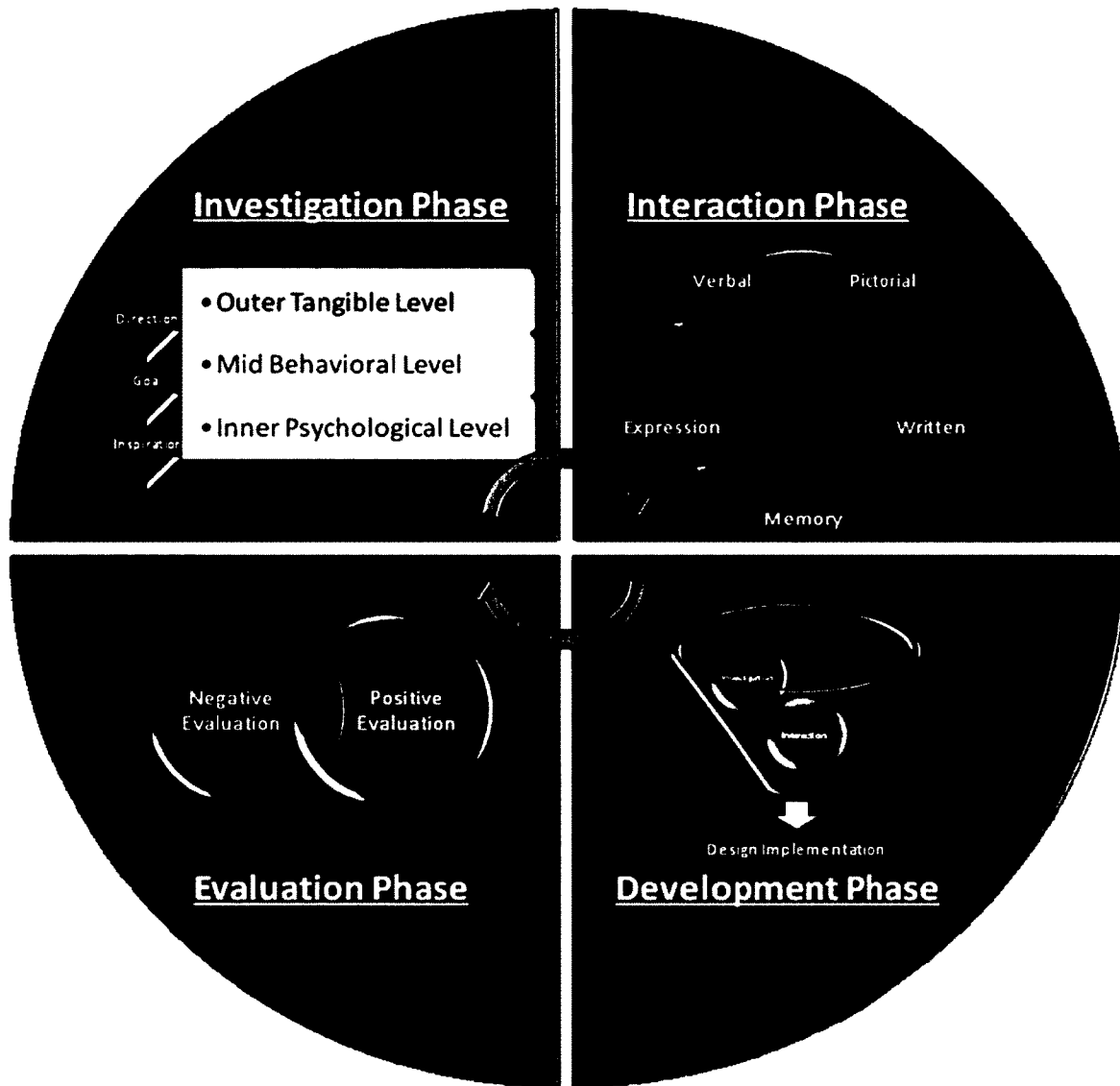


Figure 5.1: The developed conceptual fashion design process model

5.2.1 Investigation Phase

The first phase of the design process model is to find the key concept of the original objectives and to set a scenario that fits three levels: outer tangible level (direction), mid behavioral level (goal), and the inner psychological level (inspiration). Based on the selected key concept, the scenario takes into consideration the overall environment in which the

original objective is included. For example, it should include aspects of economic issues, social cultures or technological applications. In this phase, the designer seeks to analyze all the collected information in order to determine the key concept that can be applied to represent their collection.

5.2.2 Interaction Phase

This phase is the concept development and focuses on the synchronization of designers and the developed scenario from the previous phase. Designers explore all the collected information in order to synchronize their distinctive ideas and thoughts into tangible information and then to define a margin that has conceptual meaning and style derived from the original objective. Therefore, an initial imagery of the designer's thoughts or creativity should be exposed in this step for further interaction with the designing team. According to the results from the in-depth interviews, the instruments that the designers commonly used to display were pictorial (collages, theme & mood boards), written (paragraphs, poems), memories (childhood, experiences), expressions (moods, feelings), and verbal (telling stories). A solution should be proposed at the end of this phase in response to the original objective or requirement suggested.

5.2.3 Development Phase

This phase is the design realization phase. The aim of this phase is to develop a design sketch including ideas and concepts in text or graphics based on the developed scenario or concept. During this phase, the scenario or concept may require modification for transforming the conceptual ideas into a logically and technically correspondent output.

This phase also provides a means to confirm the possible design output in response to the proposed solution.

5.2.4 Evaluation Phase

This phase deals with the previously identified conceptual features and the context of the design output. At this stage, all conceptual features and deliverable messages from the designers are listed in a matrix table to help the designer and his design team to check the conceptual features applied to the design output. In addition, the designer needs to evaluate the features, meanings, aesthetics and appropriateness of the design output in response to the original objective, selected scenario and proposed solution. The designer may make changes to the design output based on the results from the evaluation, and may implement the prototype and conduct further evaluations or developments.

5.3 Model Demonstration: Development of Collection based on the Conceptual Fashion Design Process Model

Based on the developed model of the design process, the innovative fashion collection has the four featured phase discussed above. These featured phases can be independently developed and can be viewed better when they are closely related. It is not required to follow a linear design process to create the design output. Instead, a designer can start from any concrete phase and then develop ideas by considering a relationship with the rest of the phases toward a final integrated whole.

The majority of the conceptual design work reconfigures the existing design problems or ideas within the designers' pool of creativity. It is critical for the designers and their teams

to be aware of the most appropriate information for design (past design, past solution, market data, and emerging technologies) in order to save duplication of effort and to stimulate creative energies in the most effective areas (Wodehouse and Ion, 2010). For the above reasons, the researcher of this experiment adopted the past collection from a postgraduate master program accomplished in 2006. The objectives of this experiment were 1) to validate the new developed model of the design process in conceptual fashion design, 2) to stimulate creative energies with the developed model when engaging in conceptual design work, 3) to create an innovative collection with conceptual meaning and style derived from the original collection.

The following is a demonstration of how the developed model can be applied to conceptual fashion design.

Model Demonstration: an innovative fashion and textile collection based on bohemian culture

5.3.1 Investigation Phase

The first phase of the design process model was to find the key concept in the original objectives and set a scenario that fits three levels: outer tangible level (direction), mid behavioral level (goal), and the inner psychological level (inspiration). My original objective was to create an innovative collection with conceptual meanings and distinctive style derived from the past collection.

The past collection was about a study of bohemian culture and its influence on fashion design. Through the new developed model, the researcher went through a concept exploration to determine the key concept derived from the past design. The new concept of this innovative collection was about “the influence of boho-chic culture on conceptual fashion design”.

5.3.1.1 ***1st Level: Direction***

Fashion reflects art, history, culture, sociology, psychology and anthropology. Clothing makes a statement that projects sex, age, class, occupation, origin and personality, as well as what they are or what they want to be at a particular moment. People wear clothes to express their individuality, personality, characteristics and even messages. People sculpt themselves into different forms or structures to represent their creative minds. The fashion conceptual designers have visions and imagination that they live through their garments into the realm of garment making in order to deliver their messages and views.

5.3.1.2 ***2nd Level: Goal***

5.3.1.2.1 ***Goal Determination***

Each generation encounters several social icons. These icons represent the distinctiveness of an era. They are a symbol and also used as a projection of one’s personality. This study was initially inspired by homeless people living on the street and their messy arrangement of clothing. Their odd appearances were used in an in-depth study on the counter-culture bohemian icon and the context of its culture. The investigation of bohemian culture synthesized the similarity with the researcher’s background. The uncertainty of social status

and cultural background, the instability of lifestyle and the characteristic of freedom was mixed into a distinct statement and displayed in their appearances.

Therefore, the researcher's goal was to design an innovative collection which not only had conceptual meaning and distinctive style derived from bohemian culture, but was also a witness to a self-determination progress.

5.3.1.2.2 Design Knowledge

OVERVIEW OF BOHEMIANISM

Technically, a bohemian is a person hailing from the provinces of the Czech Republic. Yet the bohemian identity is not created in such specific terms. Rather, it is a collection of daily happenings which are observed and learned from. The idea of Bohemianism emerges from different beliefs and experiences. Bohemia is a region of the Czech Republic, yet the the nomadic gypsies are also called "bohemian" by the French.

By the mid-1800s, however, French authors such as George Sand and Honore de Balzac started to use the word 'bohemian' in a very different sense. The 1932 *Dictionnaire de l'Academie Francaise* describes this new meaning this way:

"One who lives a vagabond, unregimented life without assured a resource, who does not worry about tomorrow"(Easton, 1964, p.1803).

Although the word was used in this sense since the beginning of the 19th century, not until Murger's play *La Vie de Boheme* did everyone come to understand the word's new meaning.

“Bohemia is a stage in artistic life; it is the preface to the Academy, the Hotel Dieu, or the Morgue. Today, as of old, every man who enters on an artistic career, without any other means of livelihood than his art itself, will be forced to walk in the paths of Bohemia”
(Janson, 1999, p.18-20).

The Culture of Bohemian

The bohemians felt the need to express and assert themselves at a social and economic disadvantage. It was almost as if they flaunted their marginality by practicing an alternative and contrasting lifestyle – bohemians undermine the bourgeois.



Figure 5.2: Bohemian culture

Bohemian Fashion

The bohemians devoted a lot of time to undermining mainstream culture and they showed their defiance through dress and manners. Bohemian fashion is something of a contradiction in terms because the bohemians usually dressed themselves in whatever they could scrounge up.



Figure 5.3: Bohemian fashion

Bohemian fashion is always counterculture but may be adopted by mainstream society over time. A classic example is the bad -boy image of Jackson Pollock. His bad -boy artist attire was rebellious, part cowboy, part thug. Now his taut but casual look could inspire a jeans advertisement.



Figure 5.4: Jackson Pollock

The Primitifs, a group of late eighteenth-century artists, ran around Paris in togas and Phrygian robes and outfits they would see on ancient Greek vases. Naturally, empire waists and classical Greek styles became all the rage a few years later.

Bohemian clothing may be anachronistic, distressed, paint streaked, serendipitous, inappropriate for the gender, smocked, embroidered, frayed, fringed, trimmed, shrunken, mismatched, vintage, militaristic, borrowed, custom-made, altered, theatrical, ethnic, folksy, wrinkled, unwashed or new, but it will always be “strangely stylish” (Stover, 2004, p.124).

There is no limit to Bohemian ingenuity. Clothing may be dyed, sleeves and collars may be removed or added, and coat linings may be worn as outerwear with a few alterations.

Patches, appliqués and fringe may get tacked on, out-of-style accessories may be revived – anything can happen.

Kiki de Montparnasse, the famous Parisian bohemian muse, once cut two Schiaparelli dresses in half lengthwise and sewed the mismatched pieces together. She is also known to have pinned a bit of red dress fabric at the collar of a coat and gone naked underneath. The bohemians are famous, notorious even, for shedding clothing for artistic or mirthful reasons.

Contemporary fashion designers often troll the bohemian underworld to glean original ideas, then interpret and sanitize bohemian innovation for the catwalk.

Bohemianism Evaluation: Bohemia Counter-Culture movement

Counter-culture movements are an important factor for historical change, and they are usually catalysts for the revolution. Basically every counter-culture movement in history follows a certain cycle. Beginning to turn the revolutionary movement becomes *chic*, and some members of the dominant culture may even descend into the counter-culture voluntarily, creating a second generation of the movement. This was the case with the bohemians of 19th century Paris as it was with the Hippies of 1960's America.

1st Generation: 1820's, 30's, 40's

Bohemia first began with Henry Murger, often considered the first bohemian. Murger passed up the opportunity for a stable lifestyle and job in order to pursue a career in the fine arts.¹ However; he persisted with it until a friend finally convinced him that he really was not good enough to be successful. So he turned to literature and dove head-on into the

life that would later be dubbed “bohemian”. Murger put his bohemian experiences down on paper to create his seminal work – *Scenes de la Boheme*. Murger began associating with a group of friends who would later become the characters of his definitive work, *Schens de la Vie Boheme*, and the group called itself “The Water Drinkers”² because that was all they could afford. Murger and his ‘Water Drinkers’ friends in the 1st bohemian café - Café Momus, began the formation of Bohemianism.

Scenes de la Boheme: 1848

Scenes de la Boheme was not Murger’s 1st installment work of being a Bohemian. The turning point of Murger’s career came when a journal called the *Corsaire-Setan* agreed to publish some of his short sketches. Some of these sketches were about bohemian life, but it wasn’t until the 4th installment that Murger used that now famous work, *Scenes de la Boheme*.

It is important to note that he was not the first to use the ‘Boheme’ term, only the first to popularize it. He published 2-dozen episodes based on his bohemian life, but the most popularized work was not published until 1849. It was a musical play and the published collection of the tales in 1831. The success of *Scenes de la Boheme* had sparked the mainstream culture interested in the term ‘Bohemia’. When the bohemian movement came to be known by a wider public, many people found it mysterious and intriguing and willingly descended into its ranks.

2nd Generation: 1850's, 60's, 70's

One member of 2nd generation bohemia was Paul Verlaine (1844 – 1896), a poet who embraced the bohemian lifestyle heartily, and it caused many tragedies in his life. Heavily addicted to absinthe, Verlaine spent much time in the hospital or the tavern. Though Verlaine's poetry has become a respected part of the literary canon, he is an example of how bohemia began to degrade in later years. The group which had made up the original 'Water Drinkers' was breaking up, many members were either dead or "like Murger, has forced his way into the larger world of journalism and the theatre."



Figure 5.5: Paul Verlaine

Bohemia as a whole ended in 1914, with the onset of World War I. Such carefree lifestyle was intolerable with France and neighborhood countries begin thrown into a flurry of war campaigns. People left art and music behind to get serious and to fight for their country.

La Boheme Opera: 1896

Representations of Bohemia continued to evolve with Giacomo Puccini's opera, *La Boheme*, one of the most important operas in musical history. The opera was first performed at the Teatro Regio in Turin, Italy, on February 1st, 1896. This version of bohemian life was based both on Murger's original novel and the musical play.



Figure 5.6: La Boheme Opera

London: 1900's

The bohemian movement encountered London's mainstream culture.

Beat Culture: 1950's America

The Beat movement originated in New York City in the 1950's.⁷ It was a literary movement which emulated many of the morals of the 19th century Bohemianism.

Beat writers wrote against the mainstream, using their art as both an escape from their world and a suggested solution to what they believed ailed it. Drug usage, sexual freedom, and a wandering lifestyle all characterized the beats, as well as the reason why the majority culture rejected them in the beginning. Nevertheless, the beat writers had changed the face of American poetry and prose, ushering in a new style of writing and different way of seeing the world.



Figure 5.7: The beat generation

Hippie Culture: 1960's

Just as bohemians used art and writing, hippies used their distinct music to rebel against authority and define a whole generation. Bohemians and hippies shared many common traits, including a rejection of the comfortable, bourgeois lifestyle, a need to rebel, a lack of purpose in their lives, and a distinct fashion that mocked the mainstream culture.

Nowadays Bohemian Style: Boho-chic

Nowadays bohemian is the term used to describe free-thinking and free living people. Although the distinct style of bohemian fashion may be adopted by mainstream society, it always conjured up a decidedly downtown image. Today, the term paired with rather unexpected one defines a pervasive, yet upscale, trend in modern fashion – chic.

The influences of BoHo-Chic

“We are seeing the influences of Bohemian Chic on all the runways and in the entire top magazines,” attested Linda DeFranco (2005), women’s wear trend forecaster. “It’s a global yet earthy look, and it’s certainly more refined than anything we’ve seen in recent years” (Linda DeFranco, 2005)

Not only contemporary fashion designers interpret and sanitize bohemian innovation for the catwalk, the popular celebrities such as pop songs singers and young actresses also adopted this stylish bohemian look. The British singers Joss Stone and Rachel Stevens were both held up as exemplars of boho-chic.

Bohemian Roots

Although boho-chic in the early years of the 21st century represented a definite style, it was not a “movement”.⁹ Most of its components had drifted in and out of fashion since the peak of the hippie movement in the late 1960s. In the first half of the 20th century, aspects of bohemian fashion were a reflection of the lifestyle itself. The gypsy look was a recurring theme, popularized by Dorothy (Dorelia) McNeil (1881-1969), whose full skirts and bright colors gave rise to the so-called “Dorelia look”.¹⁰ Short bobbed hair was often a bohemian trait, having originated in Paris and been adopted by students at the Slade School of Art, several years before actresses such as Colleen Moore and Louise Brooks became associated with it in the mid 1920s.

Trousers for women, sometimes worn mannishly as an expression of sexuality became popular in the 1920s and 30s, as what many years later would sometimes be referred to as shabby chic.

5.3.1.3 *3rd Level: Inspiration*

The researcher was inspired by the case studies on contemporary fashion designers and celebrities, such as Anna Sui and Sienna Miller, who are icons of bohemian culture and boho-chic fashion.

Bohemian Inspired Fashion Designers – Anna Sui

Anna Sui’s designs mix styles with time periods. She is influenced by many sources, including classic Chanel suits, Haight-Ashbury hippie chic and glam rock of the 1970s. She explained her style in an interview, “My designs are a combination of nostalgia and

trendiness and rock n roll and flea markets and fantasy and dress-up. I'm a product of American pop culture, and my designs really show that" (Sui, 2006, style.com)



Figure 5.8: Anna Sui's bohemian inspired fashion collection

Sui is a fanatical researcher with an insatiable desire to learn. She draws inspiration from art exhibits, films, flea markets, museums, music and street fashion. She does not simply pluck ideas from the past or another culture, but instead pulls together themes from many sources and seeks to relate them to what people are currently experiencing.

Sui wants to express herself through her designs without rules or restrictions. Like all bohemians, she believes in free-thinking and free living style.

Bohemian Inspired Celebrity – Sienna Miller

Sienna Miller is the actress who is noted for her fashion sense and often ranks highly in “best dressed” lists. She is particularly credited for popularizing *boho-chic*.



Figure 5.9: Bohemian inspired celebrity, Sienna Miller

Sienna likes to mix designer wear with second-hand vintage wear. Miller made headlines with her clever combination of vintage and designer chic. Her trendy boho-chic style landed her a contract with top Swedish fashion label “JC jeans And Clothes”. Sienna was the obvious choice after she was voted the world’s classiest woman by Vogue magazine. She has single-handedly defined the Boho-chic movement and become a style icon.

5.3.2 Interaction Phase

The second phase of the design process model was to develop a concept related to both the designer and his design knowledge. In this process, the designer gained in-depth knowledge in relation to the scenario and at the same time was able to relate this knowledge to design problems or requirements. Then the designer was able to appreciate the interaction between the designer's direction, goal and inspiration.

The researcher chose to display the collection in the form of pictorial presentation. The theme and mood boards were displayed for the reasons explained above (Figures 6.1 and 6.2). A solution was proposed at the end of this phase in response to the original objective or requirement suggested.

5.3.2.1 Synchronization Process

Theme board suggested the stories or concepts that the designer wanted to express in the collection. The researcher decided to tell her childhood, her growth of teenage years, her life adventures and dreams she wanted to pursue in a story-telling collage artwork. The researcher's interests and imagination were flooding in the theme board, reflected her spirit of freedom. Colorful content of the theme board also mirrored the researcher's impression to Bohemian culture and lifestyle.



Figure 5.10: Theme Board

Mood board represented a blueprint to both the designer and the design team in the initial stage of design process. According to the research findings, both students and designers suggested that collages or patchworks of their collected images, fabric swatches, and photos can mostly translate their concepts to others.

The researcher has input the stories of inspiration, coloration and silhouette into the mood board. Viewers should have a greater understanding to the collection in this stage of design process. Not only pictorial images were displayed, the collection also described by written words as follows:

Inspiration

The collection was initially inspired by homeless people living on the street and their messy arrangement of clothing. Their odd appearances were used in an in-depth study on the counter-culture Bohemia icon and the context of its culture. The investigation of Bohemian culture synthesized the similarity with the researcher's background.

Coloration

Rainbow color was adopted in the collection to reflect the carefree, happiness and freedom impression of Bohemian culture. The researcher wanted to project the lighter heartedness of her own characteristic in the collection as well.

Silhouette

Long and maxi hemline and layered were also inspired by Bohemian culture. Homelessness allowed the Bohemian carried their valuables with them all the time, therefore, stacks of layering became a distinctive style of the significant style.



Figure 5.11: Mood Board

5.3.3 Development Phase

The third stage of the design process was to develop design sketches including ideas, materials, fabrication, coloration in text and graphics based on the developed concept. Figures 6.3 and 6.4 show the sketches of the design implementation process by the researcher.

5.3.3.1 *Design Implementation*



Figures 5.12 and 5.13: Initial sketches 1

The initial designs were illustrated in rough pencil sketching in order to let the designer have a pictorial idea of silhouette, shapes, formations and details of garments, model postures and color arrangement. The designer had some minor evaluations in this stage of

the process. It was a repeated correction when the designer transformed intangible ideas into tangible sketches.

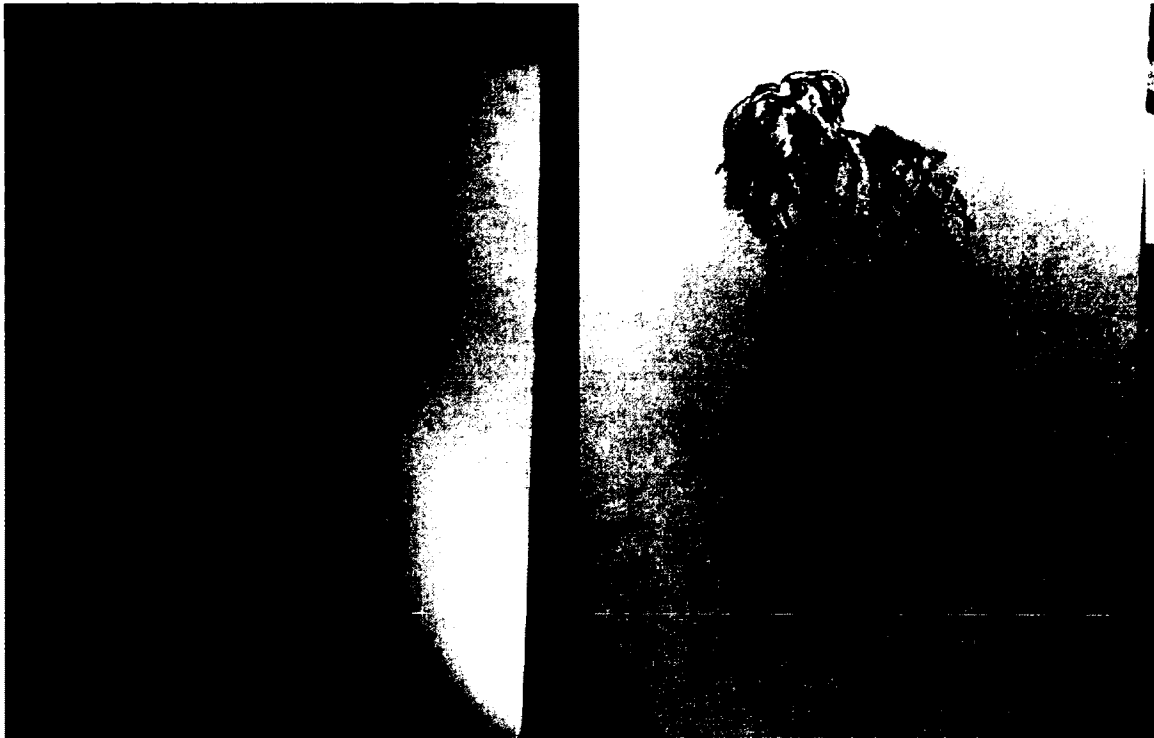


Figure 5.14 and 5.15: Initial sketches 2

After confirming the forms, shapes, postures and silhouette of the design, the designer tried out different color arrangements. Inspired by bohemian culture, the designer wanted a colorful collection because colors can reflect one's characteristics and also affect one's moods. The designer wanted to project the lightheartedness of bohemian culture and the designer's pursuit of freedom and happiness.

The maxi hemline and layered designs were also inspired by bohemian culture. Homelessness allowed the bohemians carry their valuables with them all the time and the stacks of layering became a distinctive style of their culture.



Figures 5.16 and 5.17: Initial sketches 3

Possible design outputs were displayed in sketches. The designer noticed that the repetition of correction and evaluation became less in the later part of sketching. The designer had a greater sense of direction and was confident about the composition of her designs. She also realized the evaluation looped intangibly in her mind and evaluated her designs based on a psychological preference in this stage.

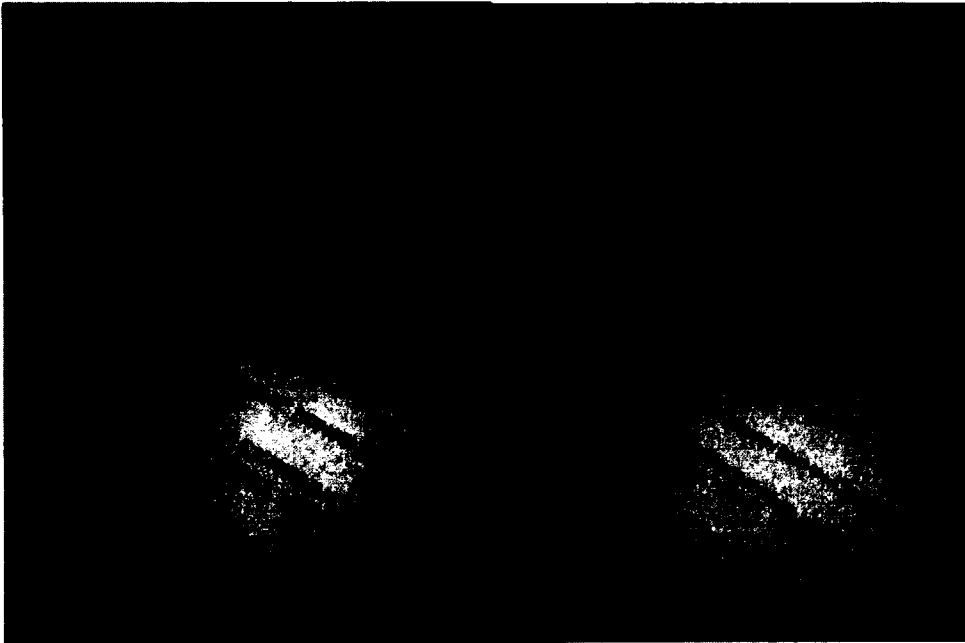
5.3.4 Evaluation Phase

At this stage, all conceptual features and deliverable messages from the designer should be listed in a matrix table to help the designer and the design team to check the conceptual features applied to the design output. In addition, the designer needed to evaluate the

features, meanings, aesthetics and appropriateness of the design output in response to the original objective, selected scenario and proposed solution. The designer might make changes to the design output based on the results from the evaluation, and implement the prototype and conduct further evaluations or developments. Appendix III show the checklist matrix tables for the evaluation process.

5.3.4.1 *Positive Evaluation*

The researcher used the checklist matrix for evaluation in sequential order. The first checklist summarized the whole concept and scenario of the collection for the designer. The designer could systematically check and write down explanatory notes on the checklist before the evaluation began. The second checklist served as a final inspection before the implementation of design prototypes. This stage involved revolving processes between negative and positive evaluation since the designer might make changes or corrections to the design output based on the results from this evaluation. Consequently, the designer implemented a positive design output or a design prototype and conducted further evaluations.



Figures 5.18 and 5.19: Researcher's 1st cycle of evaluation with 1st checklist

The researcher used the first checklist to summarize the whole concept of the collection before evaluation began. The researcher found that summarizing in written form recalled the initial thoughts and concepts of the collection. The researcher also note that by reconstructing the conceptual framework of the collection added confirmation to both designer and his/her collection.

With the list of written checklists, the researcher made changes and added details to the collection step by step. The researcher experienced the revolving evaluation process in this stage since she filled in the checklist forms and went thought the evaluation process twice in order to fulfill her self-satisfaction about the design output.

5.3.4.2 *Negative Evaluation*

The next step was to evaluate the design output with the checklist simultaneously. Unlike the first checklist, the designer need not write down ideas and thoughts before evaluation. Instead, the designer used the second checklist to examine the qualification of the design outputs before implementation.

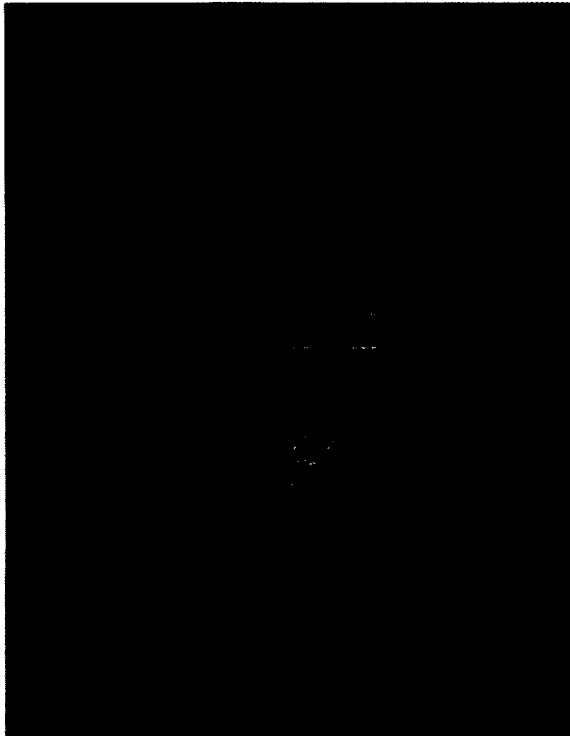


Figure 5.20: Researcher's 2nd cycle of evaluation with 2nd checklist

The researcher used the second checklist to evaluate the qualification of design outputs after the first round of evaluation. The researcher experienced another cycle of evaluation before the final output was confirmed.

5.4 Innovative Fashion and Textile Collection based on the Developed Conceptual Fashion Design Process Model

A collection of six design outputs is presented in this section. The collection was introduced in a “story-telling” mode to serve the designer’s goal - an innovative design not only had conceptual meaning and distinctive style derived from bohemian culture, but was also a witness to a self-determination progress. The design collection was divided into three phases to represent the growing stages and background of the designer.

5.4.1 The immature stage

The design features were derived from the outer level of bohemian culture with material, color, form, texture, surface, pattern, decoration and details. The outer level features were illustrated by chaotic and disorganized decorations, which were based on the pattern of floral, checks, lines and dots (Figure 6.4).

“Bohemian clothing may be anachronistic, distressed, paint streaked, serendipitous, inappropriate for the gender, smocked, embroidered, frayed, fringed, trimmed, shrunken, mismatched, vintage, militaristic, borrowed, custom-made, altered, theatrical, ethnic, folksy, wrinkled, unwashed or new, but it will always be strangely stylish.” [4]

These chaotic pattern compositions of symbolic meanings could be used as design elements and transferred to innovative textiles.

Childhood memories were similar to a collage of swatches. Pieces of memories were combined together like a multi-patchwork of fabric. The designer transformed the proposed

concept through garment materials and taking sculpture into the realm of garment. Figures 6.4 and 6.5 show the two design outputs in the immature stage of the collection.



Figures 5.21 and 5.22: Design outputs from the immature stage

5.4.2 The pre-mature stage

The mid level of design features focused on bohemian behavior and the scenarios in which the designer adopted bohemian culture on different occasions in teens. It was noted that bohemian lifestyle was confusing but self-satisfactory. The patchwork of music, artworks, movies, poems, sculptures reflected a bohemian's everyday lifestyle and culture.

“Bohemians felt the need to express and assert themselves at a social and economic disadvantage. It was almost as if they flaunted their marginality by practicing an alternative and contrasting lifestyle - bohemians undermined the bourgeois.” [4]

The designer associated the free bohemian style with her teens and created the two design outputs in the premature stage of the collection. (Figures 6.6 and 6.7)



Figures 5.23 and 5.24: Design outputs from the premature stage

5.4.3 The mature stage

This stage was derived from the inner level of bohemian stories and history, and focused on the symbolic qualities and their influence on the past century. The designer transformed the revolution of herself, from the childhood memories in Hong Kong, the growth of teenage

years in Vancouver to the present life adventures in Asia, all translate into the conceptual design collection presented in this study. The present life adventures and experiments in Aisa of the researcher have conceptualized into the third stage of the collection. Silhouette and textile compositions became less confusing, which indicated an interface of growth. Figures 6.4 and 6.5 show the two design outputs in the immature stage of the collection

“Counter-culture movements are an important factor for historical change, and they are usually catalysts for that revolution. Basically every counter-culture movement in history follows a certain cycle. Beginning to turn the revolutionary movement becomes *chic*, and some members of the dominant culture may even descend into the counter-culture voluntarily, creating a second generation of the movement. This was the case with the bohemians of 19th century Paris as it was with the Hippies of 1960’s America, and so on.”



Figures 5.25 and 5.26: Design outputs from the mature stage

5.5 Conclusion

The bohemian collection provided good examples of conceptual features for design, and yet retained the basic bohemian values. This chapter demonstrates the conceptual features of both bohemian culture and the designer's background at the four phases of the design process, including investigation, interaction, development and evaluation. The demonstration shows how these distinguishing features were transformed into a new conceptual design collection.

Chapter 6 Conclusion

6.1 Introduction

This study had documented and tracked the emergence and development of conceptual fashion design. Against the extent literature background, this study aimed to 1) explore the identification of the conceptual fashion design and its creative system, 2) develop a theoretical framework of design process that presents a series of creative actions in conceptual fashion design context and 3) develop a model of design process that is generic to conceptual fashion design, by rationally integrating professional knowledge from different design domain into a systematic model. A mixed methods research design with exploratory sequential data analysis approach was used to further ascertain the practical value and the effectiveness of the proposed model, which is generic to the conceptual fashion designer in Hong Kong. Finally, a fashion collection was designed base on the developed model of design process in conceptual fashion design.

6.2 Conclusion about the research objectives

Although some of the research findings supported the research conclusion from existing literature, but it was an initial study carried out a theoretical framework and developed a model of design process that is inclusively to conceptual fashion design. The contributions of this study raised from the findings were 1) demystified the identification of conceptual fashion design and its creative system, 2) the formation of theoretical framework of design process in conceptual fashion, and 3) the developments of model of design process that is

generic to conceptual fashion design, by rationally integrated professional knowledge from different design domain into a systematic model.

6.2.1 The identification of conceptual fashion design and its creative system

The worlds of fashion and textile design have become increasingly close and reliant on one another. Today's fabrics, because of the way they are produced and the applications they are designed for, allow designers greater freedom to explore issues other than simply the conventions of silhouette and style. Fashion designers understand that the future of their profession lies to a great extent in the selection of fabrics. Advanced textile technology has yielded new aesthetics, tactile qualities and performance capabilities. Traditional crafts such as knitting, weaving, embroidery and intricate hand detailing are employed alongside sophisticated new treatments. High technology coatings, laser-cutting and the latest microfiber fabrics, shape memory alloys and technical clothes are all being appropriated from industrial applications. Against this background, textile's engagement with innovative fashion design is surprising and yet the hybrid forms that result are revolutionary. Not only the subject of fashion design and textile design has become more diverse, collaborative, and interdisciplinary, some high-end designers are further react against the commercial focus of contemporary fashion, moving away from the traditional fashion cycle, seasonal restrictions, and market-led processes towards a more conceptual, experimental, and process-driven approach. The work of designers such as Alexandar McQueen, Hussein Chalayan, Rei Kawakubo, Martin Margiela, Issey Miyake, Junya Watanabe and Vitor & Rolf have adopted a conceptual approach, and have shown their work within galleries, non-

traditional and emergent fashion spaces. They utilize a range of media and processes to communicate their ideas and continually extend their methodologies.

There were limited literature and systematic models which describe the conceptual design process can be found in both academic and industrial fields. The significant models of design process in fashion and textile design were adopted from the fields of architecture design, industrial product design and engineer design. The process archetype continuously expanding framework from short mnemonic devices, such as the 4Ds (define, design, develop, deploy), to elaborate schemes, such as Archer's 9-phase, "systematic methods for designers" facilitates the understanding of design process.

6.2.2 Theoretical framework of design process in conceptual fashion design

The existing models of creative process in other design disciplines tend to illustrate the diversity of the process and provide a broad description of the design process, but no specific framework has been proposed for conceptual fashion design.

It has been established from the consideration of the models studied that three primary cognitive processes are accessed: analysis, synthesis, evaluation. The "Analysis" phase produces the "Requirement, Goal, Direction and Inspiration" as the output of investigating and clarifying the key design issues and problems involved in attaining the goal in the task situation. This output then provides input for the "Synthesis" phase. The "Synthesis" phase processes the "Solution and Design" as output, but there is a continuous "Artwork and Prototype" cyclic process before "Solution" generates into "Design" and the "Evaluation" phase can produce an 'Outcome'.

The 'Solution and Design' output is depicted as the input to the "Evaluation" phase. An evaluation is negative if the proposed solution conflicts or is inconsistent with a design requirement creating sub-problems or new problems. If the proposed solution is confirmed as consistent with a design requirement, the result of the evaluation is considered positive and will lead to the "Outcome" of the process. However, a negative outcome indicates that further work on the proposed solution is required.

6.2.3 Model of design process in conceptual fashion design and information generated from each stage

Based on the developed conceptual design model, the conceptual fashion collection is designed in a four phases of process, included investigation, interaction, development, and evaluation. The four phase of this conceptual fashion design process are further described as follows:

6.2.3.1 *Investigation Phase*

The first phase in the design process model is to find the key concept in the original objectives and to set a scenario that fitted the three levels: outer tangible level (direction), mid behavioral level (goal), and the inner psychological level (inspiration). Based on the selected key concept, the scenario should take into consideration the overall environment in which the original objective is included, for example, it should be included aspects of economic issues, social culture, or technological applications. In this phase, the designer was seeking to analyze all the information they collected, in order to determine the key concept that can be applied to represent their collection.

6.2.3.2 *Interaction Phase*

This phase was the concept development and it focused on the synchronization of designers and the developed scenario from last phase. Designers were focused to explore all the information they collected, in order to synchronize their distinctive ideas and thoughts into the tangible information. And then to define a margin that has conceptual meaning and style derived from the original objective. Therefore, an initial imagery of designer's thoughts or creativity should be exposed in this step for further interaction with the design team. According to the results from the in-depth interviews, the instruments that designers commonly used to display were in the form of pictorial (collages, theme & mood boards), written (paragraphs, poems), memory (childhood, experiences), expression (moods, feelings), and verbal (telling stories). A solution should be proposed in the end of this phase, in response to the original objective or requirement suggested.

6.2.3.3 *Development Phase*

This phase is the design realization phase. The aim of this phase is to develop a design sketch included ideas and concepts in text and pictograph form based on the developed scenario and concept. During this phase, the scenario or concept might require modification for the reason of transforming the conceptual ideas into a logically and technically correspondent output. This phase also provided a means to confirm the possible design output is in response to the proposed solution.

6.2.3.4 Evaluation Phase

This phase is dealing with the previously identified conceptual features and the context of the design output. At this stage, all conceptual features and deliverable messages from designers should be listed in a matrix table, as a way to help the designer and design team to check the conceptual features being applied in the design output. In addition, the designer needed to evaluate the features, meaning, and aesthetic, appropriateness of the design output in response to the original objective, selected scenario and proposed solution. The designer may make changes to the design output based on the results from the evaluation, and may implement the prototype and conduct further evaluations or developments.

6.3 Limitations of the Study

The limitations of this research study are as follows:

- 1) The use of in-depth interviews as a method of data collection could possibly encouraged the subjects to express certain feelings and perceptions unconsciously, which might produce limitations to the findings of the study.
- 2) Because the on-site observations were pre-planned and prior notifications were given to the interviewees, the phenomena that the researcher intended to observe might be distorted by the presence of a non-participating observer.
- 3) Because the researcher used to be a fashion designer, her past experiences could pose limitations to this study and personal biases might set in.

6.4 Conclusion

We have proposed a theoretical framework to explicitly represent analysis, synthesis and evaluation outcomes and their interactions to conceptual fashion design. We have emphasised the importance of the notion of an evaluation outcome, which is not simply the term 'negative' or 'positive'. Rather it is a relation between *synthesis* and *evaluation*, expressing whether and, why the proposed solution or design is good or bad. We have sought and found evidence in designers' interviews for the productions and relations posited in the model. Results show that the explicit consideration of designers' goals definitely generated solutions to tasks. Likewise, the important role of evaluation outcomes indicates a clear cyclical model for conceptual fashion design. Therefore, it is reasonable to conclude from the above evidence that designer's goals (analysis), solutions (synthesis) and outcomes (evaluate) feature prominently in the design process of conceptual fashion design.

6.5 Implications for further research

The importance of the role of designers' goal, their solution and evaluation outcomes are shown clearly in the result of the study. But these facts are difficult to be weighed, balanced and integrated in the design process. The study reported here can contribute little in addressing to the above.

The researcher also noted that the developed model of design process and the factors generated from each stage may vary between different target groups. Future research

needed to be undertaken in order to improve the refinement of the constructs of design process model according to different study groups.

Future research should focus on understanding the integration of each stage and how they utilise in the process of conceptual fashion design. Results should be supported by quantitative data to further ascertain the practical value and the effectiveness of the proposed model.

Appendices

Appendix Ia Open-ended Interview Questions for all Interviewees
Title of Paper "A Development of Design Process Model in Conceptual Fashion Design"
Name of Authors Ms. Yuhan AU, Dr. Joe S. AU, Prof. Raymond W. AU

Section A – Profile Details (FULL-TIME / PART-TIME/ TEMP. EMPLOYED)

Please provide the information listed below:

Name (English)

(Surname)

(Given Names)

Name (Chinese)

(Surname)

(Given Names)

Title Mr/Ms/Miss/Others* _____

Company Name: _____

Job Position _____

Department _____

Telephone No.

(Company)

(Mobile)

(Fax)

Correspondence Address _____

Work experience in the related industry _____ year(s)

Total number of employees in your company

1-30

31-50

51-100

100-500

>500

Before answering this questionnaire, have you received any invitations to participate in similar questionnaire surveys?

Yes

No

Section B Qualitative Research Questions – To be completed by ALL respondents

Knowledge sharing here focuses on the reciprocal exchange of knowledge or experience among practitioners on a friendly and casual basis.

1) How do you tackle a new design concept? Please briefly introduce your design process.

2) How do you define the phenomena of creating new fashion and determine the needs of creating new collections? (i.e. requirements or prerequisites).

3) Is there a “goal(s)” that you design to achieve for each project or collection?

4) What is the next step after the goal is settled? How do you set up a direction for your project or collection?

5) Where do your design concepts come from? Would you please list the sources and factors that inspire your design ideas?

6) What are the methods that you use to generate ideas? What are the general design criteria?

7) What are the essential or important elements to be heeded during design?

8) How do you select a “qualified” design to new collections? Is there a list of rules when you select a new design? If yes, please provide some ideas of the design rules.

9) What do you need to consider after the design selection? How do you evaluate the design before the final outcome? (i.e. cyclical process)

10) Is an outcome the final stage of the design process? Will the outcome become the inspiration or solution to the next project or collection?

Appendix IIa Group I: The checklist matrix for post-graduate students group
 Title of paper "A development of design process model in conceptual fashion design"
 Name of authors Ms. Yuhan AU, Dr. Joe S. AU, Prof. Raymond W. AU

	1	2	3	4	5
Q2	"School project."	"Assignment brief."	"Final school project."	"I will design a new collection based on my familiar area or self-interest."	"Graduation project requirement."
Q4	"Gothic"; "free-style."	"Happy"; "fun"; "excited"; "fulfill self-needs."	"Knits only"; "I will put all trendy elements to my collection"; "although I want my collection to be trendy, I will try to design something different for them."	"I want to set up a portfolio for gay fashion"; "I want to be a freelance designer for gay fashion."	"My theme is fairy tales, coz it's the trend of this moment."
Q6	"Used to put all ideas in a sketch book"	"I stick all my research stuff (ie. swatches, pictures, photos, newspaper) to the wall."	"Concentrate on knitting technology"; "I will try to knit some strong silhouette, instead of soft."	"I memorize everything. I just need to generate it on sketching paper"; "I don't need a sketch book. My head is a sketch book."	"Pay a lot of attention to fabric usage"; "organic fabrics"; "comfort, healthy, recycle, environment friendly are the elements parents are most concerned about"
Q8	"Aesthetic"; "only 4 out of 6 were chosen according to the brief."	"Before my own evaluation, I will ask my professor's opinions."	"Exaggeration is the thing I'm looking for"; "eye-catching."	"Self-satisfaction."	"Real model testing"; "record their level of satisfaction."

Q10	"Definitely, it is surely a repeat process."	"I will prolong my design to the next collection."	"End of this project only"; "the next project starts afresh."	"Always an inspiration to the next collection."	"The time constraint is the problem of design, but I can't improve the situation until the next project."
Q1	Goal, requirement, inspiration, research, sketching, drawing, design, selection, evaluation	Brief, inspiration, research, sketching, design, elimination, technology, prototype, evaluation	Requirement, goal, inspiration, research, gather ideas, sketching, design, production, elimination, evaluation	Goal, inspiration, project requirement, research, sketching, drawing, design, production, printing prototype, evaluation, design	Brief, inspiration, research, design, prototype, evaluation, repeat
Q3	"I love knits so I think it will be my goal to be a conceptual knitwear designer."	"I want to keep my designs as simple as possible."	"I involve mathematics in my designs"; "my goal is to mix illustrated lines with fashion curves."	"I always want to deliver eye-catching designs on the catwalk"; "my goal is to create happy moments in my collection."	"Self-interest is the only goal I want to achieve in this assignment"; "this collection is only for myself."
Q5	"My concept always come from the different countries or places I travelled"; "this project is inspired by my journey to Egypt."	"I always want something different from my last collection."	"Textbooks, the internet, calculations, numbers, signs, libraries, daily life."	"Mostly from pop culture, like music, television, posters, commercial ads, art, films, magazines, fashion catwalk shows"; "everything I see on the street"; "snapshots."	"Pantone color plate"
Q7	"Comfort is the 1 st concern"; "dyes and knits are important to my design too"	"Simple lines"; "laser-cutting is something I use to match with	"I have to pay attention to silhouettes and patterns. Those are the two important elements	"Time constraints"; "need to be alert to time. I can't continue the design process endlessly"; "keep in	"Color comes 1 st , ideas, thoughts come 2 nd "; "simple lines and silhouettes. I want

		design."	when I design"; "Aesthetics is another key."	mind the theme board: tradition vs innovation."	people to see my color arrangement more than the shape of my design"
Q9	"I will try to accessorize the design before the final outcome"; "styling is also important for evaluation."	N/A	"I need to pick the exact matching placement of patterns"; "silhouette is not the 1 st concern, as a wrong placement of patterns can ruin designs."	"Surprising outcome!"; "Accessorizing my design is another evaluation process before going on the catwalk."	"Real live model fitting"

	11	12	13	14	15
Q2	"School project."	"Self-fulfillment."	"Final collection project"; "build up an interesting portfolio."	N/A	"Graduation project requirement."
Q4	"Market-orientation is my direction of all design."	"Unique and special design is my direction always."	"Out of the material and weaving technology, my design is very unique."	"Customers and market orientation"; "in this case, teachers will be my customers."	"I want to design new knit styles of high quality."

Q6	"Mostly from fashion news"; "I read lots of magazines in the resource center"; "European mainly."	"Photography"; "besides fashion, I read lots about architecture"; "travel"; "notes and poetry.."	"Disney stories"; "little mermaids"; "I want to tell stories with fashion design."	"Photography and sketching"; "memory"; "experience different cultures in different countries."	"Swatches"; "yawns research"; "material-oriented in all my designs."
Q8	"Details of knits"; "silhouette"; "according to the brief, only 4 out of 6 are chosen."	"I chose from 12 outfits, when I only needed to submit 4."	"Only qualified materials and fabrics are allowed in this collection"; "I ordered tons of special fabrics for this project"; "cost is also another thing I need to consider. I don't want to go over budget."	"There are 4 chosen out of 6 outfits"; "chose according to requirements"	N/A
Q10	N/A	"Repeat until satisfied."	"Repeat processes with fabrication"	"Gain experiences from failures."	"Try on real models for fabric movement"

	16	17	18	19	20
Q2	"Graduation project requirement."	"Build up a personal portfolio for business."	"Self-fulfillment."	N/A	"School assignment."
Q4	"Mostly design medication"; "good quality is my"	"Definitely material orientation."	"My directions are both design and quality, balance and innovation."	"Self-satisfaction."	"Design and material orientation."

	direction.”				
Q6	“Keep ideas and design as simple as possible”; “I have no sketch book. I keep every idea simple in my mind”; “I draw things right out of my mind.”	“The theme board is something I must have for my collection”; “swatches, photos, pictures, words related to my theme will form a collage on the board”	“Usually I write down every idea”; “brainstorming”; “idea-trees, then circle good ideas or thoughts.”	“Draw on walls if I can, like Michaelangelo.”	“Drawing on my note pads”; “new apps on ipad can help me write down every idea coming to my mind”; “memory.”
Q8	“I don’t want to follow trends, just want to design basic things”; “peers evaluation.”	“Patterns arrangement or placement.”	“Simple!”	“Repeat until satisfied.”	“Professors’ evaluation and advices”
Q10	“Won’t repeat in the process, but I will modify old designs.”	“Definitely repeat inspiration for the next collection.”	N/A	“Repeat endlessly.”	N/A

	21	22	23	24	25
Q2	“Graduation project requirement”	“Build up a personal portfolio for business.”	“Self-fulfillment.”	N/A	“Final collection of MA programs.”

Q4	"Design innovation."	"Design innovation"; "design modification."	"Material orientation"; "fabric usage."	"Design innovation."	"Market orientation."
Q6	"Case studies"; "performances, shows, everything with movement"; "capture moving fashion."	"I-pad drawing"; "repeated slide-shows"	N/A	"My collection will be designed like stories with openings and endings."	N/A
Q8	"My rule is according to the brief that my professor sets."	"Different from others."	"Select the one that I like."	"Peers' advices"; "tutors' evaluations."	N/A
Q10	"Yes."	"Definitely."	"Repeat until satisfied, if can't deliver this time, I will wait until the next collection."	N/A	N/A

	26	27	28	29	30
Q2	"Graduation project requirement."	"School project."	"Self-fulfillment."	"Build up a personal portfolio for business."	"Final collection of MA programs."

Q4	"Design innovation."	"Design innovation."	"Production-oriented."	"Design innovation."	"Quality orientation."
Q6	"Photographs"; "collage"; "sketching"	"Put everything into clips and produce a music video."	"Of coz the I-pad drawing app"	"Collage"; "like turning memories into themes and mood boards."	N/A
Q8	"Fabric texture"; "cutting"; "shapes and structure of outfits."	"Eye-catching"; "complete look."	"Innovative design."	"This is a repeat process. I will try outfits and accessories on dummies."	N/A
Q10	N/A	"Until the next collection."	"Cyclical process."	"Design should be endless."	"Agreed. Repeat process"

	31	32	33	34	35
Q2	"Self-fulfillment."	"School project"	"Build up a personal portfolio for business"	N/A	"The MA graduate fashion show"
Q4	"Feminine"; "very lady-like."	"I want to balance	"Innovation is the direction of my	"Design modernism"; "innovation."	"Design and art modification."

		design and material innovation.”	design.”		
Q6	“I need more unique designs to build up my portfolio”; “I used to draw all designs on one piece of paper.”	“I will put all my swatches together and make a collage”; “try to make the impression of a cellular.”	“Looking for exaggerating silhouette and shapes”; “black and silver”; “shiny and reflection in my design.”	“I will look for swatches that match the color of lava”; “long and drapy fabrics like lave movement”	“I will take photos of church glass panes”; “find material and fabric that match”; “design fabric patterns and print my own”
Q8	“I will pay attention to the silhouette and line balance of knitting”; “size and fitting are my concerns.”	“Tried many times”; “if not satisfied, I will do it again.”	“Aesthetic”; “if not qualified, I will try put on dummies or accessories”	“I will try outfits on real models, tell them to walk, run and move”; “if not enough flowing, I will think of a solution.”	N/A
Q10	“Design is always a repeat process.”	“For the remaining 8 designs, I will use it for the next collection.”	“The others I will put in my portfolio to develop my own label.”	“As I said, I will produce a solution to the obstacles.”	“I will use new ideas and designs for my next collection”; “but I always believe my personal style.”

	36	37	38	39	40
Q2	“Graduation project requirement.”	“I want to do something I like before	“Final collection project.”	“Graduation project requirement.”	“Final collection project”; “build up an interesting

		I join the fashion industry."			portfolio."
Q4	"Material and design orientation."	"Design modification."	"Totally material-orientated."	"Design innovation will be the direction of my collection."	"Cost orientation and production minimization."
Q6	"Contradictory feeling is what I'm looking for"; "long vs short"; "chucky vs simple."	"I did this topic before, but I want to improve on my old design."	"Improve on the existing design, the material not only used for the bag, but also for the clothing."	"My design is like the things that executives can see in their office"; "themes, mood and silhouette are sharp and smart like the offices in Central."	"Geometrical shapes, triangles, squares, lines"; "calculation"; "mathematics, formula."
Q8	"The technical problem is something I need to solve"; "knitting I have to redo and prints I have to reprint."	"Not so many designs wasted, since I did this before."	"Many unsuccessful designs"; "I have to resolve the hard wire problem."	"The fabric folding process is very difficult"; "lots of repeat processes, but I don't want to give up."	"The knitting technique needs to be repeated and experimented."
Q10	"I will redo all the designs that I am interested in."	"I will continue to explore this topic."	"Very interesting material. I will use it for my next collection as well."	"More experience for my next collection."	N/A

	41	42	43	44	45
Q2	"Final collection project."	"I only work on the topic I'm interested."	"Graduation project requirement."	"School project."	"Final collection project"; "build up an interesting portfolio."
Q4	"Production orientation."	"Customer orientation."	"Design innovation."	"My direction towards innovative design."	"Show my design and marketing sense."
Q6	"Many designs can be mixed and matched"; "at the same time I created lots of details, like playing puzzles."	"Loose shape"; "comfortable and loose-fitting"; "but fashion involved."	"Theme of wild animal in my design."	"Inspired by my puppy"; "bulky, fatty, cute are my themes and moods."	"Spent time on studying new materials"; "functions are the concern"; "keep young and athletic"
Q8	"Not many designs were wasted in this collection."	"4 out of 12."	"All of my designs were used in the collection."	N/A	"Fittings on real models"; "need to re-design when problems were found in fittings."

Q10	"A very funny process."	"Experiences will lead to the next design."	"I will try new styles next time."	"Continue to build up my portfolio for pet fashion."	N/A
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	46	47	48	49	50
Q2	"MA graduation project."	"Final collection project."	"School project."	"Final collection project"; "build up an interesting portfolio."	"Graduation project requirement"
Q4	"Design orientation."	"Totally material-orientated."	"Crazy ideas and thoughts are always in my design."	"Design and art modification."	"Material orientation"; "fabric usage."
Q6	"study fabric and materials to support the cocoon shape is the hardest"	"Fashion history."	"Study color palettes, want to find some color suitable for men with feminine feeling"; "female details in men's clothing."	"Cute and round"; "pastels"; "design with themes of happy and sweet."	"innovative design and exaggerated like Hollywood styles"
Q8	"It's very hard to translate thoughts into designs"; "need advices from tutors."	"Size and fit are the elemental concerns in this collection"; "picture references from fashion history."	"I will pay attention to the silhouette and line balance of knitting"; "size and fit are also my concerns."	N/A	"Very hard to match the bones on the outfit"; "soft vs hard"; "learnable experience definitely."

Q10	"Definitely a repeat process for design."	"A repeat progress goes on and on."	N/A	N/A	"Design always originates in experience and repeated experiments."

Title of paper "A development of design process model in conceptual fashion design"

Name of authors Ms. Yuhan AU, Dr. Joe S. AU, Prof. Raymond W. AU

	1	2	3	4	5
Q2	"Design brief"	"Is usually determined by customer orders."	"My own style blend with customer needs"	"According to what my customers wants"; "high quality."	"Is determined by the design brief of each meeting."
Q4	"I like to try different materials and new technology"; "I will try to fit the above to my customers"	"I want my designs innovative and satisfy my customers."	"Customer orientation."	"Design innovation and market orientation."	"Cost and market orientation"; "I wanted to fulfill market needs."
Q6	"Blend technology with brief and design"; "line plan."	"I try to keep every process simple"; "use the most direct way to tell stories with my designs."	"I will collage every piece of information on the board, including customers' needs, inspirations, pictures."	"I merchandise every piece of detail by myself"; "I wanted to design high quality yet cost-effective fashion."	"meetings with market, sales team forecast what my customers need"; "decide briefs and line plans"; "then start to design"
Q8	"Fewer mistakes made when using 3D prototype"; "used to work on materials repeatedly instead."	"My design process keeps changing and repeating. All sketches are in my mind."	"I will keep insult with my customer. Alteration and evaluation are a necessary process"; "after meetings, briefs won't change, but I will start putting things on my board again"	"Evaluation takes place after each brief, meeting of line plans, budget, forecasting, strategy, development, design, production"; "every stage changes continuously."	"I'm a trend-and-market follower"; "My design emphasizes high quality"; "so my products can sell at a good price in the market."

Q10	"Every piece of my design can be my inspiration."	"I will repeat using a material or fabric, but not a design."	"As mentioned above."	"Customers' feedback always gives me the inspiration for my next design."	"Repeat endlessly."

	6	7	8	9	10
Q2	"Usually there's a design brief section first."	"Of coz I follow the brief first. But the rest is my work."	"When I first started as a designer, I didn't care about the market"; "but no designer can keep working without getting credit"; "Now I try to balance both."	"Maybe people see this as stubbornness, but I always satisfy my needs before walking into a design brief meeting."	"A design brief with my own selection of dreams."
Q4	"Design innovation, modification and market orientation."	"Satisfy everything I mentioned before"; "that means satisfying myself!"	"Market orientation."	"Design innovation."	"Design innovation and market orientation."

Q6	"I sketch the 1 st draft, meeting with different departments, get their feedback and evaluation, then design again."	"I attend every meeting. Changes and evaluations happen every minute"; "theme and mood boards are important solutions to the assigned brief"; "it binds my endless creativity."	"Collage is my solution to my creativity"; "theme and mood boards are the solution to the budget brief."	"I stick all material and fabric swatches on the board"; "make mini-prototypes with the fabrication"; "experiments are my solution to the final design."	"Chinese culture is always the base of my inspiration pool"; "this time I was inspired by cheongsam's silhouette"; "add military details."
Q8	"if the outcome conflict with my brief, definitely regenerate from under. No question asked"	"Before the show, I will walk with the model, I believe the garment-and-model relationship"; "whatever they feel, I will put it into my design as well"; "usually repeats at the design stage."	"evaluation repeat since the inspiration had made for the specific collection"; "but usually I alter the brief as little as possible (theme and mood boards)"	"As mentioned before, my goal is to improve on the existing design. If there's problem, I will keep correcting until the design looks perfect to me"; "so my evaluation starts from the stage of goal."	"I usually don't change my solution or inspiration or brief"; "I evaluate each design before production."
Q10	"Same as above."	"Every design is a cycle."	N/A	"My design cycle starts from the stage of goal."	"Repetition starts from design."

	11	12	13	14	15
Q2	"Design brief."	"if you think your	"Usually we start a design brief	"Design what my customers want";	"Design brief."

		design is right, you must persist with your choice, believe in yourself."	meeting before line plans and development."	"high quality"	
Q4	"Definitely customer orientation."	"Design innovation and satisfaction."	"Design modification and innovation."	"Production orientation."	"My theme is fairy tales, coz they're the trend of the moment."
Q6	"My style always features Chinese culture and literature"; "I find Chinese words and calligraphy are as beautiful as a YSL smoking suit"; "I used to sketch my designs with Chinese ink."	"Textile design is one of major elements of my design"; "inspired by architecture, I use felt fabrics, bring out the characteristic of this material with innovative silhouette, like those new constructions in an old Beijing village."	"Modification of the classic cheongsam into a modern but elegant outfit"; "the contrast of the upper and lower bodies accentuates the beautiful figure of a female."	"Mixture of western history and eastern costumes"; "I still sketch my designs with pencils, like Valentino. I also correct my design on paper before any production."	"Pay a lot of attention to fabric usage"; "organic fabrics"; "comfort, health, recycling, environment friendliness are the elements parents are most concerned with"
Q8	"Model trials are my ultimate evaluation"; "keep adding and changing details until the design meet every detail on the brief."	"Every piece needs to be tried on the model in order to assess the overall look"; "alter the outfit directly in model trials."	"Each piece is special, therefore, each piece is different"; "fittings on dummies, models"; "test the movement while the models walk."	"Repeat starts after mood and theme boards are determined."	"Real model testing"; "record their level of satisfaction."

Q10	"The design process is a cycle."	"Couldn't agree more."	"Design is to a process of finding a solution non-stop."	"Save the inspiration for the next time."	"Time constraints are the problem for design, but it can always wait until the next project for improvement."
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	16	17	18	19	20
Q2	"My style blends with customer needs."	"Design briefing."	"I am a freelance conceptual designer, catering for customers' requests and needs."	"My design brief is usually determined by customer orders."	"Fulfill market needs and customer requests."
Q4	"Market, cost, customer orientation."	"Quality and design orientation are my directions."	"Design innovation, customers, material, cost and quality orientation."	"Design innovation"; "material innovation"; "market, cost, production, quality orientation."	"Market and production orientation"; "totally satisfy customer s' needs."
Q6	"Break with tradition and do something completely opposite."	"I blend what I digest from news in my design"; "Shades of daily life and culture transformation are	"My design is based on my childhood stories and fairy tales"; "avoid using traditional Chinese design elements"; "designs project trends and deliver traditional	"Supervision of design and image"; "I want to express feelings or thoughts unselfconsciously and without restraint"; "no delicate details, flowing lines and shapes."	"I deliberately make mistakes all the time"; "I choose opposite coloration, wrong pattern arrangement and different material

		featured in my collections"	messages at the same time."		composition"; "this way I can always surprise myself and my customers."
Q8	"I try not to drop the whole design. I will try to turn it into a better design that fits every criterion."	"Keep experimenting material application, pattern arrangement and color display."	"I let my children evaluate my designs"; "coz my designs are supposed to be seen through the eyes of a child"; "I want my children to understand my design too."	"My design should meet the requirements of the design brief"; "Usually we decide the theme and mood board with the marketing team"; "then come back with the design."	"I love evaluation and wrong placement of everything"; "experiment and repetition are necessary processes of my design."
Q10	"Design cycles always start from inspiration. My goal never changes."	"Design cycles only start from inspiration, Other are just led by the market or customers."	"My design never stops in my head. Just the process of sketching it on paper, briefing with my coworkers, production of prototype and final garments are"	"Modification of current designs and being best sellers are our team's goals."	"Repeat from inspiration"; "old designs are always on my inspiration board."

	21	22	23	24	25
Q2	"Usually we start a design brief meeting before line plan and development."	"Design briefs are usually determined by customer orders."	"Design brief."	"Design brief."	"Design brief."

Q4	"Design innovation and satisfaction."	"Design innovation and market orientation."	"Build awareness for my own label and design in my own style."	"I like to try different materials and new technology"; "I try to cater for my customers"	"Design modification and innovation."
Q6	"I usually use collage to form solutions to the brief"; "Put everything on the board for easy reference"; "Pictures are not only of fashion, but also almost everything surrounding me."	"I want my designs to be seen and acknowledged by more people, This way I can know my work is worthwhile and my messages can be delivered to viewers."	"I use complicated embroidery to tell my stories"; "but keep simple and basic designs in contemporary fashion."	"Sketching on my handbook is the 1 st thing I do to resolve design problems."	"When every detail is put together, it will expand and exaggerate the value of a design as a whole"; "one exaggerated element is good enough"
Q8	"I never let go of my negative designs. Instead I find solutions to refine them"; "I usually make them satisfactory to both myself and customers."	"if my design conflicts with the brief or market decision"; "I will compromise coz I see the market as a tool to attract attention and channel more messages of mine with my designs."	"Conflicts always happen between designers and their marketing teams"; "communication and understanding are needed before the final outcome and production."	N/A	"Never let go."

Q10	"Designs recycle in my mind."	"Agreed."	"Design always repeat. The process starts from inspiration."	"Repetition only makes one's style stronger."	"Repeat from solutions."

	26	27	28	29	30
Q2	"Design brief."	"Design briefing."	"The design brief is usually determined by customer orders."	"Usually we start a design brief meeting before line plan and development."	"The design brief is usually determined by customer orders."
Q4	"Simplicity is my direction after I set my goal in this project"; "keep design block and solid color."	N/A	N/A	"Apart from the material and weaving technology, my design is unique."	N/A

Q6	"I won;t allow too much thought"; "I want to keep both ideas and designs instinctive."	"because I'm the only one who knows my mood."; "I collect whatever represents me and keep it in my sketchbook."	"I try my best to fit the criteria on the design brief"; "the more acknowledged my design is the bigger chance I can deliver my messages with fashion."	"Disney stories"; "little mermaids"; "I wanted to tell stories via fashion design."	"I want to design something every viewer understands. Just like the Internet, my work can communicate to everyone easily."
Q8	"I want to channel my happiness in my design. I am more concerned with color arrangement, patterns rather than silhouette or style."	N/A	"I always meet with my team to discuss possibilities"; "evaluation happens in every stage."	"Only qualified material and fabric are used in this collection"; "I ordered tons of special fabrication for this project"; "cost is also another thing I need to consider. Don't want to go over budget."	"I keep changing my design and advising my team until we are satisfied"; "it's time-consuming but I like the way we brainstorm like a family."
Q10	"Repeated design is competed under time constraint."	"Prolong from inspiration."	"Continuously"; "sometimes in the next collection."	"Repeat processes with fabrication."	"I modify my old design each time I start a new design."

31	32	33	34	35

Q2	"The design brief is usually determined by customer orders."	"Design brief."	"Usually we start a design brief meeting before line plan and development."	"Design brief."	"Design brief."
Q4	N/A	N/A	N/A	"Design innovation."	"Design innovation and satisfaction."
Q6	"We met several times and wanted to question the idea of time, space and frontiers within the performances of my design"; "we created an environment, with theatre lighting, and costume changes on stage."	"I focused on my intuitions, then contextualize and put them into a collection of clothes and accessories"	"We've learnt a new way of making clothes based on the old way but not the old way"; "after deconstruction, we want to find a new way to realize our vision."	"We know where to go and who to buy from as regards the best prints or jerseys."	"I want to design fashion to last as long as possible"; "I disregard trends and my collections are meant to last longer than just a season."
Q8	N/A	"Of coz there's regeneration of ideas and thoughts and evaluation throughout the design process."	"Peers' advice"; "the advantage is the affirmation of an idea. I am confident about what we show to the public, because two people I trust have seen it and helped refine it, shape it."	"There is always a team behind every designer. So it only makes sense for us to have our own team; "It's important to know I am not on my own."	N/A
Q10	N/A	"Prolong the inspiration process"; "gain experience."	"We always build on the last season."; "when you create something, you will never be satisfied with what you did and	"We think dynamically, Our designs always have a connection between past and present, present and future. I think this is part of an	"I like to challenge myself every time I design. I thrive on new details and new approaches."

			have to move forward”	artist’s mind, which never gets set on a single idea.”	
	36	37	38	39	40
Q2	“Usually we start a design brief meeting before line plan and development.”	“Design brief.”	“Design briefing.”	“The design brief is usually determined by customer orders.”	“Design briefing.”
Q4	“Satisfy both design and market requirements”; “There must be a point of view behind fashion.”	N/A	“The thought process behind the development of a collection is what makes designs so exciting.”	“Design innovation, modification; customer orientation.”	N/A
Q6	“When viewers first look at my design, they seem kind of scared.”	“Simple silhouette contrasts with heavy colors and identities of fabrication.”	“A sculptural approach to design.”	“I started to design when I was little through experiment. I have a great background to blend with my creativity for my customers”; “I sketch every time I meet my customers.”	“I used to design draping, turning, puffy effects on dummies, produce prototypes, and sketch.”

Q8	N/A	“Without my team, I’m the only person who knows about design”; “my team not only evaluate designs, but also support me”; “each evaluation is hard. Sometime even briefs need to be evaluated.”	“I used to design one panel cut on the bias, rotating the body”; “but it’s hard to make a garment without any changes.”	“I need to have a few trials with customer before the actual delivery”; “refinement, alteration must be in my process of design.”	N/A
Q10	N/A	N/A	“I want to find a new way of presentation.”	“I like to challenge myself every time I design. I thrive on new details and new approaches.”	N/A

	41	42	43	44	45
Q2	“Design brief.”	“Design brief.”	“Self-satisfaction.”	“Usually we start a design brief meeting before line plan and development.”	“Design brief.”
Q4	N/A	N/A	“Design innovation and satisfaction.”	N/A	N/A

Q6	"I love free, comfortable, sexy and contemporary design."	"Before sketching, I refer to textile design, patterns of fabrication for inspiration, then I start drawing."	"We put concepts down on paper, then theme and mood boards"	"We look for light and translucent fabric to represent that simple, elegant, romantic style."	"I'd love to toy with coloration."
Q8	"I evaluate not only my design, but also the market and production line-up. I would like to control every part of the design process for high quality designs."	"No doubt there are a lot of evaluation meetings with clients, marketing teams and production teams. Alteration and evaluation start from the beginning."	"We always try to elevate people with elegance."	"If we have a conflict, we will have meetings and go through the brief again."; "all teams will gather and think of a solution."	"Modern style, no exaggeration"; "fabrication should be silk or georgette."
Q10	N/A	"Prolong from solutions."	"Prolong the inspiration process"; "gain experience."	"We always build on the last season"; "we build label awareness as well."	"I modify my old design each time I start a new design."

	46	47	48	49	50
Q2	"Design brief."	"The design brief is usually determined by customer orders."	"Design brief."	"Usually we start a design brief meeting before line plan and development."	"Design brief."
Q4	"Unique designs are always my direction."	N/A	"Designing with my own hands is very joyful to me"; "I want to	"Design innovation."	"Quality and design orientation is my direction."

			deliver this message in my design as well."		
Q6	"Photography"; "Besides fashion, I read a lot about architecture"; "travel"; "notes and poems."	"I use complicated embroidery to tell my stories"; "keep simple, basic designs for contemporary fashion."	"I never sketch"; "everything starts with my hands."	"I design my collections like stories with openings and endings."	"I blend what I digest from news with my design"; "shades of daily life and culture transformation are featured in my collections."
Q8	N/A	"Conflicts always happen between designers and their marketing teams"; "communication and understanding are always needed before the final outcome and production."	"I will concern my teams for advice, we work together to find out solution or customer requests"	"Peers' advices."	"Repeat experiments on material application, pattern arrangement and color display."
Q10	"Repeat until satisfied."	"Design always repeat. The process starts from inspiration."	"Of coz, my designs carry over to each following season."	N/A	"The design cycle only starts from inspiration. Other are just led by the market or customers."

Appendix IIIa Checklist Matrix Table_1 and 2
 Title of paper "A development of design process model in conceptual fashion design"
 Name of authors Ms. Yuhan AU, Dr. Joe S. AU, Prof. Raymond W. AU

Design Phase	Stages	Explanatory note	Checklist	Designers' Interpretations
Investigation Phase	Outer-tangible level	Design direction	<input type="checkbox"/> Color orientation <input type="checkbox"/> Cost orientation <input type="checkbox"/> Customer orientation <input type="checkbox"/> Design innovation <input type="checkbox"/> Design modification <input type="checkbox"/> Market orientation <input type="checkbox"/> Material orientation <input type="checkbox"/> Production orientation <input type="checkbox"/> Quality orientation <input type="checkbox"/> Self-satisfaction	
	Mid-behavioral level	Design goal	<input type="checkbox"/> Build up portfolio <input type="checkbox"/> Company image establishment <input type="checkbox"/> Cost minimization <input type="checkbox"/> Deliver messages <input type="checkbox"/> Basic design <input type="checkbox"/> Create new style <input type="checkbox"/> Fulfill market needs <input type="checkbox"/> Fully utilize new materials <input type="checkbox"/> High quality design <input type="checkbox"/> Maintain own style <input type="checkbox"/> Modify past design <input type="checkbox"/> Overcome obstacles to past design <input type="checkbox"/> Satisfy company/customer/school requirement <input type="checkbox"/> Seek new technology or materials <input type="checkbox"/> Self-interest/satisfaction	
	Inner-tangible level	Design inspiration	<input type="checkbox"/> Architecture/buildings/constructions <input type="checkbox"/> Childhood memories <input type="checkbox"/> Color trends <input type="checkbox"/> Color/texture/materials <input type="checkbox"/> Culture/society/history <input type="checkbox"/> Designer's preferences <input type="checkbox"/> Environmental protection <input type="checkbox"/> Fashion shows/exhibitions <input type="checkbox"/> Fashion trends <input type="checkbox"/> Fine art <input type="checkbox"/> Internet/computer/new technologies <input type="checkbox"/> Lifestyle <input type="checkbox"/> Magazines/books/journals <input type="checkbox"/> Market trends <input type="checkbox"/> Movie/television/music <input type="checkbox"/> Natural/basic/nature <input type="checkbox"/> Performance/dancing/body movement <input type="checkbox"/> Philosophy/theories <input type="checkbox"/> Photography/snapshots <input type="checkbox"/> Political/news/newspaper <input type="checkbox"/> Religious <input type="checkbox"/> Sports entertainment <input type="checkbox"/> Travel	

			<input type="checkbox"/> Visual stimulation <input type="checkbox"/> Window display/street style	
Interaction Phase	Synchronization process	Design solution	<u>Pictorial</u> <input type="checkbox"/> Artwork collages <input type="checkbox"/> Computer-aided applications <input type="checkbox"/> Drawings <input type="checkbox"/> Illustration <input type="checkbox"/> Mood boards <input type="checkbox"/> Paintings <input type="checkbox"/> Photographs <input type="checkbox"/> Sculpture <input type="checkbox"/> Sketches <input type="checkbox"/> Theme boards <u>Written</u> <input type="checkbox"/> Letters <input type="checkbox"/> Paragraphs <input type="checkbox"/> Poems <input type="checkbox"/> Statements <input type="checkbox"/> Stories/journals/dairies <input type="checkbox"/> Texts <input type="checkbox"/> Words <u>Memory</u> <input type="checkbox"/> Childhood <input type="checkbox"/> Cultural background <input type="checkbox"/> Experiments <input type="checkbox"/> Past experiences <input type="checkbox"/> Person <input type="checkbox"/> Re/Deconstruction <u>Expression</u> <input type="checkbox"/> Feelings <input type="checkbox"/> Mind <input type="checkbox"/> Mood <input type="checkbox"/> Temper <input type="checkbox"/> Thoughts <u>Verbal</u> <input type="checkbox"/> Drama <input type="checkbox"/> Songs <input type="checkbox"/> Speeches <input type="checkbox"/> Telling stories	
Development phase	Design Implementation	Design sketches	<input type="checkbox"/> Aesthetic appearance <input type="checkbox"/> Collection line-up <input type="checkbox"/> Color arrangement <input type="checkbox"/> Coloration <input type="checkbox"/> Deliver concepts <input type="checkbox"/> Craftsmanship <input type="checkbox"/> Fabrication <input type="checkbox"/> Material composition <input type="checkbox"/> Deliver messages <input type="checkbox"/> Project moods <input type="checkbox"/> Pattern arrangement <input type="checkbox"/> Pattern balance <input type="checkbox"/> Psychological satisfaction <input type="checkbox"/> Shape <input type="checkbox"/> Silhouette <input type="checkbox"/> Sizing & Fitting <input type="checkbox"/> Theme deliver	
Evaluation phase	Design assessment	Evaluate design	<input type="checkbox"/> Evaluation checklist matrix I	<input type="checkbox"/> Negative <input type="checkbox"/> Positive (Refer to

outputs

checklist matrix II)

Design Phase	Stages	Explanatory note	Checklist	Designers' Interpretations
Evaluation phase	Design assessment	Evaluate design output	<input type="checkbox"/> Customer/model trials <input type="checkbox"/> Garments performance <input type="checkbox"/> Styling/Accessories <input type="checkbox"/> Meeting brief <input type="checkbox"/> /requirements <input type="checkbox"/> Customer/department evaluation <input type="checkbox"/> Experimental outcome <input type="checkbox"/> Perfect color arrangement <input type="checkbox"/> Perfect silhouette <input type="checkbox"/> Perfect materials arrangement <input type="checkbox"/> Perfect patterns placement <input type="checkbox"/> Perfect sizing & fitting	
		Evaluate positive output	<input type="checkbox"/> Repeat from Direction <input type="checkbox"/> Repeat from Goal <input type="checkbox"/> Repeat from Inspiration <input type="checkbox"/> Repeat from Solution <input type="checkbox"/> Repeat from Design <input type="checkbox"/> Repeat from Positive Evaluation <input type="checkbox"/> Repeat from Negative Evaluation <input type="checkbox"/> Termination	

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