

DESIGNING SUCCESS: DESCRIBING A COLLABORATIVE CLOTHING DESIGN PROCESS BETWEEN APPRENTICE DESIGNERS AND EXPERT DESIGN ENTREPRENEURS

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OPSOMMING

Die Suid-Afrikaanse kledingbedryf is onder geweldige ekonomiese druk, veral ten opsigte van vervaardiging, wat ook kledingontwerp insluit. Daar is bevind dat 50% van werknemers in hierdie bedryf in 2013 afgelê is weens die feit dat kledingmaatskappye nie met goedkoop kledinginvoere in die mark kon meeding nie. Entrepeneurskap in hierdie bedryf word aangemoedig om oplossings te bied vir werkloosheid. Gevolglik is daar 'n behoefte aan platforms wat kledingontwerpers kan ondersteun wat hul eie ondernemings wil stig.

Een sodanige inisiatief wat spesifiek vir kledingontwerpers in Gauteng geïmplementeer is, is deur 'n gevestigde modehuis geloods. Hierdie platform het ten doel om leerling-kledingontwerpers wat hul eie ondernemings wil begin, by te staan met tegniese opleiding en ondersteuning. Terwyl die leerling-ontwerpers se vaardighede in hierdie proses ontwikkel en verbeter word, word daar ook realistiese verwagtings oor die bedryf bewerkstellig.

Die studie handel oor 'n spesifieke ontwerpproses wat toegepas is tydens 'n opleidingsprogram vir leerling-ontwerpers by die gevestigde modehuis. Die bepaalde ontwerpproses wat in hierdie studie beskryf word, is gebruik om 'n kledingreeks saam te stel wat eers op 'n internasionale modeskou ten toon gestel is en daarna na 'n spesialiteitswinkel in Gauteng gestuur is om aan 'n spesifieke teikenmark verkoop te word.

Die navorsingsontwerp was 'n gevallestudie en die navorsingsmetodes was kwalitatief van aard. Die navorsingsmetodes het waarnemings van die ontwerpproses en semi-gestruktureerde onderhoude met deelnemers ingesluit. Die deelnemers het nege leerling- en drie spesialisontwerpers ingesluit.

Samewerking tussen twee leerlingontwerpers en 'n spesialisontwerper het kreatiwiteit van 'n span, in plaas van individue, tydens 'n ontwerpproses opgelewer. Die bevindinge dui daarop dat die span se kreatiwiteit voordele inhou vir alle betrokke partye. Die bevindinge ten opsigte van kreatiwiteit dui daarop dat

spesialisontwerpers die vaardigheid en aanpasbaarheid, wat twee dimensies van kreatiwiteit is, van die leerlingontwerpers gestimuleer het. Verder is daar bevind dat die leerlingontwerpers met nuwe, oorspronklike idees vorendag gekom het wat die spesialisontwerpers inspireer het. Die sukses van die ontwerpte reeks ten opsigte van die beeld van die handelsnaam en die feit dat dit aan die behoeftes en voorkeure van 'n bepaalde teikenmark voldoen het, dui ook daarop dat die kreatiewe omgewing 'n positiewe bydrae tot die uitkomst gemaak het.

Die kreatiewe omgewing het nie net bewerkstellig dat nuwe tegnieke en idees toegepas is op die kledingreeks nie, maar daar is ook twee faktore geïdentifiseer wat belangrik is vanuit 'n besigheidsperspektief:

- Realistiese verwagtinge oor wat kledingontwerp vir 'n bepaalde teikenmark en bemarkingsdoeleindes behels
- Kreatiwiteit vanuit 'n probleemoplossingsperspektief

Realistiese verwagtinge oor die bedryf, die ontwerpproses en kreatiwiteit is van uiterste belang vir die bevordering van entrepeneurskap.

Die outeurs van hierdie artikel beveel aan dat die kolletiewe ontwerpproses, wat ontwerpers met verskillende vaardigheidsvlakke insluit, nie net gebruik moet word om kledingstukke te skep nie, maar ook as 'n proses om 'n veilige, kreatiewe omgewing daar te stel vir leerlingontwerpers wat ondernemings wil begin. 'n Veilige, kreatiewe omgewing behels dat leerlingontwerpers toegelaat word om foute te maak en ondersteun word om nuwe idees uit te toets, en sodoende aangemoedig word om hul entrepeneursdrome te verwesenlik.

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INTRODUCTION

With the high unemployment rate in South Africa and specifically the deterioration of the local clothing and textile industry (Nattrass & Seekings, 2014), government has prioritized small, medium and micro-enterprises (SMMEs) as a key driver of job creation (Urban & Naidoo, 2012). Consequently, the livelihood of clothing design and manufacturing SMMEs has become increasingly important for the socio-economic development of the country (Nattrass, 2014). The governmental strategy pertaining to the clothing and textile industry suggest a need for entrepreneurial/small business platforms as well as processes and support mechanisms to induce start-up rates.

Unfortunately, the number of SMME failures in South Africa varies between 50% and 95% within the first five years (Willemse, 2010). Entrepreneurial incubation hubs are often introduced to develop the necessary skills for entrepreneurial ventures, but also to support start-up small business ventures to survive in the long run (Ebbers, 2013). One such initiative is an incubation hub that implements a collaborative model in a well-established clothing design SMME. This incubation hub's collaborative model supports inexperienced designers to design and produce garments on the well-established design platform of expert design entrepreneurs, with the assistance of the latter's mentorship. The specific incubation hub presented in this paper is situated in Gauteng. This paper describes a collaborative clothing design process applied at this incubation hub to support and develop apprentice clothing designers who aspire to launch their own entrepreneurial ventures.

LITERATURE REVIEW**Design as a process to achieve set objectives**

A design process, as opposed to an artistic process, is a strategic planning process that has specific objectives that typically revolve around end-user or consumer needs (Bai *et al*, 2009; Boztepe, 2007; Miller *et al*, 2005). The generic design process of Aspelund (2010:i) has been applied to clothing design and includes the following phases: (1) Inspiration, (2) Identification of the problem, (3) Conceptualisation, (4) Exploration, (5) Definition/modelling, (6) Communication. Design processes that resemble Apelund's (2010:i) process and that have been applied to clothing design are those of LaBat and Sokolowski (1999), Regan *et al* (1998), and Lamb and Kallal (1992). Although some of these processes have more phases than others, the preproduction phases of all these clothing design processes correspond. Table 1 equates the design processes with a description of the generic actions proposed by Au *et al* (2004) that take place during the design phases of the different design processes.

From Table 1 it is evident that all the provided design processes require analysis, synthesis and evaluation skills prior to the implementation phase. Analysis mainly involves analysing a design problem. A design problem can be defined by the design parameters which involves the design requirements and what the design should not include or be (Aspelund, 2010:10). Typical parameters evident from Table 1 for fashion design processes involves analysis of trends or finding inspiration by analysing themes or fashion trends, user/consumer needs, design requirements and possible constraints during the design process.

From Table 1 it is also evident that synthesis as a design action, relates to the designer's ability to combine ideas that relate to raw materials, concept designs and alternative solutions to the design problem. Evaluation pertains to the refinement of ideas in relation to the possible solutions' potential to solve the design problem at hand. Implementation involves making the suitable design concept real by communicating a final design concept and producing the concept accordingly. The communication as illustrated in Table 1 suggests that there is more than one party involved in a design process.

TABLE 1: COMPARISON BETWEEN DIFFERENT DESIGN PROCESSES APPLIED TO APPAREL DESIGN

	Common design action (Au <i>et al.</i> , 2004)	Engineering design process applied to apparel design (Regan <i>et al.</i> , 1998)	Apparel design process of Lamb & Kallal, 1992	Universal design process of Aspelund (2010:i)
Pre-production planning	Analysis			1 Inspiration (motivation for the problem, trends analysis)
		1 Problem recognition (a) Problem statement (b) Creation of ideas (c) Solution generation	1 Identification of problem (functional, expressive and aesthetic dimensions of client needs)	2 Identification of the design problem (end-user needs and constraints; specific requirements)
		2 Problem definition (a) Objectives (b) Resources (c) Design boundaries (d) Sub-problem		
	Synthesis	3 Exploration of problem (a) Information search (b) Assumptions (c) Design strategy (d) Market assessment (e) Objectives (f) Cost	2 Preliminary ideas (creativity: technical sketching, brainstorming, research, survey question-and-answer sessions)	3 Conceptualisation (brainstorming, presenting analogies, questioning, sketching)
		4 Search for alternatives (a) Experience (b) Answers (c) Requirements (d) Design proposal	3 Design refinement	4 Exploration of ideas (that might solve the problem)
		5 Evaluation and decisions (a) Outcomes (b) Feasibility (c) Evaluation		
		6 Specification of solution (a) Analysis	4 Prototype development	5 Definition/ modelling
Evaluate	7 Communicate solution (a) Verbal (b) Visual (c) Approval	5 Evaluation (functional, expressive and aesthetic needs of apparel play a role)	6 Communication	
Production	Implement		6 Implementation	

(Tselepis *et al.*, 2013:261)

All the design processes presented in Table 1 can be viewed as user-centred as the design problem revolves around an end-user or consumer's needs. Lamb and Kallal (1992), in particular, emphasise a user-centred design process that focuses on the multidimensional needs of the customer or user, which designers should take into consideration in order to create value.

A user-centred design approach is typically associated with design processes that are implemented for commercial use (LaBat & Sokolowski, 1999; Regan *et al.*, 1998). A commercial design purpose therefore, revolves

around the needs and wants of the consumer who purchases the designed product so that the purchased product satisfies the consumer needs. Nevertheless, one can argue that it takes experience to identify and interpret user or customer needs in design, and this might present a challenge for apprentice design entrepreneurs who often do not have the support systems that allow for errors during the clothing design process. For this reason, collaboration with more experienced designers might be beneficial.

The benefits of collaborating with expert designers in a creative environment

Collaboration is a way to overcome design challenges or enhance the skill level of those involved (Kangas *et al*, 2013; Wiltschnig *et al*, 2013). Collaboration between designers from other design disciplines has also been introduced to clothing design, resulting in cross-over trends (Lidwell *et al*, 2010:16; Bai *et al*, 2009). Moreover, collaboration between designers with similar backgrounds in the same discipline has been prominent in the field of information technology (Avison & Fitzgerald, 2008: 479). However, literature relating to the clothing design process is lacking, especially in describing the advantages of collaboration with expert designers during the clothing design process to support and enhance the skills of apprentice designers who aspire to pursue their own entrepreneurial ventures in the clothing industry. The advantages of collaboration during a design process are linked to collective creativity within a creative environment that emerges as a result of the collaboration.

Collective creativity in the collaborative design process

Creativity is defined as a multifaceted integrative concept that emanates from conceptual reasoning. It is an emotional process and is linked directly or indirectly to the characteristics of one's formal and informal education, social-cultural situation (including family) and historical experiences (Wu *et al*, 2013). According to Mohr (in Wu *et al*, 2013), the comprehensiveness of the concept of creativity is manifested in a phased process of reasoning and behavioural changes. One can derive from this comprehensive definition that creativity is strongly linked to critical thinking and problem-solving processes in which collaborative group members can participate to draw from a collective creativity.

Shiu *et al* (2011) confirm that collective creativity mainly manifests during creative problem-solving. Lindberg *et al* (2010) suggest that designers adopt descriptive analytical design thinking when approaching complex design problems. This approach begins with an empirical exploration of the design problem by observing and describing what other experienced designers do. It is followed by exploring many alternative ideas of how to solve the problem, which is facilitated by frequent conversations with other designers and end-

users (such as the consumer). Multiple iterations provide the link between the problem and a suitable solution that accesses diverse fields of knowledge. Lindberg *et al* (2010) state that experienced designers create an environment that encourage collective creativity. This approach can be linked to, or result in innovative solutions to design problems. Although some links between collective creativity and collective thinking have been made (Shin *et al*, 2012) the exact process of collective creativity to solve complex problems remains unidentified.

Collective creativity is a phenomenon that has been linked to ideation and is beneficial in terms of fluency, flexibility and novelty (Tadmor *et al*, 2012). Fluency, flexibility and novelty are dimensions of creativity that relate to ideation in particular (Kraft, 2005). Fluency is someone's ability to generate multiple possible answers to a problem in a limited time (Silvia, 2008). This implies that a high level of fluency enables the person to come up with several meaningful solutions in a short time frame. Flexibility is an adaptability to change instructions or the ability to make a spontaneous mind shift to solve a problem, whereas novelty points to originality or rarity of an idea (Sarkar & Chakrabarti, 2011).

Expert designers have the skill to yield fluency and flexibility because, according to Dorst and Reymen (2004:136), expert designers (as in "better" and experienced) have the skill to recognise a design problem fast and respond to it intuitively. Expert designers intuitively apply solutions to design problems by drawing from the experience gained with similar previous problems (Daly *et al*, 2012). This implies that the expert designer has an ability to see patterns or similarities between a current problem and other problems he/she has solved previously. The experience triggers several approaches to the problem that have been implemented before. However, one can speculate about the role of experience when different approaches (other than the tried and tested approaches) to solving familiar problems are required to enhance the novelty of ideas. The literature is not clear on how original and unusual expert designers' ideas always are.

Conversely, it has been established that apprentice designers are still developing their creative problem-solving skills. They require direction and clear instructions with regard to design (Wong & Siu, 2012). Nevertheless, apprentice designers also need opportunities to learn and experiment with creative ideas (Csikszentmihalyi, 2014:101).

Creativity can be viewed as a skill that is important during design processes, but also in entrepreneurial thinking. Kuratko (2013:153) confirms that creativity is one of the skills that distinguishes a small business owner from a true entrepreneur who establishes a business that shows continuous growth. Therefore, the argument is made that apprentice designers who aspire to be entrepreneurs should develop creative skills not only to be better designers, but also to be better entrepreneurs.

RESEARCH OBJECTIVE

The research objective presented in this paper is to explore and describe a collaborative design process that engages apprentice clothing design entrepreneurs and expert design entrepreneurs at an incubation hub in Gauteng.

RESEARCH METHODOLOGY

Research design

The researcher was interested in understanding events, actions and processes in their context. Yin (2008: 18) points out that a case study is an empirical enquiry that can be implemented to investigate a contemporary phenomenon in great detail within a real-life context. For this reason a case study research design was suitable for this study.

The specific case was selected because it experienced continuous business growth for five consecutive years and launched a small business incubation hub for aspiring clothing design entrepreneurs. Two of the experienced designers were owners of the incubation hub and also owned an apparel design small business. The two experienced designer-owners were regarded as well-established fashion entrepreneurs who has an understanding of the local markets. These two experienced designers produced high-end custom-made garments as well as ready-to-wear ranges. All the ready-to-wear ranges designed by the experienced designers are available in four speciality stores in Gauteng. The ready-to-wear ranges were managed by a third experienced designer who was a fulltime employee in the design business and assisted with training in the incubation hub. The incubation hub shared the premises of the manufacturing facilities of the experienced designers' design business. The incubation programme was managed by training staff who coordinated experiential learning experiences with the experienced designers. The incubation

hub implemented a collaborative design model which involved mentorship during different phases of the apparel design process.

The case was prominent in the local media because of the role it played in job creation through a mentorship programme for aspiring clothing design entrepreneurs. Nine apprentice designers were involved in the study in this case, six of whom had no formal training from academic institutions and were taught pattern design and draping by the three experienced designers at the incubation hub to earn an income while undergoing training over a two-year period. The other three apprentice designers had completed a three-year diploma at a technical university and entered into a six-month experiential learning programme offered by the incubation hub.

Data gathering and methods

All the participants in this study gave written consent to take part in the research study. Each participant was consulted before the data was reported for publication purposes. Anonymity was agreed upon and the interview schedule used for data collection was approved by an ethics committee affiliated with the incubation hub. The participants were also informed that they could withdraw from the study at any point, should they be uncomfortable with the researcher or any aspect of the research process applied during data gathering.

Qualitative methods were used in the research study. Semi-structured interviews were held and the interviews varied in length from 30 minutes to two hours. Interviews with participants were repeated until data saturation was reached. A total of eight interviews were conducted, involving two apprentice designers and their mentor at a time. The interviews allowed all participants to reflect on their experience during and after the design process of a dress. Other questions that required individual apprentice designers' opinions were asked only after the mentor or other apprentices had left the interview session. The aim of this was to specifically elaborate on, or explain observations that the researcher documented during the design process. Audio recordings of the interviews were made with the permission of the participants. All interviews were transcribed by the researcher, and participants were asked to validate the interviews by reading through the transcriptions.

The researcher also observed the design process. Progress, interactions and techniques

were documented. Data was gathered over a period of one month on weekdays between 8:00 and 21:00. Field notes were made throughout the data gathering period and the researcher's own reflections were recorded every evening.

Data analysis

The researcher's strategy to analyse data incorporated the guidelines on case study data analysis of Leedy and Ormrod (2005:135), as well as the qualitative data analysis framework of Miles and Huberman (1994:17). All the data from interview transcriptions and field notes on the observations was analysed line by line according to the categories to which it corresponded. Preliminary design phases identified from existing literature were used as initial categories. New tentative categories that emerged from the data were created for data that did not fit into an existing category. All the data sources were repeatedly read to make sense of the patterns and themes that emerged, as advised by Merriam (2009:175). Categories, subcategories and units of meaning were created as they emerged from the data. As they were confirmed with existing literature, the case's findings were re-interpreted and validated by two experts (peer reviews), and categories were refined and revised.

Data was initially categorised according to the design phases of Aspelund (2010:i), because they overlapped with other design processes applied to clothing design. Nevertheless, the particular case seemed to apply an iterative process. The distinction between preproduction planning and the actual production became vague and these phases were seen as inseparable. For this reason, the generic descriptors for design phases namely analysis, synthesis, evaluation and implementation were used to report the findings. In this regard it is also important to note that evaluation and implementation was not separate phases in the findings, as the apprentice designers were allowed to experiment and evaluate the designs with their mentors while implementing.

The findings on the design process were analysed according to the generic design actions in order to identify strategies that supported dimensions of creativity, as pointed out in the literature review, which include fluency, flexibility and novelty.

FINDINGS AND DISCUSSIONS

Analysis phase

As illustrated in the literature review, the analysis phase of the design process involves analysing the design problem with the relevant design parameters, analysis of user/consumer needs which can also become requirements and the design parameters. In this study, a range of twenty dresses we required to firstly be showcased during an international fashion week, and to secondly be supplied to a local speciality store that caters for a specific niche target market. The experienced design entrepreneurs invited the apprentice designers to collaborate on nine of the twenty required dresses. The analysis phase in of this particular design process revolved around the specific requirements and purpose of the range. These requirements could therefore be viewed as the parameters of the design process.

Analysis of design parameters The design parameters were analysed by the all three of the experienced designers and discussed with the apprentice designers. The parameters were:

- 1) Apprentice designers needed to collaborate in designing the garments that represented the particular fashion brand image which is eccentric and exclusive.
- 2) Garments were to be designed for a size ten to suit a specific target market's needs.
- 3) The latest fashion trends had to be incorporated into a tailored garment to adhere to the quality standards of the fashion house.
- 4) All garments had to be created within a budget for the entire range.
- 5) Apprentice designers were requested to collaborate on a central theme for the entire range.

The role of the expert and apprentice designers during the analysis phase

The expert designers came up with a coherent theme during a first meeting. Two of the expert designers decided to focus on South Africa's natural elements to get maximum exposure for South Africa during the international fashion week. In addition, the range had to adhere to the aesthetic preferences and needs of a local speciality store's target market. The third expert designer supported this decision. The overall design inspiration was therefore directed by the experienced designers. The following statement by an expert designer gave insight into the reasoning for this direction, as opposed to negotiating the inspiration with the apprentice designers:

"Inspiration is something personal, so we ask the youngsters [for] their opinion and inputs only when we are happy with what we have chosen."

The experienced designers requested that nine of the concept designs be developed by the nine apprentices. They seemed to think that mentorship on half of the range provided enough opportunity for apprentice designers to be creative and illustrate their abilities. One experienced designer's statement in an interview reflects this:

"We have to give these young designers a way to show what they are made of. An opportunity like this can make a designer."

Two apprentice designers were grouped with an experienced designer to extrapolate coherent design ideas derived from the inspiration, the target market needs and message the fashion house brand communicates. Some of the apprentice designers expressed dissatisfaction during an interview conducted after the meeting with their mentors where the inspiration was announced to direct the themes:

"I was shocked to realise that I can't just do what I envisioned! Up to now all our projects gave us that scope. It felt like they are limiting my creative spirit."

Synthesis

Sketching In this design phase, sketching is a typical way to conceptualise designs. The experienced designers explained that a basic preliminary sketch should be made and not refined until the actual garment has been completed. The experienced designers explained this reasoning to the researcher:

"The sketch is sometimes not the dress. It [ideas and the product] grows. It is a waste of time to spend two hours on a sketch that will change at the end of the day. Ninety percent of the time we get another fabric [in the fabric store]; then the entire picture changes."

This statement indicated that the experienced designers encouraged flexibility. They seemed to want the apprentice designers to keep an open mind about what the garments could become. Nevertheless, another apprentice designer's comment to the researcher and other apprentice designers illustrates that the expert designers' advice on open-mindedness was not perceived as flexibility:

"It is hard not to do what you want..."

Fabric selection Concept ideas were

inseparable from fabric selection. The selection of fabric became a prominent aspect of discussion among the experienced designers and apprentice designers. A selection was made from large pieces of "left-over" fabric and one roll of basic Dutchess satin that was set aside for the entire range. The designated pile of fabric for the range grew over the following two weeks from small pieces of fabric left over from client projects. Fabric selection and ideas on the silhouettes or detail on dresses were discussed simultaneously in the open-plan studio on a daily basis for at least two hours at a time.

The use of off-cuts made an impression on some of the apprentice designers, who seemed to have developed an understanding of budget constraints. This is confirmed in the following statement made by an apprentice designer during an interview:

"...we will use this [holding up a piece of 1 m x 1 m fabric] sparingly and our group shares with those two [pointing to two other apprentice designers], cause this is really expensive. I think it's like R4000 per meter. I am even nervous to cut this, so I will ask [expert designer's name] to help me."

This comment illustrated that the particular apprentice designer respected the skill of her mentor and saw him as someone who could assist her to overcome anxiety, but it also points to a sensitivity for cost, which relates to business thinking.

Pattern design This design phase also required that the patterns had to be manipulated using a standard size ten block pattern. Apprentice designers were briefed not to include any style lines other than the princess lines for detail, even if there were probably going to be diagonal lines on the final garments. The following statement by one of the expert designers confirmed this strategy:

"The thing is we can always just create an illusion of a line here [pointing to a rough sketch] because if we have to put this on the pattern, the youngsters [referring to apprentice designers] will get confused when we start cutting and we will also lose production time. We can create the very same thing by just creating the look and we would have covered that seam line with lace in any case, so why bother?"

The statement indicates that the strategy was implemented to reduce production time, but also to align a complex design task to the level of the apprentice designers, so that fluency was facilitated. This strategy was positively

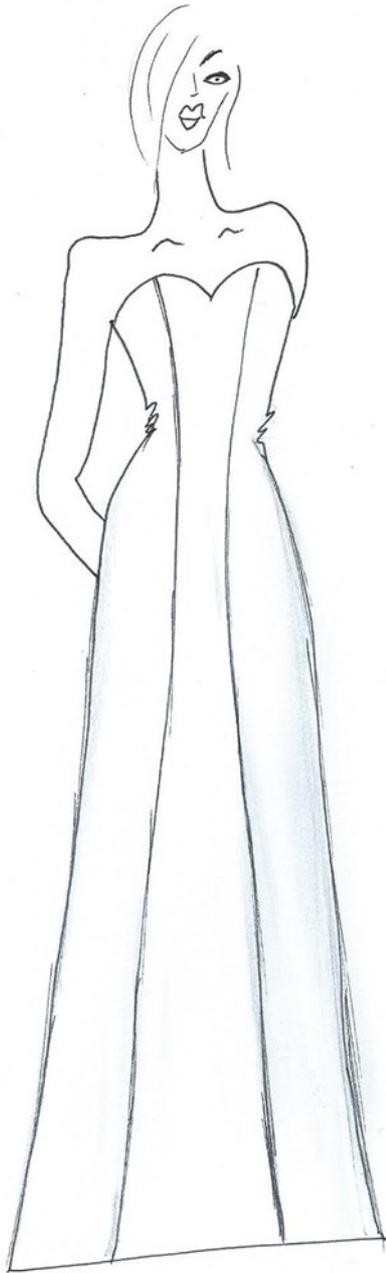


FIGURE 1: A CANVAS

perceived by one of apprentice designers, who shared the following after hearing that she does not have to draw a complex pattern:

"Yup ... loving this cause I want to get to the 'lekker' stuff, you know, where I get to play. Not draft and test patterns and cut pieces that will change a million times to get the right fit."

Evaluation and implementation

It is important to note that the particular case

implemented a non-linear design process with regard to the role of creativity. Creativity usually plays a more important role during the ideation phases of design. In this case, the actual collective creativity came to the fore during the evaluation and implementation phase. Furthermore, evaluation and implementation were not two separate phases. The observations and verbatim comments on this phase are presented accordingly.

Canvas stage Nine "canvases" (generic A-line dresses without detail that were sewn together by three experienced seamstresses) were displayed on dress forms in an open-plan studio. Two apprentice designers, under the leadership of one experienced designer, worked on one dress at a time, but a total of two dresses were completed by each team except for the ninth apprentice designer who started on the ninth dress on her own. She was joined by a member of another team when that team had completed their first dress. Nine of the garments were therefore completed by the apprentice design teams. The observations reported in this phase mainly reflect the first nine dresses that were completed by teams constituting two apprentice designers. Creative sewing and problem solving skills were applied by apprentice designers and the experienced designers served as a sound board for apprentice designers' thinking and application in transforming the canvas.

Figure 1 shows a line sketch of a typical canvas

From Figure 1 it is evident that only a basic A-line dress with a simple neckline is designed without any detail or extra layers of fabric. Princess lines are the only style lines evident.

Transforming the canvas Draping techniques were mostly used in this design phase to add layers of flowing fabric to the canvases. Fabric layers were sewn onto the canvas by hand using four threads. Creative ways were used to conceal hand stitches on the garments, mostly with handmade flowers or cut-out lace, re-engineered with other pieces of off-cut lace, to create an unconventional look. Other techniques involved crunching tulle and adding lace or asymmetrical detail to canvases. The canvases were viewed as potential art pieces that had to be created for a specific niche market. Broad ideas sketched in the first phase were adjusted as the actual garment took shape. Figure 2 shows a completed garment as it evolved from the canvas stage.



FIGURE 2: A TRANSFORMED GARMENT

Figure 2 illustrates one of the transformed garments with added layers to change the initial canvas' silhouette. Lace was used to cover the princess lines and detail was added to create an asymmetrical neckline. A diagonal style line that seems to separate the top and skirt part is simulated on the canvas with lace detail.

The role of the expert designers during the transformation of canvases

The expert designers consistently reminded the apprentice designers of the parameters of the design process, especially the fact that it had to be commercial and therefore, the budget had to be considered. Moreover, emphasis was placed on the fact that the fashion house brand always offers garments that are "different" to what one would expect. Apprentice designers' expectations about garments and what it should represent were managed accordingly. An experienced designer explained this brand image in an interview:

"The designs evolve as we go on. You'll have the fabric and then add something here, and we add other stuff. It is done on the dress. It is different than what we started with, but it's always an improvement ... we like to do stuff that is different, our clients want to wear something fresh and less ordinary."

From this statement, it is apparent that designs needed to evolve into something better, something different and new. These aspects had to be visible from the target market's point of view. The following statement from an apprentice designer confirms that novelty from the consumer's point of view was considered as creative problem-solving during the evaluation and implementation design phase:

"I can't believe that I did it. I managed to find the midway between creating something different and what the customers will want."

From these statements, it seemed that the created garments were perceived as novel.

During every garment's transformation session, the apprentice designers, in particular, experimented with the garments by draping loose fabrics over the canvases. The collaborative efforts of the teams included experiments and sharing advice on detail, texture and even silhouette [which in six dresses changed dramatically from the original sewn dress's silhouette]. One experienced designer's comment on an approach taken by an apprentice designer that did not produce the silhouette she anticipated:

"I want you to look at that again, but don't feel

bad about how you did it. We all learned this way. The important thing is that you see why I do it this way [demonstrating]."

It seems from this statement that the specific expert designer guiding this team encouraged apprentices to learn from their mistakes or their failures.

The apprentice designers were further coached to literally step back from the creation from time to time when a section on a dress was almost complete. This is done to appraise the garment from a distance. The experienced designers referred to this technique as "zooming out" to appreciate the "gestalt". An apprentice designer commented on the value of this technique:

"At first I could not understand what [experienced designer's name] means when he says it works better if I look at how it all comes together and then only plan where I want to go [with detail added to the canvas]. I guess my eye for this kind of thing improved because now I can see what he means. I get lost in the detail and it helps me to just stand back a bit and look at the big picture ... It helps me to plan my next step ..."

Another aspect that surfaced in this design phase that seemed to be to the apprentice designers' benefit was the advice, tricks of the trade and ideas that were shared between the apprentice designers and experienced designers. It appeared that the tricks of the trade enabled apprentice designers to speed up the process or create fluency, but at the same time facilitated realistic expectations about the strategic approaches that design requires, as opposed to only applying an artistic process that is more subjective. One of the apprentice designers expressed her gratitude in this regard: *"He really showed me some tricks of the trade ... I think this is probably the way industry works."*

Another apprentice designer (who initially expressed dissatisfaction at the fact that apprentice designers were not allowed to choose their own inspiration) had the following conclusion when her garment was done:

"At first I was scared, but I feel OK now. He showed me some ideas and guided me. It didn't feel like he designed for me, but he really made me think about different routes to get the look I want."

The evidence from the discussion on this phase indicates that apprentice designers were

encouraged to try new techniques and they were supported when their techniques did not deliver the desired results. The technical skills were therefore developed, but at the same time an awareness was fostered of the business decisions that are interrelated with the design process (such as brand image and costing). Jaarsveld and Van Leeuwen (2005) confirm that collaboration that yields collective creativity can be beneficial, especially to apprentice or novel designers.

Conversely, an experienced designer illuminated the advantage of working with apprentice designers from an experienced designer's point of view:

"I can't say that I didn't get a lot from this experience. I learned from my group [apprentice designers] to dream again and to try and reach for the stars! I am excited to be part of their crazy ideas and it also makes me want to try new things again."

The above statement illustrates that the advantages of collaboration from the experienced designer's point of view seem to relate to novelty in particular. The apprentice designers seem to have brought ideas into the process that were probably viewed as "crazy" because they did not imitate the experienced designers' conventional way of solving design problems. Nevertheless, the ideas were blended so well that the following statement of an experienced designer confirms the success as a result of collective creativity:

"It sometimes happens that we don't even know whose idea is actually implemented or who came up with the idea first. It is as if we just came up with it together."

In this regard, Hargadon and Bechky (2006) confirm that the ideas implemented during collaborative design can be as a result of the collective creativity, which "happens when social interactions between individuals trigger new interpretations and new discoveries of distant analogies that the individuals involved, thinking alone could not have generated."

CONCLUSIONS AND RECOMMENDATIONS

The advantages of collaboration with other designers during the design process include creative processes and techniques that are produced when complex problems are solved (Jennings, 2011:113; Steiner, 2009). From a design perspective, the findings of this study suggest that the range developed was successful in the sense that a combination of

apprentice and expert skills on half of the range seemed to have enhanced fluency, flexibility and novelty during the design process. The final range reflected the fashion house brand's eccentric flavour, and a coherent theme inspired by the expert designers and created within a pre-determined budget. In addition, the expert designers also saw the value in having novel ideas presented when they intuitively solve problems, which seemed to have translated into their designs. This implies that the advantages of collaboration do not only pertain to the apprentice designers, as the literature indicates, but it could also benefit the expert designers, especially with regard to novelty as a dimension of creativity.

However, the important role of the creative environment in stimulating creativity in this particular case should be emphasised. The designers collectively facilitated a creative environment. The incubation hub seemed to have served its purpose with regard to developing creative design skills. As a result, collective creativity was yielded in an environment where designers were allowed to experiment in a safe learning environment, where failures are supported and the ability to evaluate one's own ideas or the applicability of others' ideas was developed.

The advantages of stimulating creativity as a skill relate to the development of design thinking (Brown, 2009:13), which is the ability to solve open, complex problems. Martin (2009:57) says that approaching problems from a design thinking perspective can lead to a better and more competitive business. The findings confirm some basic strategies that relate to competitive advantage with regard to costing, branding and expectations about design for a specific target market. Stimulating creativity during the design process can also enhance entrepreneurial skills, as creativity is associated with entrepreneurial behaviour (Anderson *et al*, 2014). The authors of this paper are therefore of the opinion that the design process is not only a process for problem-solving, but that the design process can also be used as an agent to develop the creativity required for successful designs and entrepreneurial behaviour.

In conclusion, it is recommended that the clothing design process is applied in a collaborative way, involving designers with different knowledge and skill levels, at incubation hubs. The incubation hubs can become creative environments that facilitate the

professional development of apprentice designers. In this way, the design process can become an agent that facilitates novelty for experienced designers, but at the same time enhances the probability of the success of aspiring clothing designers who want to pursue an entrepreneurial design dream.

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