

# 國立交通大學

管理科學系 碩士班

碩士論文

兒童對客製化之反應研究—目標取向與社會比較之互動關係

Children Responses toward Customization: Interactive  
Effect between Goal Orientation and Social Comparison

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## 中文摘要

在顧客導向的經濟社會中，越來越多的消費者希望有機會設計專屬於自己的產品，我們稱此活動為大量客製化，消費者可以透過此一過程讓產品或是企業提供的服務，更符合他們的需求。另一方面，兒童市場越來越重要，因為父母希望孩子可以快樂的成長，所以只要孩子喜歡，就會盡可能的滿足他們的需求。因此，本研究主要目的是去探究兒童對於客製化活動的看法，試圖找出吸引他們注意的最佳方式。本研究執行了 2(目標取向) X 2(社會比較)的實驗設計，結果顯示採用外在因子吸引孩童進行活動搭配向下比較最能提升孩童對於自行設計商品的評價。



## Abstract

In this consumer-centric economy, more and more consumers want the opportunity to design their own product. We can call the activity as mass customization, which is a process of supplying products and services that fit customers' needs best. Moreover, children are an important and potential target for marketers since parents want their children to grow up happy, they will fulfill children's requirement as much as possible. As a result, the study examines children's response toward customization. To examine how the interaction between goal orientation and social comparison influence the evaluation for self-designed product, we employed a 2(goal orientation) x 2(social comparison) experience design. The results showed that children who are encouraged to adopt an extrinsic goal orientation have higher evaluation when they exposed the worse-off others (downward comparison).

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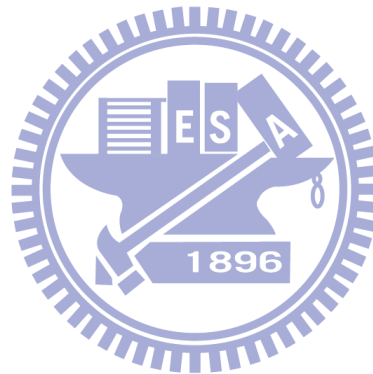
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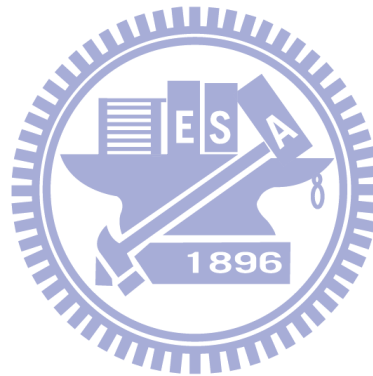
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# CHAPTER 1 INTRODUCTION

## 1.1 Research Background

Now there are more and more types of goods and services. Marketers use a variety of techniques to attract consumers to increase product purchases. Traditional marketing techniques include celebrity endorsement, product placement, word of mouth, product bundle and so on. To put the matter simply, the consumer's role is passive in the past. Sellers' ability of eliciting consumers' preferences will influence their choice. Consumers can just search over a variety of products to recognize the best fit. However, current situation is different. Products and services can increasingly meet customers' needs through mass customization strategies, which make the consumer's role more active. They can partly design a product according to their own preferences.

Previous studies define mass customization as a system that uses information technology, flexible process, reasonably low costs, and organizational structures to deliver a wide range of products and services that meet specific needs of individual customers (Silveira, Borenstein, & Fogliatto, 2001). From this definition, we may find that more and more business provide mass customization service. For example, Dell computer, IKEA, Zales, NikeID. A special brief examination of over 500 web-based

configurators ([www.configurator-database .com](http://www.configurator-database.com)) reveals that about 50% are from fashion industries (e.g., apparel, accessories, footwear) (Deng& Hutchinson, 2009) .

Da Silveira et al (2001) presented a literature review on mass customization and divided them into eight levels, ranging from pure customization (individually designed products) to pure standardization. The eight different levels involving design, fabrication, assembly, additional custom work, additional services, package and distribution, usage, and standardization. In the previous paragraph, we mentioned fashion industries which most commonly used customized services generally belong to self-designed ones. Through the self-design service, marketers could serve the wants of individual customers better. This is the focus of the paper. However, companies provide this service not only for adults but also for children as children's market is increasingly important. We will express this concept further in the following paragraphs.

Children are an important and potential target for marketers because children have spending power and can influence the purchasing habits of other family members (Buckingham, 2000; Oates, Blades, Gunter, & Don, 2003) . This trend has increased over time (Calvert, 2008). On the one hand, from new car purchase, restaurant selections to entertainment choices, many parents will ask their children's opinions. For these reasons, to influence children is to influence the entire family's

purchase decisions. That is indirect purchase. On the other hand, both parents are busy at work or to divorce, they are paying out more in pocket money to make up for their absence (Oates et al., 2003; Summerskill, 2001). So we could find a lot of children in the bookstore, toy store and snack bar near school .That is direct purchase. No matter indirect purchase or direct purchase of children, marketers could not ignore the consumption power.

Self-designed products such as shoes, T-shirts, bags, and so on always provide a variety of a variety of colors for customers to choose and the process of design is interesting. Therefore, it can attract many children to participant in the activities. We could see this kind of merchandise in department stores, scenic areas, or internet. If the individual may design their own unique product, it is more likely they would desire to get it. In addition, the author had conducted an unofficial survey with children and found that children are more interested in self-designed product than in finished product. As a result, the purpose of this paper is going to explore the relationship between the self-designed product and children, and try to find out the other factors which may affect the evaluation of the children for self-designed products, in order to help marketers understand the children's market.

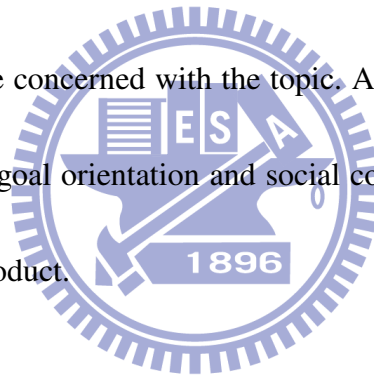
## 1.2 Research Objectives

Self-design is also called “adaptive customization,” “co-design,” and “user design”. It allows consumers to select module and then select the desired accessories or colors. However, some companies think as long as consumers can make a choice, it will be able to enhance their satisfaction. In fact, the success of self-design systems depends on a lot of factors. Dahl & Moreau (2007) Personal accomplishment is a key factor which was achieved by satisfying the needs of both autonomy and competence.

As mass customization becomes an increasingly popular commercial strategy, it is important to recognize the determinants of strategy success. We think social comparison is a key factor. Actually, life provides an endless stream of social comparison information, no matter we are flipping through a magazine, overhearing a conversation (Mussweiler, Ruter, & Epstude, 2004), or get a ranking. In the children’s world, they particularly like comparison, and always say, for example, “His academic performance is better than mine.”, “I have more toys than he.” Research indicates that if individuals compare with better-off others (upward comparison), they may show negative affection (Pleban & Tesser, 1981) and frustration with their outcomes (Martin, 1986). In contrast, if individuals compare with worse-off others, they may show positive affection and enhancement of self-esteem (Wills, 1981). Thus, we

propose children see self-designed products as a creative task, and their evaluation of their own work will be affected by comparison.

In addition, children will adopt a goal orientation to do the task. When children do one thing, some may want to perform better than others or get other people's praise; some may want to learn new skill or just enjoy the process. Considerable research find different goal orientations have different effects, including interest (Elliot & Harackiewicz, 1994), learning strategy (Ames & Archer), and so on. Whether marketers can influence the buying power of children through manipulating the goal orientation? Few studies are concerned with the topic. As a result, the purpose of our study was to examine how goal orientation and social comparison affected children's evaluation of self-design product.



### 1.3 Research Process

The research flow is as followings:

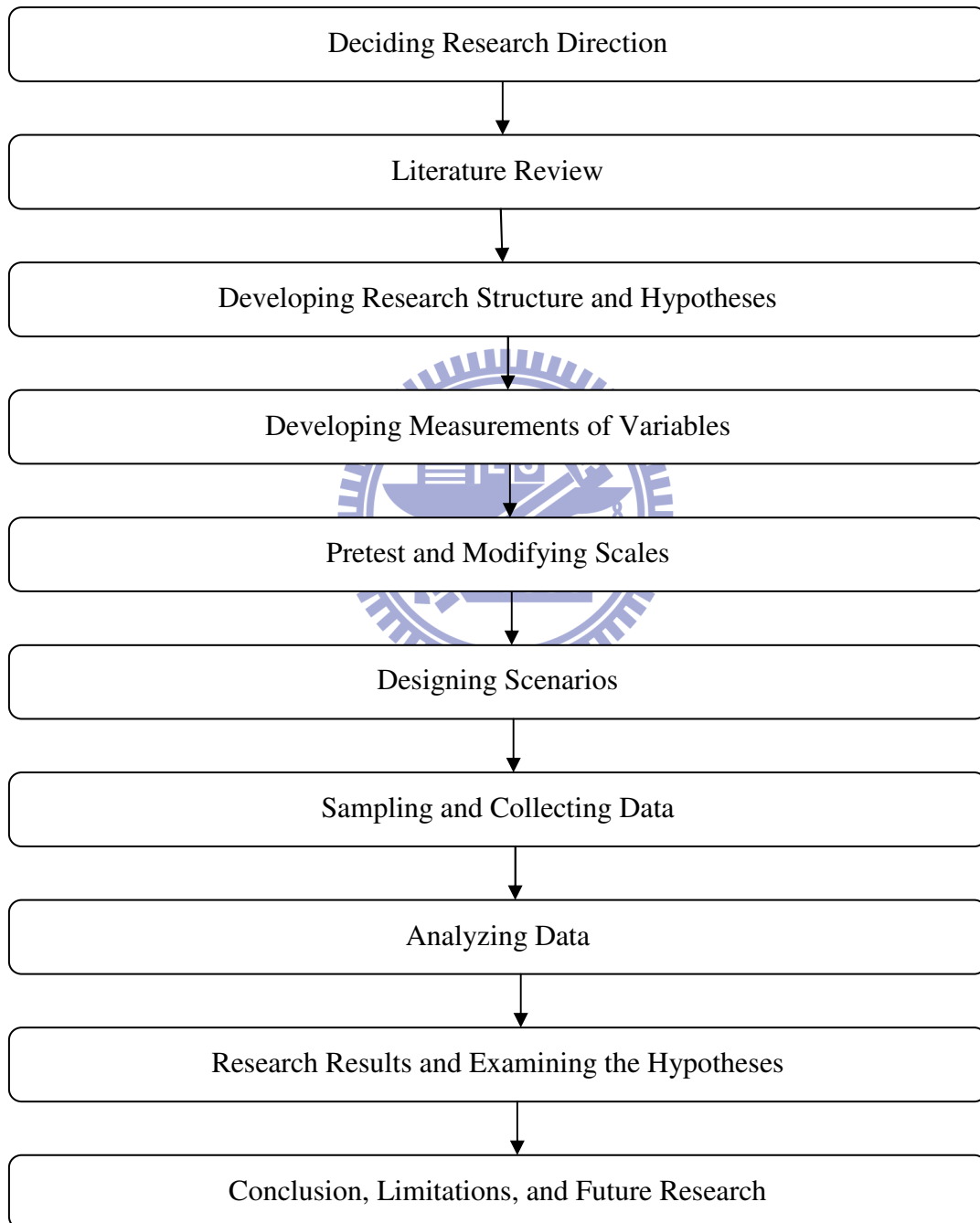


Figure 1 **Research Flow**

## CHAPTER 2 LITERATURE REVIEW

### 2.1 Research Framework

The purpose of the research is to examine how goal orientation and social comparison combine to affect the evaluation of self-designed product. The subjects are around 10~11 years old children. Figure 2 is the main conceptual model in this study, and those variables will be discussed in the following literature reviews.

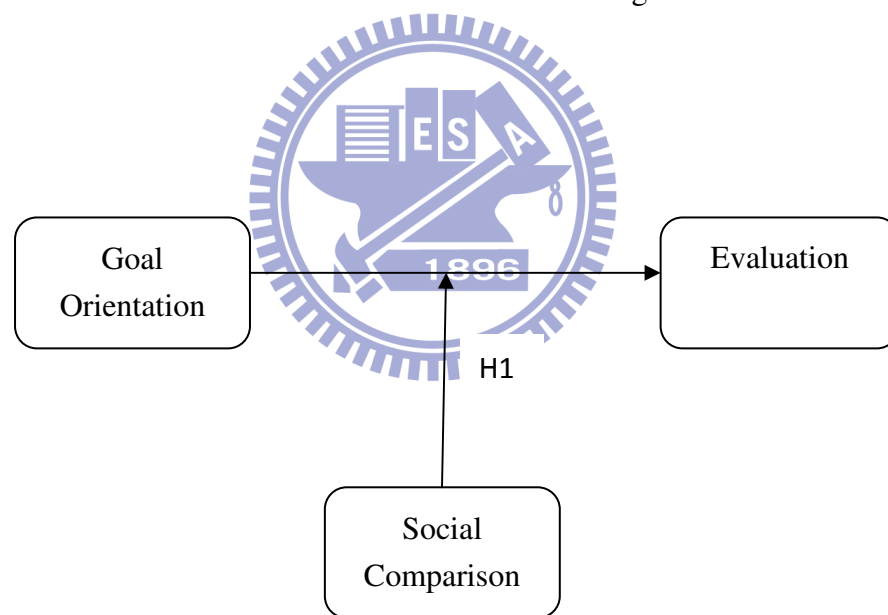


Figure 2 **Research Framework**

### 2.2 Goal Orientation

*Achievement goal theory* proposes that students' motivation and

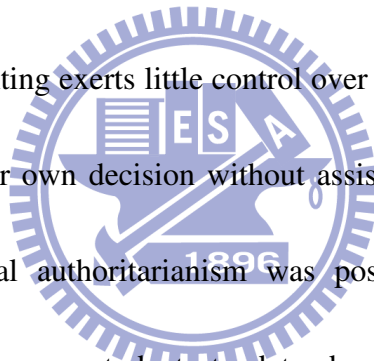


achievement-related behaviors can be understood by considering the reasons or purposes they adopt while engaged in task (Ames, 1992; Dweck & Leggett, 1988; Wolters, 2004). It also provides that the goal structure (the type of achievement goal) of an environment might affect students' motivation, and achievement within that setting (Ames & Archer, 1988). Weiner (1985) suggests achievement goal concerns the purposes of achievement behavior, and defines an integrated pattern of beliefs as well as the affect that produces the intentions of behavior.

In the past literature, two contrasting achievement goal constructs have received the most attention. It examined the effect of different goal orientation on affection, cognition, and motivation. Dweck and Leggett (1988) compared performance and learning goals; Ames (1984) and Butler (1992) have differentiated ability and mastery goals, McWhaw and Abrami (2001) have contrasted learning goal with extrinsic goal. Conceptually, learning and mastery goal can be the same construct, which emphasis on the development of skill, face to challenge, or competence relative to the task and one's past performance, whereas performance, ability (which presented the task as a test of ability), and extrinsic goal can be the same construct, which concerned with proving their ability to others, getting rewards, or avoiding negative judgments of their competence (Ames, 1992).

Even though individual differences have been described as representing forms of

“approach tendencies” (Nicholls et al., 1989), they are elicited by different environmental or instructional demand and cause individual qualitatively different motivational patterns (Ames, 1992). Gonzalez et al. (2002) studied the relationship between high school students’ goal orientations and parenting styles. According to Baumrind’s study, they divided the parenting style in three types: (1) authoritarian; (2) authoritative; (3) permissive. Authoritarian parenting emphasizes on rules, children should be punished for making mistakes or disobedience. Authoritative parents communicate with children rather than emphasize strict obedience, and encourage autonomy. Permissive parenting exerts little control over their children’s behavior and leave children to make their own decision without assistance. The following results were obtained: (1) Parental authoritarianism was positively related to students’ performance goal orientations as students tend to draw attention on proving their ability to avoid punishment. (2) Students from authoritative home were positively related to mastery goal orientation, because they concerned with improving ability and attaining personal mastery in the parenting styles. (3) Permissive parenting was positively correlated with performance goal orientations as students may not have the ability to internalize a sense of structure and control necessary to adopt a mastery goal orientation when parents don’t establish realistic boundaries and expectations. (Gonzalez et al., 2002).



Students' goal orientation will be also affected by classroom environment or teacher's teaching methods. Students will use more learning strategies when they perceived their classes as having a predominantly mastery goal orientation rather than performance orientation (Ames & Archer, 1988). Meerce (1991) found that teachers who emphasized the intrinsic value of learning had students who adopted a mastery goal orientation. On the contrary, teachers who focused on the use of grades had students who did not adopt a mastery goal orientation. In addition to these studies on goals are elicited by different source, considerable research link goal orientation to the effect on intrinsic motivation, interest, or learning activities. Butler (1987) suggest individuals who adopt a performance(extrinsic) goal will feel anxiety and pressure from evaluation of others, it will decrease individual's intrinsic motivation (Amabile, 1979; Judith et al., 1984). On the other hand, students who adopt an intrinsic (mastery) goal orientation will have preference for challenge, persistence, promote task involvement, and will increase the intrinsic motivation. We should notice that the definition of intrinsic motivation differs from intrinsic (mastery, learning) goal orientation in that the former puts emphasis on whether an individual has freely undertaken to do a task while the latter does not (Pintrich & Schrauben, 1992). Theorists in the intrinsic motivation domain have placed and mastery at the heart of intrinsic motivation, proposing that interest in an activity derives from the opportunity

it provides to effectively master or control the environment (White, 1959). To take a simple example, a student may take a music course to fulfill the requirement of an undergraduate degree, in this situation, they may not be intrinsically motivated to do so. Nevertheless, he/she may study hard, and keep learning it with a goal of developing new skill and understanding, which is what we mean by intrinsic (mastery, learning) goal.

So far the study of goal orientation has many classification methods. In the current study, we use learning goal orientation and extrinsic goal orientation to discuss. Pintrich and Schrauben (1992) defined learning goal orientation as a focus on mastery, learning, challenge, or curiosity. We need to mention here only the parts of learning new skills and preference for challenge. On the contrary, the definition of extrinsic goal is emphasis on grades, rewards, or approval from others. Receiving a reward is the focus of our discussions. We also add the grade and approval from others to help experimental design.

### **2.3 Social Comparison**

Social comparison theory has evolved considerably since Festinger(1954) originally proposed it. The basic definition is human have a drive to evaluate their opinions and abilities. As lack of external information, individuals will compare

themselves with other people. Many psychological phenomena are influenced by social comparison, including academic skills (Gibbons, Benbow, & Gerrard, 1994), attractiveness (Richins, 1991), self-designed products (Moreau & Herd, 2009) and so on. Through the process of comparison, individuals could evaluate whether their behavior is correct or not, and increase the accuracy of judgment. According to Klein (1997) ,objective standards are not enough, it is necessary to know performance of others so that we could understand our own level. Festinger (1954) advanced similarity hypothesis that individual most likely to compare with the person who has similar characteristics and attributes, such as best friend (Mussweiler & Ruter, 2003). Jones & Gerard (1967) called the group that people compare with is “co-oriented peer”



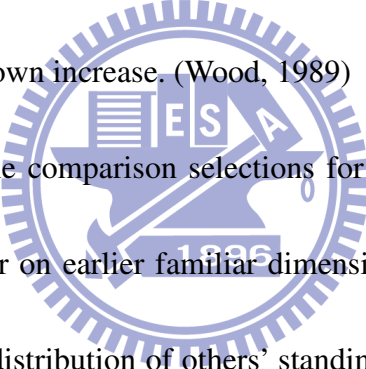
### **2.3.1 The Motive for Social Comparison**

Actually, individuals not prefer to compare themselves with similar others in all situation. Traditionally, different directions of comparison have been linked to different motivational states. Wood (1989) studied the literature and divided the social comparison motivation into self-evaluation, self-improvement and self-enhancement. The following sections demonstrate the three motivations for social comparison.

#### **(1) Self-Evaluation**

The purpose of self-evaluation is self-understand and self-defining. When

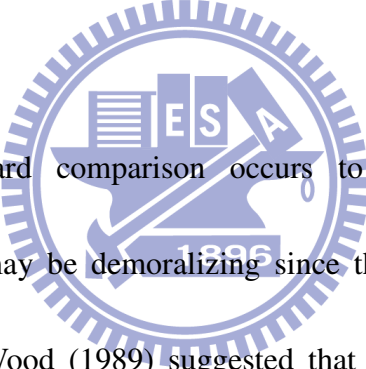
individuals want to understand their own ability, they tend to compare themselves with others who have about the same level of ability. In the rank-order study (Wood, 1989), the researcher provided a false transcript, and told the subject that his performance is on the middle position. The subjects had an opportunity to select one member of all participants and get his/her grade. The result showed that most subjects selected the person who is also on the middle position. This is similar to the central proposition of Festinger's theory "similarity hypothesis," The tendency to compare oneself with some other specific person decreases as the difference between his[or her] opinion or ability and one's own increase. (Wood, 1989)



Moreover, studies of the comparison selections for self-evaluation indicate that on unfamiliar dimensions, or on earlier familiar dimensions in a new social context, one will prefer to learn the distribution of others' standings, because knowing other's specific score may have little help (Wheeler, 1969). As individuals become familiar with the dimension, their comparison choices change. That is, a man who has a high capacity tends to choose a task that will discriminate between high-ability levels; a man who has a low capacity tends to choose a task that will discriminate between low-ability levels. All of this amounts to saying that people prefer to compete with others who have the same level of ability (Wood, 1989).

## (2) Self-Improvement

Humans have a drive to evaluate their opinions and ability. Besides, they also strive to improve themselves. There is evidence that people with high motivation, high competitiveness, and high ambition are especially likely to make upward comparisons (Matthews, 1983). Even when they compare themselves with similar others, they still choose those who are close but a little better than their own in the rank order rather than worse than their own (Wheeler, 1969). If a person measures himself against these successful individual, his self-evaluative comparisons may ultimately lead to self-improvement, and it could help them progress or be inspired by their comparison object.



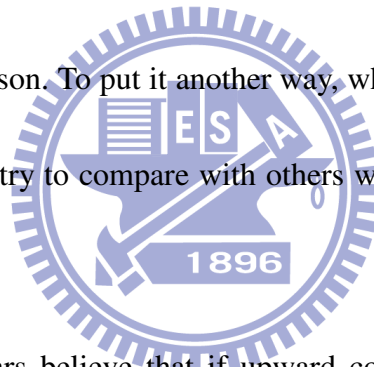
However, when upward comparison occurs to fulfill the motivation of self-improvement, people may be demoralizing since they are forced to their own inferiority (Wood, 1989). Wood (1989) suggested that surrounding dimensions are important not only in serving one's comparison goal but in determining the impact of comparisons offered by the environment. When similar others are competitors, individuals in upward comparison will feel threatened and aversive, but when their relationship is not a competition, the superior performance of comparison people is an inspiration for the individuals (Morse, 1970). Under competitive conditions, put it briefly, people tend to avoid comparisons with superiors.

Moreau and Herd's study (2009) is worth a mention. They examine the effect of

social comparison on the evaluation of self-designed product. The result showed that if consumers are prompted to process defensively or have the opportunity to repair their threatened self-regard by completely engaging in a task, the negative evaluation could be reduced.

### (3) Self-Enhancement

Another motivation of social comparison is self-enhancement or protection of self-esteem. The best way to fulfill the self-enhancement is to make downward comparison, which means that people could get the superiority and achievement through downward comparison. To put it another way, when people want to have own more confidence, they will try to compare with others whose ability worse than their own.

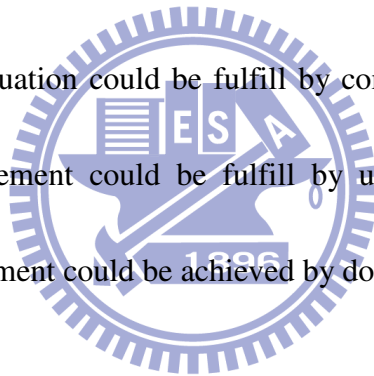


However, some scholars believe that if upward comparison does not result in negative self-evaluations, people can get a chance to self-enhance (Collins, 1996). Therefore, what direction of social comparison is most effective in self-enhancement? Buunk, et al. (1990) suggested it depends on situations. In normal situations (such as the evaluation of an ongoing marriage), people in upward comparisons feel more threatened because they are reminded that how poorly they are doing, whereas in stressful situation (such as getting cancer), seeing better example may encouraging and inspiring.



Previous studies using comparative rating measures have pointed out that when individuals have unpleasant characteristics, like no friends or scares, they may rate others as similar, that is, as also having these difficulties or bad situation (Suls & Wan, 1987). On the contrary, people on desirable dimension tend to rate themselves as superior to others or as unique in their superiority. For example, when participant say that they donate to orphans regularly, they would estimate that few others would do the same, so they felt they are outstanding than others (Wood, 1989).

It should be concluded, from what has been said above, that in general situation, the motivation for self-evaluation could be fulfill by comparing the similar one, the motivation for self-improvement could be fulfill by upward comparison, and the motivation for self-enhancement could be achieved by downward comparison.



### **2.3.2 Effect of Social Comparison**

Festinger (1954) notes that feelings of failure and inadequacy can result from comparison with others whose abilities are superior, and it is the effect of social comparison. Now we consider the subject from satisfaction point of view (Richins, 1991). Satisfaction refers to an evaluation of some characteristic, person, experience, relationship, or other object, and it could result from a conscious or unconscious comparison. There is difference between individual performance and standard of comparison, and the larger the negative discrepancy, the larger the dissatisfaction,

whereas when performance equals or exceeds standard of comparison, satisfaction results. As a result, in most situations, people can get lower satisfaction when they make upward comparison, but get higher satisfaction when they make downward comparison (Buunk et al., 1990).

## 2.4 Hypotheses

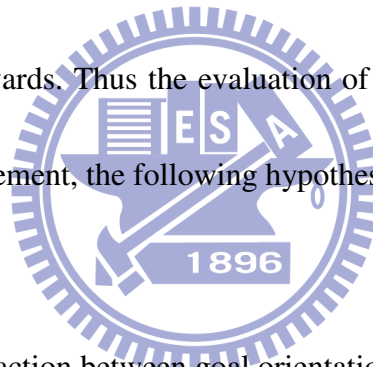
We choose children as our subjects. From the marketing point of view, the strategy is different between children and adults. Children learn to be a consumer by a variety of ways such as parents, peers, teachers, and mass media. Moreover, they are easily influenced by others and external environment because they are still developing. Hsieh, Chiu and Lin (2006) explored the communication structures and intergenerational influences on children's brand attitude of fathers and mothers respectively. The results report that mother with concept-orientation and father with socio-orientation obviously influence their children's brand attitude. What the passage makes clear at once is that perhaps we could use some strategy to influence the children's mind and further interest in the products.

When children engage in a task, they will adopt a goal orientation. If we encourage children to adopt an extrinsic goal, they will hope their performance better than others, get high score, and expect to be rewarded. Therefore, they will have

motivation for self-enhancement. In the situation, exposure to better-off others may lead feelings of relative deprivation and dissatisfaction with their own outcome (Testa & Major, 1990). However, if we encourage children to adopt a learning goal, learning skill and face to difficulty is relative important to them. Therefore, exposure to better-off may cause little affective distress.

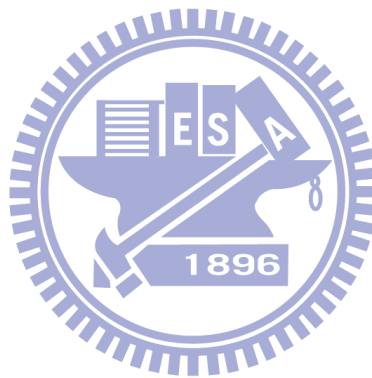
Nevertheless, exposure to worse-off others may result in positive affective consequences, especially for children who are encouraged to adopt an extrinsic goal orientation. They could satisfy their need for self-enhancement, and think more opportunities to get the rewards. Thus the evaluation of their outcome will decrease.

According to the above statement, the following hypotheses were formulated:



- H1: There is interaction between goal orientation and social comparison.
  - H1a: In upward comparison, children who are encouraged to adopt a learning goal orientation will have higher evaluation for self-designed product than students who are encouraged to adopt an extrinsic goal orientation.
  - H1b: In downward comparison, children who are encouraged to adopt an

extrinsic goal orientation have higher evaluation for self-designed product than children who are encouraged to adopt a learning goal orientation.

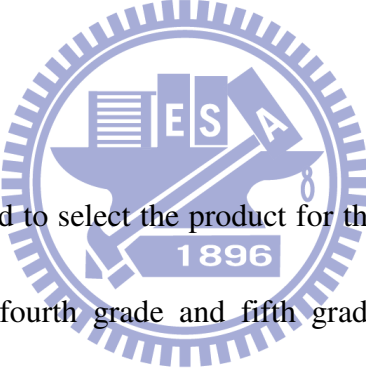


## CHAPTER 3 METHODOLOGY

### 3.1 Overview

The investigation was composed of two studies: the first study was pretest for the decision of social comparison pictures; the second study was the main investigation to test the hypothesis. The result of the analysis would be examined more in-depth in Chapter 4.

### 3.2 Stimulus



Several criteria were used to select the product for this study: (a) relevance to the participant population (the fourth grade and fifth grade students), (b) there is no difference between boys and girls, (c) customization dimensions (products that offered aesthetic but not functional customization opportunities were considered (such as DELL that provide different accessories choices to consumers)) (d) most of consumers are high involved in its purchasing process. Customizing T-shirt met all four criteria. In addition, we could find that there many websites offering custom service for clothing or accessories and easy to use, like <http://www.customink.com/> and <http://www.converse.com/>. Therefore, the author selected customizing T-shirt as a stimulus. We told the subjects that they can design their favored pictures on the T-shirt,

and the style of the T-shirt was controlled as the most common one.

To facilitate this experiment, we chose an easy flash provided on the webpage: <http://www.picassohead.com> (see Appendix 4), which was developed by Ruder Finn Interactive Co., as the tool for the participators to design pictures on the T-shirts.

### **3.3 Pretest on social comparison pictures**

This experiment was designed to investigate the interactive effects of task-specific goals and social comparison on evaluation for self-design product. The direction of the social comparison is manipulated by different aesthetic feeling (nice vs. ugly). Therefore, it's important to decide the social comparison pictures. The selection principle of the upward comparison is perceived nice and difficult; downward comparison is ugly.

At first, we picked according to our own view 16 nice pictures and 12 ugly pictures from the gallery, and conducted a survey to 90 students of fourth grade in elementary school, Hsinchu. 30 students saw the 16 nice pictures and the other 30 students saw 12 ugly pictures. They rated their aesthetic feeling on a seven-point Likert – type scale (1=strongly disagree; 7=strongly agree). The remaining group saw 16 nice pictures but rated difficulty they perceived (seven-point Likert – type scale; 1=very difficult, 7=very simple). Finally, we calculated the mean, both high score

group and the most difficult one in the 16 nice pictures as the upward comparison stimulus ( $Mean_{(agree)}=5.7; Mean_{(difficulty)}=5.44$ ), and the lowest score one in the 12 ugly pictures as the downward comparison one ( $Mean_{(agree)}=3.5$ ).

**Table 1 Cells of Experimental Design**

		Social comparison	
		Upward	Downward
Goal orientation	Learning goal	A	B
	Extrinsic goal	C	D

### 3.4 Experimental Design and Subjects

A 2X2 factorial experiment with 30 subjects per cell as conducted (Table 1), which consisted of two level of goal orientation (learning goal, extrinsic goal), and two level of social comparison (upward, downward). The dependent variables which we are interested in were evaluation, outcome satisfaction, and task enjoyment. I would like to focus attention on evaluation for self-designed products, therefore, the results of outcome satisfaction and task enjoyment will be showed in the appendix 1.

If the subjects cannot understand the meaning of items, they cannot express their

feeling accurately. In previous study, Markey, et al. (2002) invited preadolescents (10~12 years old) to rate their own personality and the rearing environment through a questionnaire. At the same time, researchers also invited mothers to rate their children's personalities. The results show that the answer between children and parents is highly correlated. It means that children who are 10~12 years old have the ability to understand the meaning of items and further express their feelings. Besides, the author discussed with the elementary teachers. They think that sixth grade students are the oldest at school so that they are mature and their behavior may be different from children. Therefore, we exclude them as subjects. For the reason given above, we selected the fourth and fifth grade students as subjects.

164 students from six classes of 4 and 5 grade in one Elementary School in Jubei City, Hsinchu Country, participated in this study, and 108 of them have successfully completed the experiment. Subjects were randomly selected from every class by teachers, and randomly assigned to one of four experimental conditions. There are 55 boys and 53 girls.

### **3.5 Procedure**

The experimental laboratory was set up in school computer classroom. In order to avoid subjects watching each other, only ten subjects was appointed at one time and



spaced to seat. Every group was randomly selected to each cell.

On entering the computer classroom, children were asked to imagine that they entered a creative clothing shop to customize a T-shirt and received information depending on which condition they were assigned to adopt either a learning or extrinsic goal orientation. Subjects assigned learning goals were told the following:

In today's session you will receive a challenge to design your own clothes.

Extrinsic goal subjects were instructed as follows:



In today's session you will design your own clothes, if you perform well, you have the chance to get the prize.

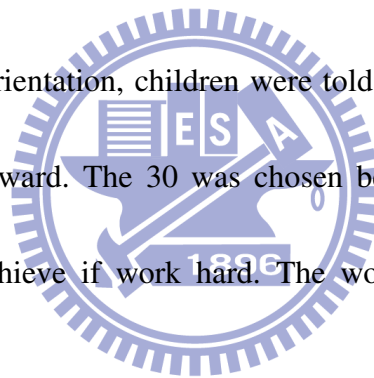
All subjects were then instructed to learn how to use the webpage (In order to ensure children could be familiar with the operation of the webpage, researcher produced 3-minute teaching guideline.). Afterward researcher does the goal manipulation.

In the learning goal orientation, children were encouraged to approach the task of design with a focus on learning and challenging. The wording for the learning goal

orientation was based on similar wording given to students in an experimental study conducted by Graham & Golan (1991) and Elliot & Harackiewicz (1994). The wording for the learning goal orientation was as follows:

When you start designing clothes patterns, try to see this task as a challenge, learning the skill of design picture through the webpage and develop your skill on creativity ability.

In the extrinsic goal orientation, children were told that if they are the top30 of 150, they will receive a reward. The 30 was chosen because it is the number that children think they can achieve if work hard. The wording for the extrinsic goal orientation was as follows:



Upon completion of your design work, we will invite an art teacher from other school for appraisal. There are 150 students participating in design activities. If your score in all of the top 30, you can receive a reward

All subjects were then instructed to use the *mpicassohead* for designing what picture they like. Time was limited in 15 minutes.

After finished designing their T-shirt, subjects were exposed to the pictures of

social comparison manipulation. Half of the subjects of learning (extrinsic) goal were provided with a nice picture, and the other half were provided with an ugly one. All for conditions heard the following:

Now we give you a picture of another classmate who also participated in the activity. You can look at it.

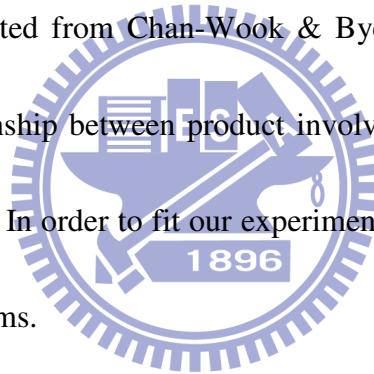
Subjects subsequently completed a questionnaire consisting of a manipulation check, as well as items regarding the evaluation of self-designed products, their outcome satisfaction, and task enjoyment. The entire study took approximately 30 minutes to complete. A week after the experiment, researcher carried out the last part of this study, all subjects were self-reported their ability about aesthetics.

### **3.6 Measurement**

The questionnaires in the paper were mainly modified from previous research for more suitable in the customization context. After the author and the professors discussion, all items were translated into Chinese (see Appendix 3) and measured using a seven-point Likert-type scale (1=strong disagree; 7=strong agree).

### **3.6.1 Measures of Covariate (self-assessed ability)**

Difference in prior knowledge of design which is self-assessed by subject will have different impact on evaluation. In order to control this possible effect caused by individual differences, the self-assessed ability is measured as a covariate. Previous research pointed out that we could distinguish subjective knowledge from objective knowledge conceptually (Brucks, 1985). In our study, we concentrate on subjective knowledge which could be assessed by self-assessed measures (Johnson; & Russo, 1984). The scale was adapted from Chan-Wook & Byeong-Joon's (Park & Moon, 2003) study for the relationship between product involvement and prior knowledge, which included three items. In order to fit our experiment, it was necessary to modify some descriptions of the items.



Scale Items:

1. Compared to other people, I think that my ability about painting is excellent.
2. I think I can make an art work which satisfies me.
3. If there are many pictures, I can identify whether they are good-looking or not.

### **3.6.2 Measure of Dependent Variable (evaluation)**

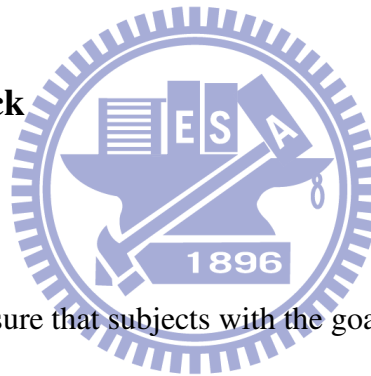
Subjects' evaluations of their self-designed T-shirt were measured using six items come from Moreau and Herd (2009) .

Scale Items:

1. I think my T-shirt was well-designed.
2. I think the self-designed T-shirt was stylish.
3. I think the self-designed T-shirt was attractive to others.
4. My self-designed T-shirt closed to my ideal.
5. I think I would enjoy using it.
6. I think that other students on campus would like it.

### **3.7 Manipulation Check**

#### **3.7.1 Goal Orientation**



We use six items to ensure that subjects with the goal we manipulated.

Scale Items:

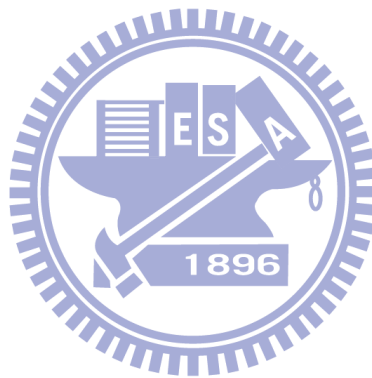
1. Have the opportunity to win a prize is the beginning of my main reasons for design.
2. Have the opportunity to win a prize is my main driving force during the design process.
3. Beginning of the design because I think it's a challenge in the process.
4. I did it because I want to learn.
5. Learning is the focus of this activity.

6. I enjoy challenging task of self-designed T-shirt no matter how others think.

### **3.7.2 Social comparison**

In each goal orientation, subjects exposed social comparison picture either upward or downward. To ensure they had involved in different comparison situation, subjects had to answer the following questions:

1. I think the classmate's design looks better than my design.
2. I think people will prefer this T-shirt that is design by another classmate.

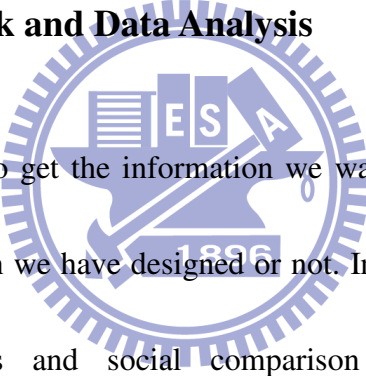


## CHAPTER 4 RESULTS

### 4.1 Participants

There are 164 fourth and fifth students participated in this experience, and 108 of them have successfully completed the experiment. Of the total of 108 subjects, 51% were boys and 49% were girls. Fourth and fifth grade students each accounted for 50%.

### 4.2 Manipulation Check and Data Analysis



Using the experience to get the information we want require to check whether the subjects felt the situation we have designed or not. In this study, we designed the different goal orientations and social comparison situation. Therefore, the manipulation check was performed to make sure participants in each situation agree with the scenario. The results of the manipulation check are as follows.

#### 4.2.1 Manipulation Check of goal orientation

When subjects answered the questionnaires, they need to confirm what the goal orientation of this design behavior under the scenario. There are six items, two of them were required to examine whether they wanted a gift, which represented the subjects were involved in the extrinsic goal orientation. The other four items were to

examine the learning goal orientation. The reliabilities are above .7 on the two types of goal orientation manipulation checks (see Table 2).

Table 2 **Manipulation Check of Goal Orientation**

<b>Factors</b>	<b>Cronbach's <math>\alpha</math></b>	<b>N of Items</b>
Extrinsic goal manipulation	0.907	2
Learning goal manipulation	0.869	4

In the learning goal orientation scenario, we hope subjects are interested in learning new skills and prefer challenging work instead of getting rewards. Therefore, high scores in the learning goal manipulation questions should be filled but low scores in the extrinsic goal manipulation questions. On the other hand, subjects in the extrinsic goal orientation scenario should look forward to receiving reward, so they should fill high scores in the extrinsic goal manipulation questions. However, this is especially noteworthy in the case of extrinsic goal: even though they want to receive a reward, they may also want to learn new skill or think it as a challenge (because learning goal orientation might originally existed in children's learning experience) so that not filling low scores in the learning goal manipulation questions. Thus, we must



adjust the way of sample selection.

Table 3 Subjects in each scenario

Scenario			Subjects
Learning Goal	X	Upward Comparison	36
Learning Goal	X	Downward Comparison	37
Extrinsic Goal	X	Upward Comparison	46
Extrinsic Goal	X	Downward Comparison	45
Total			164

Table 4 The First Way of Selection Sample

Scenario	Condition	Successful subjects
Learning Goal X Upward Comparison	1. $E1 \sim E2 \leq 4$ 2. $L1 \sim L4 > 4$	19
Learning Goal X Downward Comparison	1. $E1 \sim E2 \leq 4$ 2. $L1 \sim L4 > 4$	18
Extrinsic Goal X Upward Comparison	1. $E1 \sim E2 > 4$ 2. $L1 \sim L4 \leq 4$	3
Extrinsic Goal X Downward Comparison	1. $E1 \sim E2 > 4$ 2. $L1 \sim L4 \leq 4$	3

\* E1 : The first question of manipulation check of extrinsic goal. L1 : The first question of manipulation check of learning goal. And so on.

Table 5 The Second Way of Selection Sample

Scenario	Condition	Successful subjects
Learning Goal X Upward Comparison	1. $E1 \sim E2 < 4$ 2. $Mean(L1 \sim L4) > 4$	20
Learning Goal X Downward Comparison	1. $E1 \sim E2 < 4$ 2. $Mean(L1 \sim L4) > 4$	20
Extrinsic Goal X Upward Comparison	1. $E1 \sim E2 \geq 4$ 2. $Mean(E1 \sim E2) > Mean(L1 \sim L4)$	30
Extrinsic Goal X Downward Comparison	1. $E1 \sim E2 \geq 4$ 2. $Mean(E1 \sim E2) > Mean(L1 \sim L4)$	29

\*  $Mean(E1 \sim E2) = (E1 + E2) / 2$ ,  $Mean(L1 \sim L4) = (L1 + L2 + L3 + L4) / 4$

Table 6 The Third Way of Selection Sample

Scenario	Condition	Successful subjects
Learning Goal X Upward Comparison	1. $Mean(E1 \sim E2) \leq 4$ 2. $Mean(L1 \sim L4) > 4$	27
Learning Goal X Downward Comparison	1. $Mean(E1 \sim E2) \leq 4$ 2. $Mean(L1 \sim L4) > 4$	31
Extrinsic Goal X Upward Comparison	1. $Mean(E1 \sim E2) > 4$ 2. $Mean(E1 \sim E2) > Mean(L1 \sim L4)$ 3. $Mean(L1 \sim L4) < 5$	25
Extrinsic Goal X Downward Comparison	1. $Mean(E1 \sim E2) > 4$ 2. $Mean(E1 \sim E2) > Mean(L1 \sim L4)$ 3. $Mean(L1 \sim L4) < 5$	25

\* Because we want to exclude the people with both high learning goal and high extrinsic goal, we add to the condition 3 in the extrinsic goal condition.

These tables tell us that if we selected samples by observing each question, we were confronted by two difficulties. The first is uneven number of samples. The second is sample size too small. Therefore, we use the average score as the standard of sample selection (see table6).

#### **4.2.2 Manipulation Check of social comparison**

In the part, we used a two-item seven-point Liker Scale and examined with an independent-sample T-test. Two items were examined whether subjects think the social comparison pictures look better than their own. Cronbach's alpha for 0.897. We calculate the average. In case of upward comparison, scores higher than 4 is successful; in case of downward comparison, scores lower than 4 is successful. Afterward, we use t-test. Result showed that the upward comparison picture was significant higher than downward comparison ( $t=16.196$ ,  $p=0.000$ ). The results meant the manipulation of social comparison was successful. Results were listed on Table 7.

Table 7 Manipulation Check of Social Comparison

Comparison	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Upward	52	5.6346	.90269	16.196	.000
Downward	56	2.7679	.93402		

\* T-test was also used before samples selection, and significant. It means the manipulation method is feasible.

### 4.3 Reliability

To test the reliability of the evaluation asked in the research questionnaire, we have to calculate the value of Cronbach's alpha. The study was accepted as reliable and high internal consistency of item of the same factor if the alpha value was above 0.7. This study measured the construct of evaluation of self-designed product on a six-item seven-point scale. Cronbach's alpha for this scale was 0.912 and the value will decrease if any item delete. It also measured the self-assessed ability for aesthetics on a three-item seven-point scale. Cronbach's alpha for this scale was 0.662, less than 0.7. But, if we deleted the item 3, Cronbach's alpha will rise to 0.778. The result indicated the study were reliable.

Table 8 **Reliability Statistics**

Factors	Cronbach's alpha	N of Items
Self-Assessed Ability	0.778	2
Evaluation	0.912	6

#### 4.4 Validity

We conducted the factor analysis to examine the factorial validity of those scales. There are three dependent variables in my research: evaluation, outcome satisfaction, task enjoyment (see appendix 1). The KMO statistic was reported as 0.834, and the Bartlett's test of sphericity was significant ( $p < 0.001$ ), that showed the data was adequate for proceeding the factor analysis. We used the principal axis method for extraction and proceeded the direct oblimin rotation.

According to the result of the factor analysis in the Table 9, the first item of outcome satisfaction and the forth item of task enjoyment loaded the same component, and the other items of both outcome satisfaction and task enjoyment loaded the same component. To make sure the three variables, evaluation, outcome satisfaction and task enjoyment, we measured different concepts, the first item of outcome satisfaction

and the forth item of task enjoyment loaded the same component were deleted. Finally, items assigned to each dimension consistently have high factor loading (Table 10).

**Table 9 Factor Analysis**

	<b>Factor</b>		
	<b>1</b>	<b>2</b>	<b>3</b>
<b>TE2</b>	.968		
<b>TE3</b>	.962		
<b>TE1</b>	.906		
<b>OS3</b>	.759		
<b>OS2</b>	.690		
<b>EV1</b>		.898	
<b>EV2</b>		.872	
<b>EV6</b>		.829	
<b>EV5</b>		.812	
<b>EV3</b>		.794	
<b>EV4</b>		.791	
<b>TE4</b>			.924
<b>OS1</b>			.611

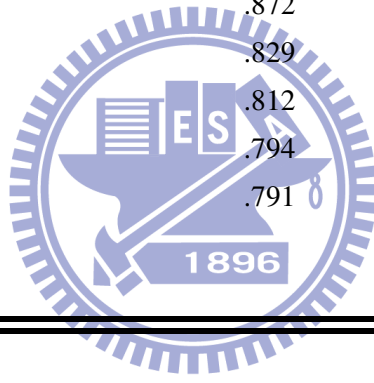


Table 10 Factor Analysis

	Factor		
	1	2	3
EV1	.894		
EV2	.861		
EV6	.835		
EV5	.806		
EV4	.801		
EV3	.795		
TE1		.918	
TE2		.911	
TE3		.870	
OS2			.911
OS3			.610

\* Extraction Method: Principal Axis Factoring.

\* Rotation Method: Oblimin with Kaiser Normalization

## 4.5 Hypothesis Testing

Table 11 Descriptive Statistics of Evaluation

	Goal Orientation					
	Learning Goal Orientation			Extrinsic Goal Orientation		
	Mean	Std. Deviation	N	Mean	Std. Deviation	N
Upward Comparison	4.45	1.19	27	4.17	1.34	25
Downward Comparison	5.05	1.39	31	5.67	1.01	25

Dependent Variable: Evaluation of Self-Design Product

Table 11 exhibited that mean values of evaluation in target group with downward comparison were all higher than with upward comparison respectively.

Two – way ANOVA (Table 11) was used to assess the effect of goal orientation and social comparison on evaluation. The value of self-assessed ability of aesthetics was taken as a covariate which could reduce the systematic error and increase the accuracy of experiment.

Table 12 **Summary of ANCOVA**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Cov(Ability)	1.500	1	1.500	0.961	0.32
Goal Orientation	0.684	1	0.684	0.438	0.509
Social Comparison	27.187	1	27.187	17.426	0.000**
Interaction	5.040	1	5.04	3.23	0.075*
Error	160.694	103	1.56		
Total	2725.278	108			

Dependent Variable: Evaluation of Self-Design Product

\*.P<0.1, \*\*.P<0.05



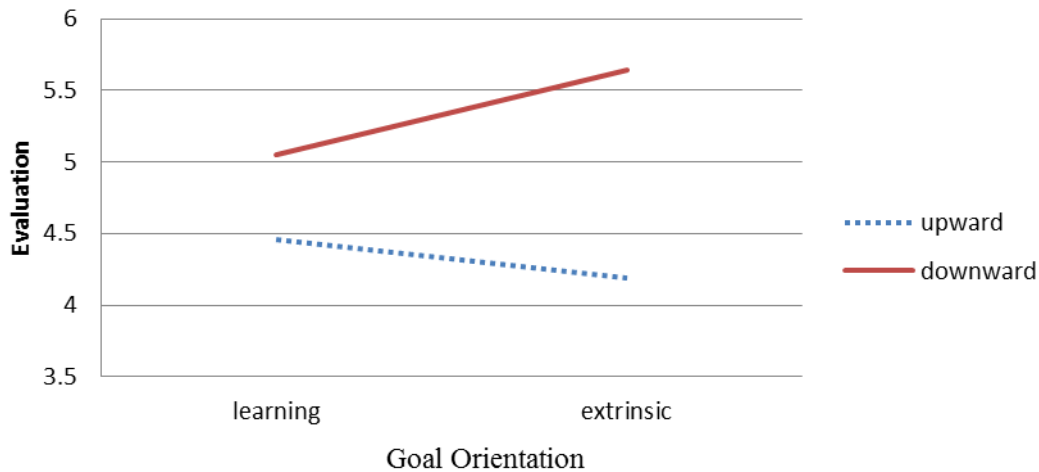


Figure 3 **Interaction between Goal Orientation and Social Comparison**

Table 12 told us that the main effect of goal orientation was not significant ( $F=0.438$ ,  $P=0.509$ ), but the main effect of social comparison was significant ( $F=17.426$ ,  $P=0.000$ ). The interaction between goal orientation and social comparison was a significant effect ( $F=3.23$ ,  $P=0.075$ ). It indicated that the difference of evaluation between upward and downward comparison condition in the extrinsic goal condition was larger than that in the learning goal condition (see Figure 3).

In order to examine the hypothesis 1a and 1b respectively, we conducted the least significant difference (LSD). In hypothesis 1a, we propose in upward comparison, children who are encouraged to adopt a learning goal orientation will have higher evaluation for self-designed product than students who are encouraged to adopt an extrinsic goal orientation. Result showed the evaluation mean is higher in learning goal than in extrinsic goal, but there is no significant difference between learning goal

and extrinsic goal in the upward comparison ( $p=0.347$ ). In hypothesis 1b, we propose in downward comparison, students who are encouraged to adopt an extrinsic goal orientation have higher evaluation for the self-designed product than students who are encouraged to adopt a learning goal orientation. Result showed there is significant difference between learning goal and extrinsic goal in the downward comparison as well as the mean is higher in extrinsic goal than in learning goal (see Table 13).

Table 13 **Pairwise Comparison**

Group(I)	Group(J)	Mean Difference(I-J)	Std. Error	Sig
1	2	-.581	.329	.081
	3	.274	.347	.430
	4	-1.175	.349	.001
2	1	.581	.329	.081
	3	.856	.336	.012
	4	-.594	.337	.080
3	1	-.274	.347	.430
	2	-.856	.336	.012
	3	-1.450	.356	.000
4	1	1.175	.349	.001
	2	.594	.337	.080
	3	1.450	.356	.000

- \* 1=learning goal/upward comparison
- 2=learning goal/downward comparison
- 3=extrinsic goal/upward comparison
- 4=extrinsic goal/ downward comparison

## CHAPTER 5 CONCLUSION

### 5.1 Discussion

We hypothesized that there is interaction between goal orientation and social comparison when the consumer evaluate their self-designed product. The result showed there is significant difference, and the interaction figure showed the difference of evaluation between upward and downward comparison condition in the extrinsic goal condition was larger than that in the learning goal condition (see Figure 3).

Main effect for goal orientation is not significant, that is, different goal orientations have no different effect on evaluation of self-designed product. Our results support Hung's (2007) conclusion that encouraging customer co-design would successful raise the satisfaction of a customized product. When consumers decided to engage in customization rather buy the finished product directly, they will pay extra work so that they may have the need to feel satisfied and enhance the evaluation of their choices to prove the sagacity of their own behavior or judgment (Hall & Dornan, 1988). Moreover, Dahl & Moreau (2007) find when consumers engage on creative activities with a sense of autonomy and competence, they can fulfill the motivation for personal accomplishment. As a result, despite children design their T-shirt with

different goal, they might still satisfy the sense of autonomy and competence, and express higher desire to own it. However, in the case of social comparison, upward comparison may reduce the sense of competence, but downward comparison may increase it. As a result, main effect for social comparison is significant. The evaluation in downward comparison condition is higher than in upward comparison condition. The result also consists with many studies over the past (Matthews, 1983; Buunk, et al., 1990).

We hypothesize that in upward comparison, children who are encouraged to adopt a learning goal orientation will have higher evaluation than those who are encouraged to adopt an extrinsic goal orientation. Result showed not significant. We could conduct Wheeler's (1969) research to explain. Wheeler indicated that people do not view upward comparison as a threat to self-esteem but may see it as an opportunity to self-enhancement. Therefore, children who are encouraged to adopt an extrinsic goal orientation and were exposed to better-off others will think that even though they cannot receive the reward, they still could learn experience and could do better next time. Finally, their evaluation for self-designed T-shirts will not decrease a lot.

However, in downward comparison, students who are encouraged to adopt an extrinsic goal orientation have significant higher evaluation than students who are

encouraged to adopt a learning goal orientation. It supports our hypothesis. Children with extrinsic goal have the motivation for self-enhancement, and they can be fulfilled by downward comparison. Therefore, they will give the higher evaluation than those with learning goal.

## 5.2 Managerial Implications

There are more and more companies providing the customized service which usually charge higher prices. So, a question worth pursuing is that why consumers are willing to pay high premium for their self-designed products? In the research, we think the higher the evaluation, the higher the purchasing intention. At the same time, we have demonstrated that giving the extrinsic goal for the children and exposing them to worse-off others would induce higher product evaluation.

Because children's cognition is still developing, they may easily be affected by other people than the adults. As a result, when marketers want to promote a new self-designed product to children, they could encourage children to participate by winning a reward. However, it is not enough just by providing rewards. Social comparison has big influence on children. According to the results, not only provide rewards but expose to downward comparison example could increase children's

evaluation for the self-designed products. Marketer could display inferior work unintentionally after children finished their works. In the situation, children may think they had good performance and deem that they can get rewards, and then could produce high evaluation. Higher evaluation will induce higher repurchase intention. It's an efficient strategy to companies.

### **5.3 Limitations and Future Research**

There are some limitations that should be mentioned in the research. The first limitation is that the designed situations in scenarios could not comprise all situations in real world. Even though we design the experiment not just a survey, there are still a lot of interference factors. For example, company may provide some “examples” product when the children participate, or parents may accompany their child doing the self-designed activities and so on, which will affect the design process or the designer's mood.

The second limitation is time limit. Because we could not affect the students' class time, we have to limit the entire experimental time within 40 minutes and the design time within 15 minutes. For children, it may not have sufficient time to complete the satisfactory work.

Future research is also needed to understand the influences of social comparison

and goal orientation dynamics have on the evaluations of the customized product. In the experiment, we told the subjects that those whose performance ranked top 30 will win a reward. Cameron and Pierce's (1994) conclusion revealed that the offer of a reward was beneficial when tied to a set of standard. Thus, it may examine the effect of different types of rewards.

After the experiment, some children told the experimenter that they want to design their T-shirt again and they believe they will do better next time. It means even though the evaluation for self-designed T-shirt is low, the confidence of co-design still exist. There is room for further investigation. It may also examine the influence on confidence to co-design or the repurchase attention.

Finally, we will discuss the issue from the educational point of view. According to the figure 3, we found that the difference of evaluation between upward comparison and downward comparison in learning goal orientation is less than in extrinsic goal orientation. This means if a child is not good at design, he may depreciate himself in the case of upward comparison, especially for children who had extrinsic goal orientation. It will have bad impact on children's learning and development. As a result, in the position of education, we don't encourage external rewards. Future research should also examine how to raise children's evaluation for self-designed product under learning goal orientation.

## Reference

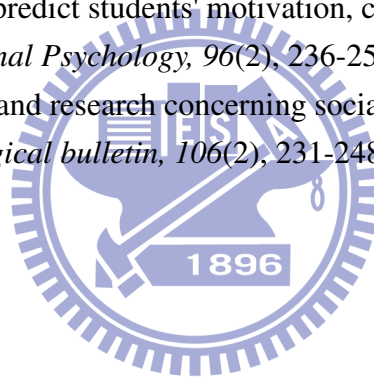
- Amabile, T. (1979). Effects of external evaluation on artistic creativity. *Journal of Personality and Social Psychology*, 37(2), 221-233.
- Ames, C. (1984). Competitive, cooperative, and individualistic goal structures: a cognitive-motivational analysis. *Research on Motivation in Education.1*, 177-207
- Ames, C. (1992). Classrooms: goals, structures, and student motivation. *Journal of Educational Psychology*, 84(3), 261-271.
- Ames, C., & Archer, J. (1988). Achievement goals in the classroom: students' learning strategies and motivation processes. *Journal of Educational Psychology*, 80(3), 260-267.
- Brucks, M. (1985). The effects of product class knowledge on information search behavior. *Journal of Consumer Research*, 12(1), 1-16.
- Buckingham. (2000). After the death of childhood: Growing up in the Age of Electronic Media. Cambridge: Polity Press
- Butler, R. (1987). Task-involving and ego-involving properties of evaluation: effects of different feedback conditions on motivational perceptions, interest, and performance. *Journal of Educational Psychology*, 79(4), 474-482.
- Butler, R. (1992). What young people want to know when: effects of mastery and ability goals on interest in different kinds of social comparisons. *Journal of Personality & Social Psychology*, 62(6), 934-943.
- Buunk, B. P., Collins, R. L., Taylor, S. E., Vanperen, N. W., & Dakof, G. A. (1990). The affective consequences of social comparison: either direction has its ups and downs. *Journal of Personality & Social Psychology*, 59(6), 1238-1249.
- Calvert, S. L. (2008). Children as consumers: advertising and marketing. *The Future of Children*, 18, 205-234.
- Collins, R. L. (1996). For better or worse: the impact of upward social comparison on self-evaluations. *Psychological Bulletin*, 119(1), 51-69.
- Da Silveira, G., Borenstein, D., & Fogliatto, F. S. (2001). Mass customization: literature review and research directions. *International Journal of Production Economics*, 72(1), 1-13.
- Dahl, D. W., & Moreau, C. P. (2007). Thinking inside the box: why consumers enjoy constrained creative experiences. *Journal of Marketing Research*, 44(3), 357-369.
- Deng, X., & Hutchinson, J. W. (2009). Aesthetic self-design: just do it Working paper, Wharton School, University of Pennsylvania, Philadelphia.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation



- and personality. *Psychological Review*, 95(2), 256-273.
- Elliot, A. J., & Harackiewicz, J. M. (1994). Goal setting, achievement orientation, and intrinsic motivation: a mediational analysis. *Journal of Personality and Social Psychology*, 66(5), 968-980.
- Festinger. (1954). A theory of social comparison processes. *Human Relations*. 7, 117-140
- Gibbons, F. X., Benbow, C. P., & Gerrard, M. (1994). From top dog to bottom half: social comparison strategies in response to poor performance. *Journal of Personality & Social Psychology*, 67(4), 638-652.
- Gonzalez, A. R., Doan Holbein, M. F., & Quilter, S. (2002). High school students' goal orientations and their relationship to perceived parenting styles. *Contemporary Educational Psychology*, 27(3), 450-470.
- Graham, S., & Golan, S. (1991). Motivational influences on cognition: task involvement, ego involvement, and depth of information processing. *Journal of Educational Psychology*, 83(2), 187-194.
- Hall, J. A., & Dornan, M. C. (1988). Meta-analysis of satisfaction with medical care: description of research domain and analysis of overall satisfaction levels. *Social science & medicine*, 27(6), 637-644
- Hsieh, Y.C., Chiu, H.C., & Lin, C.C. (2006). Family communication and parental influence on children's brand attitudes. *Journal of Business Research*, 59(10-11), 1079-1086.
- Hung. (2007). The effects of providing examples and customer participation on product satisfaction. Unpublished master thesis. National Chiao Tung University.
- Harackiewicz, J.M., Manderlink, G & Sansone, C. (1984). Rewarding pinball wizardry: effects of evaluation and cue value on intrinsic interest. *Journal of personality and social psychology*, 17(2), 287-300
- Johnson, E. J., & Russo, E. (1984). Product familiarity and learning new information. *Journal of Consumer Research*. 11(June), 542-550
- Klein, W. M. (1997). Objective standards are not enough: affective, self-evaluative, and behavioral responses to social comparison information. *Journal of Personality & Social Psychology*, 72(4), 763-774.
- Markey, P. M., Markey, C. N., Tinsley, B. J., & Ericksen, A. J. (2002). A preliminary validation of preadolescents' self-reports using the five-factor model of personality. *Journal of Research in Personality*, 36(2), 173-181.
- Martin, J. (1986). The tolerance of injustice. *Relative deprivation and social comparison: The Ontario symposium*, 4, 217-242
- Matthews, K.A., & Siegel, J.M. (1983). Type A behaviors for children, social

- comparison, and standards for self-evaluation. *Developmental psychology*, 19(1), 135-140.
- McWhaw, K., & Abrami, P. C. (2001). Student goal orientation and interest: effects on students' use of self-regulated learning strategies. *Contemporary Educational Psychology*, 26(3), 311-329.
- Meece, J. (1991). The classroom context and students' motivational goals. In M. Maehr & P. Pintrich(Eds.) *Advances in motivation and achievement*.7, 261-286
- Moreau, C. P., & Herd, K. B. (2009). To each his own? how comparisons with others influence consumers' evaluations of their self-designed products. *Journal of Consumer Research*, 36(5), 806-819.
- Morse, S., & Gergen, K. J. (1970). Social comparison, self-consistency, and the concept of self. *Journal of personality and social psychology* 16(1). 148-156.
- Mussweiler, T., & Ruter, K. (2003). What friends are for!! the use of routine standards in social comparison. *Journal of Personality & Social Psychology*, 85(3), 467-481.
- Mussweiler, T., Ruter, K., & Epstude, K. (2004). The man who wasn't there: subliminal social comparison standards influence self-evaluation. *Journal of Experimental Social Psychology*, 40(5), 689-696.
- Nicholls, J. G., Patashnick, M., Cheung, P. C., Thorikildsen, T. A., & Lauer, J. M. (1989). Can achievement motivation theory succeed with only one conception of success? *International perspectives on achievement and task motivation* 187-208
- Oates, C., Blades, M., Gunter, B., & Don, J. (2003). Children's understanding of television advertising: a qualitative approach. *Journal of Marketing Communications*, 9(2), 59.
- Park, C. W., & Moon, B. J. (2003). The relationship between product involvement and product knowledge: moderating roles of product type and product knowledge type. *Psychology & Marketing*, 20(11), 977-997.
- Pintrich, P. R., & Schrauben, B. (1992). Students' motivational beliefs and their cognitive engagement in classroom academic tasks. *Student Perceptions in the Classroom*, 149-183.
- Pleban, R., & Tesser, A. (1981). The effects of relevance and quality of another's performance on interpersonal closeness. *Social Psychology Quarterly*, 44(3), 278-285.
- Richins, M. L. (1991). Social comparison and the idealized images of advertising. *Journal of Consumer Research*, 18(1), 71-83.
- Suls, J., & Wan, C. K. (1987). In search of the false-uniqueness phenomenon: fear and

- estimates of social consensus. *Journal of Personality & Social Psychology*, 52(1), 211-217.
- Summerskill, B. (2001). Generation gimme. *The Observer*, 5.
- Testa, M., & Major, B. (1990). The impact of social comparisons after failure: the moderating effects of perceived control. *Basic & Applied Social Psychology*, 11(2), 205-218.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, 92(4), 548-573.
- Wheeler, L. (1969). Factors determining choice of a comparison other. *Journal of Experimental Social Psychology*, 5(2), 219-232.
- White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66, 297-333.
- Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychological bulletin*, 90(2), 245-271.
- Wolters, C. A. (2004). Advancing achievement goal theory: using goal structures and goal orientations to predict students' motivation, cognition, and achievement. *Journal of Educational Psychology*, 96(2), 236-250.
- Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological bulletin*, 106(2), 231-248.



## Appendix 1. Measures of Outcome Satisfaction and Task Enjoyment

In the questionnaire, we added the outcome satisfaction and task enjoyment as the dependent variables. These two variables are not the point in the research, therefore, we showed the results in appendix.

### A. Outcome Satisfaction

Subjects' outcome satisfaction of their self-designed T-shirt were measured using three items come from Huffman, C., & Kahn, B. E. (1998).

Scales Items

1. I was dissatisfaction with the self-designed T-shirt.
2. I like the self-designed pattern.
3. I am very happy with the T-shirt that I designed.

After the factor analysis, we delete the item1, and the Cronbach's alpha is 0.796.

Table 13 Descriptive Statistics of Evaluation

	Goal Orientation					
	Learning Goal Orientation			Extrinsic Goal Orientation		
	Mean	Std. Deviation	N	Mean	Std. Deviation	N
<b>Upward Comparison</b>	5.15	1.78	27	5.88	1.06	25
<b>Downward Comparison</b>	5.72	1.28	31	5.82	1.17	25

Dependent Variable: out satisfaction of self-designed product.

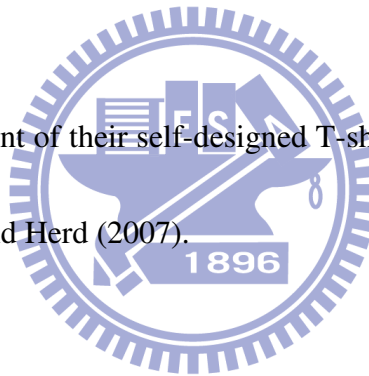
Table14 Summary of ANCOVA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Cov(Ability)	5.241	1	5.241	2.892	0.092
Goal Orientation	4.135	1	4.135	2.282	0.134
Social Comparison	1.082	1	1.082	0.597	0.442
Interaction	3.158	1	3.158	1.742	0.190
Error	186.665	103	1.182		
Total	3635.000	108			

Dependent Variable: out satisfaction of self-designed product.

## B. Task Enjoyment

Subjects' task enjoyment of their self-designed T-shirt were measured using four items come from Moreau and Herd (2007).



### Scale Items

1. I enjoyed during the design process.
2. I had a good time during the design process.
3. I felt the process was fun.
4. I felt frustrated during the task.

After the factor analysis, we delete the item4, and the Cronbach's alpha is 0.942.

Table 15 Descriptive Statistics of Evaluation

	Goal Orientation					
	Learning Goal Orientation			Extrinsic Goal Orientation		
	Mean	Std. Deviation	N	Mean	Std. Deviation	N
<b>Upward Comparison</b>	5.81	1.63	27	6.13	1.15	25
<b>Downward Comparison</b>	6.17	1.11	31	6.35	0.86	25

Table16 Summary of ANCOVA

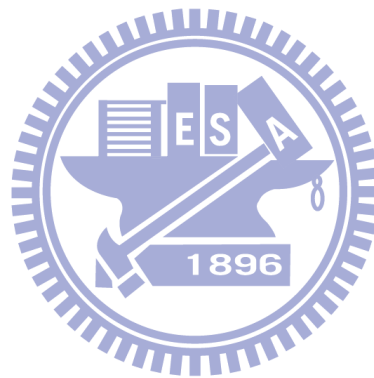
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Cov(Abilty)	1.260	1	1.260	0.839	0.362
Goal Orientation	1.214	1	1.214	0.808	0.371
Social Comparison	1.906	1	1.906	1.269	0.263
Interaction	0.063	1	0.063	0.042	0.838
Error	154.670	103	1.502		
Total	4197.222	108			

\* Dependent Variable: Task Enjoyment of self-designed product

Table14 and Table16 showed that the interaction between goal orientation and social comparison was not a significant effect on outcome satisfaction and task enjoyment. The main effects for goal orientation and social comparison are not significant, too.

The focus of the study is evaluation for self-designed product, therefore, we have

no definite information on outcome satisfaction and task enjoyment. Further research should discuss it in detail.



## Appendix 2. Chinese questionnaire (Self-Assessed Ability)

班級：\_\_\_\_\_姓名：\_\_\_\_\_座號：\_\_\_\_\_

小朋友，請根據你實際的狀況，在適當的空格打勾。

1. 跟別人比起來，我覺得自己在美勞方面的能力是不錯的。

非常不同意 不同意 有點不同意 沒感覺 有點同意 同意 非常同意

2. 我覺得我可以做出令自己滿意的美勞作品。

非常不同意 不同意 有點不同意 沒感覺 有點同意 同意 非常同意

3. 如果有很多圖畫，我可以分辨出好看或不好看。

非常不同意 不同意 有點不同意 沒感覺 有點同意 同意 非常同意





## Appendix 3. Chinese questionnaire

班級 \_\_\_\_\_ 座號 \_\_\_\_\_ 姓名 \_\_\_\_\_ 性別 \_\_\_\_\_

親愛的小朋友，你好：

進行完剛剛的設計活動，我們想要請你回答一些問題，請你依照你真正的感覺，**把適當的數字圈起來**。答案沒有對或錯，也絕對不會拿來打分數，影響你的成績，而且不會有其他人知道你的答案。如果有問題，歡迎舉手發問。記得要仔細作答，不要漏寫喔！

### 一、 對於你自己設計出來的衣服圖案，你對下面問題的看法是：

	1	2	3	4	5	6	7
	非常不同意	不同意	有點不同意	沒意見	有點同意	同意	非常同意
1. 我覺得我設計的衣服圖案是好的設計。	1	2	3	4	5	6	7
2. 我覺得我設計的衣服是好看的。	1	2	3	4	5	6	7
3. 我覺得我設計的衣服可以吸引別人的注意。	1	2	3	4	5	6	7
4. 我設計的衣服跟我心中想要的款式是一樣的。	1	2	3	4	5	6	7
5. 我喜歡我設計的衣服。	1	2	3	4	5	6	7
6. 我覺得其他同學會喜歡我設計的衣服。	1	2	3	4	5	6	7
7. 我對於自己設計出來的衣服覺得不滿意。	1	2	3	4	5	6	7
8. 我喜歡自己設計出來的圖案。	1	2	3	4	5	6	7
9. 我能夠設計出這樣的圖案是開心的	1	2	3	4	5	6	7

二、 回想剛剛設計圖案的過程，你對下面問題的看法是：

	1	2	3	4	5	6	7
	非 常 不 同 意	不 同 意	有 點 不 同 意	沒 意 見	有 點 同 意	同 意	非 常 同 意
10. 我享受設計圖案的過程。	1	2	3	4	5	6	7
11. 在設計的過程中，我的感覺是愉快的。	1	2	3	4	5	6	7
12. 我覺得設計的過程是有趣的。	1	2	3	4	5	6	7
13. 在設計的過程中，我感受到挫折。	1	2	3	4	5	6	7

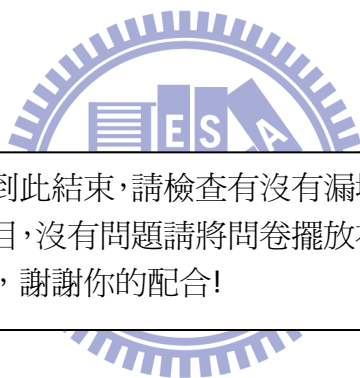
三、 對於參加這個活動，你的感覺是：

	1	2	3	4	5	6	7
	非 常 不 同 意	不 同 意	有 點 不 同 意	沒 意 見	有 點 同 意	同 意	非 常 同 意
14. 有機會得到獎品，是我最一開始設計圖案的主要原因。	1	2	3	4	5	6	7
15. 可以得到獎品，是我在設計過程中的主要動力。	1	2	3	4	5	6	7
16. 我最初想要參加活動的原因，是覺得設計衣服的過程具有挑戰性。	1	2	3	4	5	6	7
17. 我今天是抱著學習的心情來的。	1	2	3	4	5	6	7
18. 學習是這個活動的重點。	1	2	3	4	5	6	7
19. 不管最後別人覺得我的作品好看還是不好看，我都樂於接受”設計衣服”的挑戰。	1	2	3	4	5	6	7

\*\*後面有題\*\*

四、 請你看看別班同學的作品，針對他的作品，你的看法是：

	1	2	3	4	5	6	7
	非 常 不 同 意	不 同 意	有 點 不 同 意	沒 意 見	有 點 同 意	同 意	非 常 同 意
20. 我覺得這位同學設計的衣服圖案比我好看。	1	2	3	4	5	6	7
21. 我覺得別人會比較喜歡這位同學設計的衣服。	1	2	3	4	5	6	7
22. 圖片編號為	1	<input type="checkbox"/>	2	<input type="checkbox"/>			

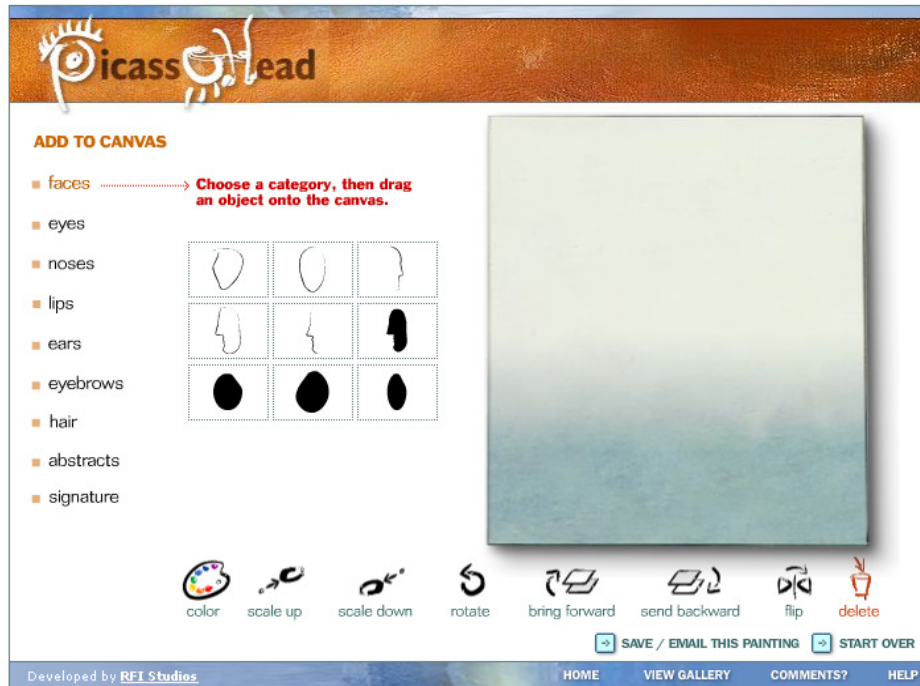


作答到此結束，請檢查有沒有漏填的題目，沒有問題請將問卷擺放在桌上，謝謝你的配合!

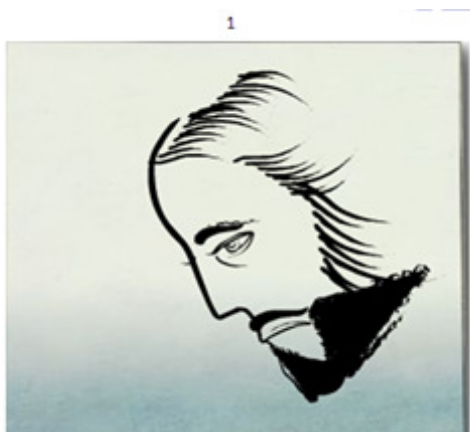
## Appendix 4. Experimental Tools

What tool respondents used to design their pictures in this study was as following.

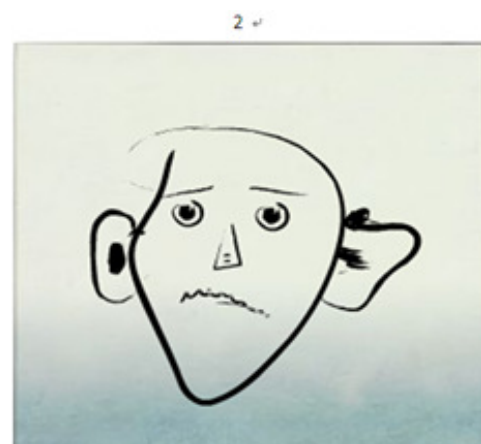
**Figure 4 Screenshot of Mr. Picassohead**



**Figure 5 Selected Pictures for Manipulation of social comparison**



**Upward Comparison**



**Downward Comparison**

from: <http://www.picassohead.com/>