The relationship among sex-role categories, self-esteem, and achievement: A preliminary study of Taiwanese youth

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Abstract
The purpose of the study was to investigate different levels of self-esteem and attitude toward achievement in individuals of varying sex-role categories: masculinity, femininity, and androgyny. The subjects for this study were 125 Taiwanese college freshmen, 68 males and 57 females, at the Tunghai University in Taiwan. Three scales were used in this study: the Bem Sex-role Inventory, the Coopersmith Self-esteem Inventory (CSEI), and the Attitude toward Achievement Inventory. The results of this study indicated that the masculinity-category subjects had both higher self-esteem and greater self-concept of ability toward achievement than the non-masculinity-category subjects. Also, there were statistically significant differences in academic achievement among the four sex categories favoring the masculine category. The results also showed that the androgyny-category subjects had a more positive attitude and a more internal attribution toward learning than their counterparts in the other categories. They were found to enjoy learning and feel pleased working hard in school.
THE RELATIONSHIP AMONG SEX-ROLE CATEGORIES, SELF-ESTEEM, AND ACHIEVEMENT: A PRELIMINARY STUDY OF TAIWANESE YOUTH

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ABSTRACT

The purpose of the study was to investigate different levels of self-esteem and attitude toward achievement in individuals of varying sex-role categories: masculinity, femininity, and androgyny. The subjects for this study were 125 Taiwanese college freshmen, 68 males and 57 females, at the Tunghai University in Taiwan. Three scales were used in this study: the Bem Sex-role Inventory, the Coopersmith Self-esteem Inventory (CSEI), and the Attitude toward Achievement Inventory. The results of this study indicated that the masculinity-category subjects had both higher self-esteem and greater self-concept of ability toward achievement than the non-masculinity-category subjects. Also, there were statistically significant differences in academic achievement among the four sex categories favoring the masculine category. The results also showed that the androgyny-category subjects had a more positive attitude and a more internal attribution toward learning than their counterparts in the other categories. They were found to enjoy learning and feel pleased working hard in school.
CHAPTER 1
INTRODUCTION

Many researchers (e.g., Bem, 1975; Lamke, 1982; Erkut, 1983; Payne and Futterman, 1983; Lau, 1989) have demonstrated that self-esteem differences exist among sex-role categories: masculinity, femininity, and androgyny. More specifically, research shows that individuals in the femininity-category are associated with lower self-esteem, lower self-concept, lower expectancy of success, anxiety, and depression (Payne and Futterman, 1983). In general, women report greater levels of femininity-orientation than men do. In other words, females are generally associated with lower self-esteem, lower self-concept, lower expectancy of success, high anxiety, and poor social adjustment than men. However, males and females differ little or not at all with regard to IQ scores (Levine and Orstein, 1983; Bem, 1975).

Statement of the Problem

Low self-esteem has been associated with low self-confidence and low expectancy of success (Seidner, 1978; Erkut, 1983; Block, 1983; Robinson, 1986; and Basow & Medcalf, 1988). As a result, such an individual may experience low achievement. Many explanations about the incommensurate development of self-esteem and self-confidence between male and female have been discussed in various
perspectives that include physiology, socialization, and expectation (Bem, 1974, 1975; Block, 1983; Aiken, 1987; Buteyn, 1989).

Significance of the Problem

The purpose of this study was to examine whether self-esteem differences exist among sex-role categories in Taiwanese youth, and to determine whether different levels of self-esteem do in fact influence academic achievement. More specifically, an individual's sex-role category was measured on three dimensions: masculinity, femininity, and androgyny, by using the Bem Sex-Role Inventory (BSRI) (Bem, 1975). The level of self-esteem for the individual was measured by the Coopersmith Inventory (Coopersmith, 1967). Each individual's academic achievement was based on his/her grade point average (GPA) in his/her first year in college.

The three major research questions were:
1. Are there any differences in sex-role categories between Taiwanese male and female college students?

   Subquestions are:
   a. Do male college students tend to have greater masculine characteristics than female college students?
   b. Do female college students tend to have greater feminine characteristics than male college students?
c. Do male or female college students have greater androgynous characteristics?

2. Do students in the androgyny-category have greater self-esteem than students in the masculinity- and femininity-categories?

   **Subquestions are:**
   
a. Do students in the androgyny-category have a higher expectancy of success than students in the masculinity- and femininity-category?

b. Do students in the masculinity-category have a higher expectancy of success than students in the femininity-category?

3. Do students in the androgyny-category perform better academically than students in the masculinity- and femininity-category?

   **Subquestions are:**
   
a. Do students in the androgyny-category have a higher GPA than students in the masculinity- and femininity-category?

b. Do students in the masculinity-category have a higher GPA than students in the femininity-category?

**Limitations of the Study**

The subjects in this study were from Taiwan; therefore, the results can only be generalized to Taiwanese college
students. Another limitation is that only freshmen students were included in this study.

Definition of Terms

The following are the working definitions of terms used in this paper.

Sex-role categories: Androgyny, Masculinity, Femininity are personality traits which vary independently.

Androgyny: "An integration of both masculinity and femininity within a single individual," in that being "both masculinity and femininity depend on the situational appropriateness of the various behaviors" (Bem, 1977, p.196).

Masculinity: an Individual in the masculinity-category is high in masculine traits, such as assertiveness, forcefulness, dominance, aggressiveness and competition, and low in feminine traits, such as affection, shyness, cheerfulness, warmth, and tenderness (Bem, 1974).

Femininity: an Individual in the femininity-category is high in feminine traits, such as affection, shyness, cheerfulness, warmth, and tenderness, and low in masculine traits, such as assertiveness, forcefulness, dominance, aggressiveness and competition (Bem, 1974).

Sex-role identity: An individual who is in the androgyny, masculinity, or femininity sex-role category tends to act in ways that are consistent with that category (Bem, 1975,1977).
Self-esteem: Self-esteem is a "personal judgment" (Coopersmith, 1967, p.5) in that the individual views himself or herself as worthy and successful. When the individual holds an attitude of high self-esteem toward himself/herself, he/she will not express "feelings of guilt, shame, or depression and to conclude that their actual achievements are little importance" (Coopersmith, 1967, p. 3).


Self-confidence: One views himself or herself as capable of accomplishing things.

Self-concept of ability: Self-concept of ability is a mental image one has, in that an individual believes he or her has ability to accomplish something.

Expectancy of success: One has confidence or assurance in the possibility that what one desires will happen.

External locus of control: A person who believes that the contingencies in life are determined by the external environment is referred to as having an external locus of control.

Internal locus of control: A person who believes he or she is able to control the contingencies in life is referred to as having an internal locus of control.
Organization of the Study

This study is organized in five chapters. The second chapter reviews the literature on the following four topics:

(1) Theories of gender identity. In this section, the various gender identity theories are discussed form an historical perspective.

(2) The relationship between gender and sex-role categories in terms of androgyny, masculinity, and femininity. The relationship between gender and sex-role categories is discussed. Also, important issues related to the differences between gender and sex-role categories about physiology, socialization, and expectation are addressed.

(3) The relationship between sex-role categories and self-esteem. In this section, how the sex-role categories are influential determinants of the function in a person's psychological well-being in terms of self-esteem is discussed.

(4) The relationship between sex-role categories and achievement. In this section, how the various sex-role category individuals respond differently with respect to their achievement is discussed.

Chapter three describes the methodology. The procedure, design, and the instruments used in this study are discussed.
Chapter three concludes by presenting the hypotheses of the study.

Chapter four presents the results of the study based on statistical data.

Chapter five interprets the data, and discuss the implications of the study.
CHAPTER 2
REVIEW OF LITERATURE

This literature-review chapter consists of four sections. The first presents an historical perspective of the various gender identity theories. The second explores the relationship between sex-role categories and gender by illustrating the concepts of androgyny, masculinity, and femininity. The manner in which sex-role categories correlate with psychological well-being is also discussed here. The third addresses the differences between sex-role categories along three dimensions: (1) physiology, (2) socialization, and (3) societal expectation. The fourth section is concerned with both the relationship between sex-role categories and self-esteem, and the correlation between sex-role categories and achievement.

Theories of Gender Identity

There are four major theories that deal with the topic of sex-role identity: psychoanalytic, social learning, cognitive, and gender schema theory. From a historical perspective, we can look at how a later gender identity theory challenges and extends an earlier one.

Psychoanalytic theory, which is the earliest theory to explain gender identity-development, assumes that human development involves psychosexual stages. When the sexual
urge is directed towards the parent of the opposite sex in the phallic stage (3 to 5 years), the well-known "Oedipus complex" for boys, and "Electra complex" for girls, sex-role identification emerges (Miller, 1989). Psychoanalytic theorists, (e.g., Freud), propose that sex-role differences are a result of the repression of human biological drives. Also, these theorists view individuals as passive agents who cannot escape from their psychosexual stages. The overemphasis on the influence of sexuality and the lack of focus on social influences in sex-role identity are considered the weaknesses of psychoanalytic theory (Miller, 1989).

The Social learning perspective of sex-role identity is markedly different from the psychoanalytic one. In Bandura's theory, the environment becomes the most important factor that influences a child's sex-role identity. According to Bandura (1968), in early childhood, parents are the agents who reinforce the child's sex-appropriate behavior through praising and approving. These rewarding experiences evolve into a set of schema existing in the child's cognitive structure. Consequently, the child will be motivated to learn sex-appropriate behavior that fits into his/her prior experiences in order to get future rewards.
Although Bandura provides a complete explanation of how the environment and a person's behavior are connected through the person's cognitive system, he fails to describe the nature of these developmental changes (Miller, 1989). In contrast to Bandura's social learning theory, Kohlberg (1966) assumed that sex-role identity is a result of cognitive growth, but not a response to some direct or vicarious experiences with models or significant others.

Kohlberg (1966) maintained that sex-role concepts are directed by the child's cognitive organization. Moreover, sex-role identity relates to age-regularity in terms of physical maturation. Obviously, when a child becomes more mature, he/she is more able to organize his/her sex-role perceptions and sex-typed behavior based on basic beliefs about his body and his social environment. In other words, the child uses his physical experiences and his social environment to form his own basic sex-role concepts and values.

Similar to Piaget's "stage of child development theory", Kohlberg proposed that children between the ages of 2 and 7 structure the consistency of their own sex-role development by moving through three stages: "gender labeling, gender stability, and gender consistency," (Berk, 1989, p. 572). In the gender labeling stage, children are not able to
understand gender consistency, even though the children may learn some sex-linked verbal labels such as man, boy, lady, and girl. In the stage of gender stability, children use body images to recognize sex differences. For example, sex differences are determined by power, size, and strength in terms of visible differences (Kohlberg, 1966). In the stage of gender consistency stage, which Piaget calls "concrete operational stage", children accept the situational consistency of their sex and realize that their gender is unchangeable (Kohlberg, 1966).

In addition to sex-role concept development, Kohlberg (1966) also assumed that children tend to make judgments about their own sex-role values that relate to "self-projective" and "like-self" (Kohlberg, 1966. p. 113). The belief that one sex is best leads to a sex preference that encourages children to engage in sex-appropriate behavior. Moreover, children prefer to imitate models of the same sex, because children feel that they are "like-self".

In conclusion, Kohlberg provided an explanation for gender identity that is determined by natural development, whereas social learning theory emphasizes that gender identity is determined by observation, modeling, and imitation. However, some criticism has come from other researchers. For example, Bandura (1968) suggested that even children of less than 2
prefer to imitate the behavior of adults of the same-sex rather than adults of the opposite-sex. Fagot (1985) also indicates that as soon as children become aware of the gender category to which they belong, they will modify their behavior in order to conform to their sex-role expectations.

The gender schema theory combines both cognitive theory and social learning theory to account for gender identity. Gender schema theory emphasizes that sex role identity is a learned behavior which involves cognitive processing (Bem, 1981, 1983). According to Bem (1983), "schema is a cognitive structure that organizes and guides an individual's perception" (p, 603). Children construct their gender schema through observing sex-role differences in their environment. As children learn the content of their society's gender schema, they also learn the roles that are linked to their own sex.

To illustrate the idea of gender-schematic process, Bem (1983) points out that while children are learning content-specific information about gender, they also learn to generate a sex-related network to evaluate this new incoming information. This new incoming information is then spontaneously matched with preexisting schema through the mechanism of assimilation. In other words, this gender-schematic process involves the ability to spontaneously
identify masculine and feminine categories and place them in the correct gender-related cognitive structure. Moreover, Bem (1983) asserts that "schema functions as a network of associations which guides and organizes an individual's perception" (p. 603). When any particular schema has been constructed, an individual tends to accomplish his/her goal through self-fulfilling prophecies.

On the other hand, Bem (1977) also assumes that each individual has the potential to develop both feminine and masculine characteristics in terms of "psychological androgyny" (p. 196). Bem believes that "an integration of both masculinity and femininity within a single individual" (p. 196) is possible, and that creates the psychological androgyny category. Also, Bem (1975) points out that, regardless of gender difference, an androgynous characteristic not only allows for "an individual to engage freely in both masculine and feminine behavior" (p. 635) but also promotes one's psychological well-being.

**Sex-role Categories in Gender**

Bem developed a sex-role instrument (1974) based on the notion that masculinity and femininity vary independently of each other, and it is possible to characterize a person as masculine, feminine, or androgynous as a function of personality characteristics. According to the Bem Sex-Role
Inventory (BSRI), individuals who score high on masculine items, such as aggressive, ambitious, assertive, and low on feminine items, such as affectionate, cheerful, childlike, are referred to as the masculinity-category. Individuals who score high on feminine items and low on masculine items are classified into the femininity-category. Individuals who score high on both masculinity and femininity are categorized as androgynous.

In a preliminary study with BSRI, it appears that androgyny-category individuals have better sex role adaptability across situations, whereas masculinity- and femininity-category individuals tend to be rigid in their sex-typed behaviors (Bem, 1975). In other words, the masculinity- and femininity-category individuals can perform well only when the situation is congruent with their sex stereotype in terms of their self-definition as masculine or feminine, whereas androgyny-category individuals display behavior appropriate across situations. For example, Bem (1975) has found that feminine and androgynous males demonstrate greater involvement and interaction with a tiny kitten than the masculine males. This result implies that androgyny-category males display greater nurturance if given the opportunity to interact with another human being rather than with a kitten. Furthermore, Bem (1975) also indicates that although femininity- and
androgyny-category females did not show significantly greater overall involvement with the kitten than did masculinity-category females, masculinity-category females did display greater independence than the femininity-category females when the situation calls for it.

However, Bem (1975) points out that a high level of sex-typed behaviors may not be desirable for individuals; it can harm an individual's psychological well being. For example, a narrowly defined feminine self-concept not only inhibits masculine behavior but also correlates with high anxiety, low self-esteem, and low social acceptance (Bem, 1975). Some other investigations have shown similar results. For instance, Lamke (1982) and Lau (1989) argue that both androgyny-category males and females reported higher levels of self-esteem than nonandrogyny-category males and females. Furthermore, higher levels of femininity-category subjects were significantly associated with higher anxiety and depression (Payne et al, 1983).

Although many researchers advocate that one's psychological well-being will be maximized when one has an androgynous sex role category, there are inconsistent arguments among researchers about the relationship between sex-role categories and psychological well-being. For example, cognitive theorists (e.g., Kohlberg) maintain that
"psychological well-being would be fostered only if one's sex role category was congruent with one's gender" (Whitley, 1983, p. 766), because sex role identity is the function of conforming to the individual's sex-role norm that his or her society demands. In other words, high masculinity and low femininity in men or high femininity and low masculinity in women is the best for an individual's psychological well-being.

On the other hand, some researchers (e.g., Flaherty et al, 1980; Whitley, 1988) suggest that, regardless of gender, psychological well-being would be fostered if one has a masculine sex role category. For example, Whitley (1988) indicates that although the androgynous subjects reported greater adjustment than did masculine and feminine subjects, the masculine subjects did show greater self-esteem than did androgynous and feminine subjects. Moreover, Flaherty and Dusek (1980) explored the issue of sex role categories and self-concept. They have found, using the Bem Sex Role Inventory and Monge Self-concept scale in 162 male and 195 female college students, that although the androgynous group and masculine group reported similar levels on achievement and leadership, the masculine group did report greater self-concept of ability than did the androgynous group.
In conclusion, sex-role categories are not only associated with an individuals' psychological well being but also correlate with an individual's self-esteem. Some researchers (e.g., Seidner, 1978; Basow et al., 1988) also point out that in general, females report lower self-esteem and lower self-confidence than do males, although females and males do not differ on their IQ. The next section focuses on the differences and possible causes of sex-role categories between males and females.

Differences between Sex-role Categories in Gender

In general, males display higher levels of the masculinity- and the androgyny-categories than do females. The masculinity- and the androgyny-category are strongly associated with higher levels of self-esteem, self-confidence, and expectancy of success (Seidner, 1978; Erkut, 1983; Block, 1983; Robison, 1986; and Basow et al., 1988). For example, Block (1983) states that gender differences in personality traits can be grouped into seven conceptual domains: "aggression, activity, impulsively, susceptibility to anxiety, achievement-related behaviors, self-concept, and social relationships" (p. 1337), and there are significant sex-differences in each domain. Nevertheless, males are found to be more aggressive, active, and impulsive than females from an early age. Moreover, males tend to have a
more positive self-concept, which includes feelings of greater personal efficacy than females. On the other hand, females have been found to be more fearful and have less confidence in their abilities than males; they also express less confidence in their achievements. Also, females have been found to involve themselves more often than males in interpersonal relationships, prosocial activities, and less often in political and social dissent and protest (Block, 1983).

A study by Basow and Medcalf (1988) support Block's argument. Basow and Medcalf (1988) conducted a study of sex typing and academic achievement among college students. A 7-point scale pre-exam questionnaire and a post-exam questionnaire were used in this study. In the pre-exam questionnaire, the students were asked to rate their ability to do well on an exam. In the post-exam, students were asked to evaluate their exam performance as either successful or unsuccessful. The female students reported a lower sense of self-confidence on the pre-exam questionnaire than did male students. On the other hand, male students had higher expectations before they took the exam and actually had higher grades than female students. This study suggests that sex typing can be a hindrance to academic achievement among women. For example, males are often socially encouraged to
develop their masculine traits, which are linked to higher self-esteem and higher self-confidence. In contrast, females are socialized to develop their feminine traits, which are associated with lower self-esteem, lower self-confidence, and dependency in achievement situations (Erkut, 1983).

However, causes of differences in sex-role categories are controversial. Some researchers (e.g., Aiken, 1987) maintain that physiological factors are the major causes of the differences in sex role categories between males and females. Other researchers (e.g., Block, 1983; Buteyn, 1989) suggest that socialization and cultural expectation are important factors. According to a study by Aiken (1987), the factors that cause sex-role differences in gender are due to physiological factors such as heredity, hormonal difference, and hemispheric brain preference. Aiken suggests that the different sex-linked genes can determine the various sex role categories between the sexes. Moreover, the differences in cerebral lateralization also play an important role in the development of different personality traits and abilities in males and females.

In contrast to Aiken's argument, other theorists (e.g., Bandura, 1968; Block, 1983) suggest that a preference for sex role categories is the result of sex-differentiated socialization and cultural expectation. For example, sex-
role differentiation usually begins after birth by the naming of the baby, selecting of different clothing and hair styles, and sex-appropriate play things (Bandura, 1968). In general, parents reinforce sex-appropriate behavior through praising and approving. However, parents are not the only source of sex-role models in the child's world. When the child gets older, multiple models such as teachers, peers, and those in the mass media, can be factors that influence the child's identity of sex-role categories. For example, same-sex peers reinforce one another regarding sex-appropriate play through praising, approving and imitation (Berk, 1989). Moreover, children observe and imitate sex-appropriate behavior which relates to the normative system from TV programs (Berk, 1989).

In addition to sex-differentiated socialization, cultural expectation is another factor that influences a child's preference of sex-role categories. According to Block (1983), sex-differentiated personalities are shaped by parental emphasis and societal pressures. Parents expect that their sons will be more "independent, self-reliant, highly educated, ambitious, hard working, career oriented, intelligent, and strong willed" (p. 1341). In contrast, parents expect their daughters to be "kind, unselfish, attractive, loving, will-mannered, and to have a good
marriage and to be a good parent" (p. 1341). In addition to parents' shaping of behavior, it has been found that teachers respond differently to students based on their gender (Block, 1983; Buteyn, 1989). For instance, Block (1983) points out that teachers give more attention, both positive and negative, and respond in more "solution-advancing" (p. 1343) ways to boys. Buteyn's study (1989) also supports Block's finding. Buteyn (1989) has found that teachers interact with boys more often in math classes in ways that challenge them to achieve.

Overall, the factors that cause males and females to commit various sex-role categories not only influence their sex-typed behaviors but also influence their self-esteem. In terms of self-esteem, it is a personal judgment of himself or herself as worthy (Coopersmith, 1967). In the next section, how sex-role categories correlate with self-esteem, self-confidence, and self-concept of ability are discussed.

The Relationship between Sex-role Categories and Self-esteem

Low self-esteem has been linked to indicators of psychological distress such as depression, anxiety, or general adjustment (Whitley, 1983). On the other hand, high self-esteem is expressed as a positive self-evaluation; it is a healthy and desirable characteristic for an individual (Coopersmith, 1967). Obviously, an individual with strong
self-esteem is more likely to express his or her self-confidence, self-concept of ability, and expectancy of success on his/her achievement. For example, Keith (1985) and Burns (1986) have indicated that a higher self-concept of ability can have an impact on a person's achievement through a self-fulfilling prophecy.

Self-esteem differences, however, do in fact exist between sex-role categories (Bem, 1974; Lamke, 1982; Payne, 1983; Costos, 1986; Lau, 1989). Many investigations have shown that, regardless of gender, individuals in the masculinity- and androgyny-categories are shown to be superior in self-esteem than individuals in the femininity-category. For example, a study by Orlofsky and Stake (1981) has shown that male college students, in the masculinity-category, tend to have stronger general self-esteem and higher self-concepts of academic ability than do their male counterparts in the femininity-category. Similarly, Erkut (1983) has reported that femininity-category individuals tend to display less confidence in their own ability. Erkut's study suggests that women are socialized to have more feminine characteristics, and tend to have a lower expectancy for success in academic situations than men do.

The masculine and feminine personality traits, however, have similar meaning for both sexes. According to Lamke
(1982), females in the masculinity- and androgyny-categories did not differ in levels of self-esteem from males in the masculinity- and androgyny-categories. Also, Robison et al. (1986) have reported that high-achieving, academically competent girls rated themselves significantly higher in self-esteem than boys. Robison et al. suggest that girls who are academically successful have either more masculine or more androgynous characteristics. Similar results have been reported by Hall's (1990) study which demonstrated that when clear performance feedback is provided in competitive situations, the self-confident females are equal to the self-confident males.

Some investigators point out that an individual's sex-role category can also influence his or her self-esteem. For example, Kimlicka (1983) suggests that females in the androgyny- and masculinity-categories do in fact have greater self-esteem, body satisfaction, and sexual satisfaction than female subjects in the femininity-category.

In addition to self-esteem, self-confidence, and self-concept of ability, the androgyny- and masculinity-categories have also been linked to lower anxiety and depression (Bem, 1975; Payne et al, 1983). According to the study by Payne et al (1983), using the Beck Depression Inventory in 128 male college students, the masculinity-
category group had higher self-esteem but lower anxiety and depression than did the other groups. This result does support Bem's investigation that femininity-category individuals have higher anxiety but lower self-esteem than androgyny- and masculinity-category individuals (Bem, 1975).

In summary, sex role categories have a major impact upon a person's psychological well-being in his/her self-esteem, self-concept of ability, and self-confidence. Many investigations have shown that individuals with an androgyny-and masculinity-category are associated with greater self-esteem, self-confidence, and self-concept of ability, whereas the femininity-category is linked to lower self-esteem, self-concept of ability, and self-confidence. The reason is perhaps linked to the fact that women are socialized to be more feminine, and as a result, they tend to have lower self-esteem, self-confidence, self-concept of ability but higher anxiety and depression than men do.

In addition to the differences in self-esteem, self-confidence, and self-concept of ability between the sex-role categories, many investigations have also shown that differences in achievement do in fact exist among sex-role categories. Thus, a discussion of the differences in achievement between sex-role categories that we turn next.
The Relationship Between Sex-role categories and Achievement

It appears that individuals in the masculinity- and androgyny- category not only have stronger self-esteem, self-confidence, and self-concept of ability but also have higher achievement than femininity- category individuals (Harrison, 1981; Levine et al, 1983; Crombie, 1983; and Basow et al, 1988). Achievement is attributed to a person's expectancy of success (Cromie, 1983; Levine et al, 1983; Erkut, 1983). In other words, when people have higher expectancy of success for their goals, they tend to have greater achievement.

However, many studies (e.g., Basow, 1988; Cromie, 1983; Levine et al, 1983; Erkut, 1983) have also discovered that females tend to report less expectancy of achievement than men do. Consequently, females also perform lower on their achievement than men do. Ding (1988) asserts that female students perform better academically than male students in elementary school; but, when female students come to the later stages of junior middle school, they gradually fall behind male students. Moreover, male students are superior to female students in the areas of problem-solving, logical thinking, and spatial imagination (Levine et al, 1983; Erkut, 1983; Ding, 1988). Erkut (1983) associates this to the fact that females are socialized to exhibit more feminine characteristics. The femininity-category, however, is
associated with dependency, lower self-confidence, and less achievement-orientation (Erkut, 1983; Basow et al, 1988).
Both studies by Erkut (1983) and Basow et al. (1983) do support Block's hypotheses.

Block (1983) assumes that sex-differentiated socialization not only deeply influences an individual's personality but also his/her cognitive development. Sex-differentiated socialization, according to Block (1983), provides children with unequal opportunities to "experiment with nature" (p, 1345) so that children develop different cognitive strategies for responding to various experiences. For example, girls are socialized in ways that "encourage the use of assimilative strategies for processing new information" (p, 1347) into preexisting cognitive schemas. Boys are encouraged to use accommodative strategies, that emphasize the modification and formation of cognitive schemas in order to extend prior understanding to new problem-solving situations.

In addition to the expectancy of success, many investigations have also discovered that the different patterns of locus of control that influence a person's achievement do exist between sex-role categories (Harrison, 1981; Crombie, 1983; Basow et al, 1988; Wang et al, 1989). A study by Basow et al (1988) points out that femininity-
category individuals tend to attribute their failure to lack of ability to a greater extent than masculinity-and androgyny-category individuals. Feminity-category individuals also tend to attribute their success to external factors such as luck and the ease of the task. For example, Crombie (1983) reports that using the BSRI and Attribution Questionnaire for academic work in 228 undergraduate volunteers shows that androgynous women tend to attribute their success to their ability. In contrast, feminine women tend to attribute their success to luck and effort.

However, masculinity- and androgyny- category individuals respond differently from the femininity-category individuals on their perception of failure and success attributions. Masculinity and androgyny-category individuals tend to attribute their failure to external factors such as bad luck or task difficulty and attribute their success to internal factors such as ability and effort (Crombie, 1983). Similar results have been reported in one cross-cultural study by Wang and Creedon (1989). Wang and Creedon report that Chinese women in China are stronger feminine-oriented than American women in U.S. Furthermore, Chinese females are more likely than males to attribute their success to luck and their failure to lack of ability. Chinese males, on the
other hand, are more likely to attribute their failure in achievement to external sources.

In conclusion, various sex-role category individuals do respond differently to achievement. Moreover, the different expectancies of success and attributions of achievement do in fact affect the individuals' actual performance. Thus, the experiences of success or failure can either increase or decrease a person's self-esteem and self-confidence.

Summary

Although there are different ideas among theorists about what sex-role categories best foster a person's well-being, it is apparent that androgynous and masculine sex-role categories have a more positive impact upon a person's self-esteem, self-concept of ability, expectancy of success, and achievement than feminine sex-role category. However, when women are socialized to be more feminine, their sex role orientation is more likely to be associated with dependence, low self-esteem, and low achievement.

More and more, however, it appears that women are required to be either more androgynous or masculine sex role-oriented in order to fulfill the demands of modern society (Whitley, 1983). In other words, it can be inferred from the reviewed literature that women who display either androgynous or masculine sex-role orientation are more likely to experience
higher self-esteem, self-concept of ability, expectancy of success, and achievement. In the present study, a cross-cultural study was conducted to investigate whether androgynous and masculine sex role-oriented individuals do in fact have a more positive self-image than feminine individuals in a developing country—Taiwan. The study explored whether androgynous and masculine sex role-oriented Taiwanese college students can academically perform as well as androgynous and masculine sex role oriented Taiwanese college students. Finally, the study examined whether androgynous or masculine sex-role category has a more positive psychological impact upon the well-being of Taiwanese youths.

The hypotheses of this study are presented next.

Hypotheses

Hypothesis 1:

The androgyny-category group will show statistically significantly higher self-esteem than both masculinity- and femininity-category groups on the scores of Coopersmith Inventory.

Hypothesis 2:

The masculinity-category group will show statistically significantly higher self-esteem than femininity-category group on the Coopersmith Inventory.
Hypothesis 3:

The androgyny-category group will show greater academic achievement scores in terms of GPA than both masculinity- and femininity-category groups.

Hypothesis 4:

The masculinity-category group will show greater academic achievement scores in terms of GPA than femininity-category group.
CHAPTER 3
METHODOLOGY

Subjects

The subjects for this study were 125 Taiwanese college freshmen, sixty-eight males (54.4%) and fifty-seven (45.6%) females, enrolled in three different freshmen Chinese classes in Tunghai University, Taiwan. The average age of the male students was 20.24 and 19.56 for the female students. Subjects were not paid for their participation and did not receive course credit. Also, the subjects were informed of the fact that this survey was to investigate personality characteristics and self-concept of college students in Taiwan.

Instruments

The purpose of this study was to examine different levels of self-esteem and achievement in individuals of varying sex-role categories. Four different measures were used in this study: (1) a classification of sex-role categories; (2) a measure of self-esteem; (3) a measure of attitude toward achievement and (4) a measure of actual academic achievement. Three scales were used in this study; the Bem Sex-role Inventory, the Coopersmith Self-esteem Inventory, and the Attitude of Achievement Inventory. Each is described in detail next.
Classification of Sex-role Categories

In order to classify individuals' sex-role categories, the Bem Sex Role Inventory (Bem, 1977) was used. The Bem Sex Role Inventory is a list of 60 personality characteristics. Twenty of the characteristics are stereotypically feminine (e.g., affectionate, gentle, understanding) and twenty are stereotypically masculine (e.g., ambitious, self-reliant, independent). The Bem Sex-role Inventory also contains twenty characteristics that serve as filler items (e.g., truthful, happy, conceited). The Bem Sex-Role Inventory is a paper-and-pencil self-report instrument that asks subjects to indicate on a 7-point Likert scale how well each of the 60 characteristics describes herself or himself. The scale ranges from 1 (Never or almost never true) to 7 (Always or almost always true). In order to categorize people as masculinity-category, femininity-category, or androgyny-category, each subject's masculinity and femininity scores are calculated. Moreover, a median split method based on the participants in this study is used to divide the subjects into four groups: (1) those scoring above the median on both the masculine and feminine scales are defined as androgyny-category; (2) those scoring above the median on the masculine scale and below the median on the feminine scale are defined as masculinity-category; (3) those scoring above the median on
the feminine scale and below the median on the masculine scale are defined as femininity-category; (4) those scoring below the median on the both masculine and feminine scales are defined as undifferentiated-category.

Test-retest reliability of the Bem Sex-Role Inventory (BSRI) is high (.90) in each subscale. Also, the BSRI is moderately correlated with the sex role scales of the California Psychological Inventory and the Guilford-Zimmerman scale (Bem, 1974).

A study of BSRI construct validity was reported by Gaudreau (1977). His investigation included 325 males and females in different occupations in Houston, Texas. His study, by using a factor analysis, supports the contention that masculinity and femininity are considered as independent traits.

Measure of Self-esteem

The adult form of the Coopersmith (1981) Self-esteem Inventory (CSEI) was used to measure subjects' self-esteem in the present study. CISE is a brief self-rating questionnaire with 25 items that intend to measure a person's "self-attitudes in four areas: peers, parents, school, and personal interests" (Coopersmith, 1967, p.10). Each item is a short statement that evaluates attitudes toward the self. Examples of some items are: "I give in very easily"; "It's pretty tough to be me"; "People usually follow my ideas". If
the statement does describe how a person usually feels, the person responds to the statement by choosing "like me". If the statement does not describe how the person usually feels, the person responds to the statement by choosing "unlike me".

In order to find out the scores of each adult form, a scoring key of CSEI was used. The examiner counts the number of the items the person marks that correspond to the answers on the scoring key. The number of corresponding answers on each adult form needs to be multiplied by four to get a total self-esteem score. The maximum total self-esteem score is 100. According to the CSEI, high scores in the CSEI correspond to high self-esteem.

Test-retest reliability of CSEI has been investigated by Bedeian, A. G., Teague, R. J., and Zmud, R. W. (1977), by using the short form of CSEI in 103 college students. The results of the coefficient were .80 for males and .82 for females.

A factor analytic study was conducted by Kokenes (1978) in order to examine the construct validity of the CSEI. Kokenes' study included 7600 children of grades four through eight with a wide socioeconomic range. Results of this study provided evidence of construct validity of the CSEI.
Measure of Attitude Toward Achievement

An achievement inventory developed by the researcher (1991) was also used in this study (see Appendix A). The measure is a fifteen-item self-rating scale. Each item is a short statement that evaluates subjects' attitude toward their academic achievement. The statements included four domains: internal locus of control, external locus of control, self-concept of ability, and attitude toward learning. Examples of some items are: "My success in school is due to my own effort"; "My failure is due to my bad luck"; "I have self-confidence in my academic works", and "I enjoy learning in school".

Subjects rated themselves on a 5-point Likert scale. The five categories are: "Strongly Disagree"; "Disagree"; "Neutral"; "Agree"; and "Strongly Agree". Possible scores for the 15 statements in this measure range from a maximum of 75 to a minimum of 15. A high score indicates a more positive attitude toward academic achievement, and a low score indicates a more negative attitude toward academic achievement.

In addition to the Achievement Inventory, the subjects' GPA scores were a source to evaluate actual academic achievement. All the subjects' GPA scores in their first college semester were recorded.
The reliability of the Achievement Inventory in this study was run by Cronbach's alpha of internal consistency. The reliability coefficient was (.41).

Procedures

There were two parts to the procedures in this study. The first part was language translation, and the second part was the survey administration. Since the subjects' native language was Chinese, not English, a Chinese translation form of BSRI, CSEI, and the Attitude of Achievement Inventory was necessary.

The Chinese forms of the BSRI and the CSEI that were translated by the researcher have been approved by the Consulting Psychologists Press (CPP) in June 1991. An agreement of the copyright for the BSRI and CSEI in Chinese edition was also granted by the CPP.

The Attitude of Achievement Inventory, which was developed by the researcher, also has been translated into Chinese. The Chinese form of the Attitude of Achievement Inventory was checked and approved by another Chinese graduate student in TESOL program at the University of Northern Iowa.

All three of these Chinese form inventories were stapled together, and then sent with a cover page that stated the purpose of the study and a request for personal background information from each subject. The personal background
information included gender, age, major, school year, birth
order, number of siblings, and the GPA in freshman year. The
inventories were typed, and stapled and mailed directly to
the instructor of the Chinese courses at the Tunghai
University, Taiwan.

These inventories were hand delivered by the instructor in
the Chinese classes. The subjects were asked to complete
these three inventories in their Chinese class. The subjects
were told that the personal background information they
provided and the test results would be kept strictly
confidential; therefore, they were asked to answer all the
questions honestly.

There were 146 subjects, 60 females and 86 males, who
participated in this survey. Subjects who did not complete
all the three inventories or omitted their personal
background information were not included in the data. 125
subjects, 57 females and 68 males, completed their
inventories and personal background information. The
statistical treatment, one way ANOVA and the Tukey test, were
used in the study for measuring the self-esteem and
achievement differences among the various sex-role category
groups.
Sex Role Orientation

The Bem Sex-Role Inventory (BSRI), which classifies subjects as "masculine", "feminine", "androgynous", or "undifferentiated" was used in this study and was scored by the median-split method (sex combined). The median score on the feminine sex role scale for the Taiwanese students is 4.71, and the median score on the masculine sex role scale for the Taiwanese students is 4.26.

Based on the sample median-split method, 26 subjects were classified as femininity-category group, 27 subjects as masculinity-category group, 35 subjects as androgyny-category group, and 37 subjects as undifferentiated-category group (see Table 1). Based on these four sex role categories, almost one-third of the female subjects was classified as feminine and only 7% as masculine. Similarly, 34% of the male subjects were classified as masculine and only 10% as feminine.

Self-esteem

Hypothesis 1 which assessed the self-esteem between the various sex-role categories was tested by oneway ANOVA and Tukey test. There were statistically significant \( F(3,121) = 6.12, p<.05 \) differences among the groups on the Coopersmith
Table 1

<table>
<thead>
<tr>
<th>Sex-role Categories Classification</th>
<th>Femininity</th>
<th>Maculinity</th>
<th>Androgyny</th>
<th>Undifferent.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Females</strong></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>19</td>
<td>33</td>
<td>4</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td>7</td>
<td>10</td>
<td>23</td>
<td>34</td>
</tr>
<tr>
<td><strong>Sex Combined</strong></td>
<td>26</td>
<td>21</td>
<td>27</td>
<td>22</td>
</tr>
</tbody>
</table>

Self-esteem Inventory. The androgyny- and the masculinity-category group showed significant differences at the .05 level from other groups. The masculinity-category group had a higher mean score (66.52) than the other groups on the Coopersmith Self-esteem Inventory (see table 2 for the mean and standard deviation of each group).

Attitude of Achievement

In addition to assessing self-esteem among various groups, subjects' self-concept and attitude toward their achievement were measured by the Attitude of Achievement Inventory. There were statistically significant \[ F(3,121) = 7.26 \ p < .05 \] differences among groups on the Achievement Inventory. The
Table 2

Mean scores and standard deviations for the Femininity-, Masculinity-, Androgyny-, and Undifferentiated-category groups on the Coopersmith Self-esteem Inventory.

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Femininity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex-combined</td>
<td>56.15</td>
<td>17.24</td>
</tr>
<tr>
<td>Females</td>
<td>56.63</td>
<td>19.04</td>
</tr>
<tr>
<td>Males</td>
<td>54.86</td>
<td>10.84</td>
</tr>
<tr>
<td>Masculinity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex-combined</td>
<td>66.52*</td>
<td>17.15</td>
</tr>
<tr>
<td>Females</td>
<td>82.00</td>
<td>3.46</td>
</tr>
<tr>
<td>Males</td>
<td>63.83</td>
<td>17.15</td>
</tr>
<tr>
<td>Androgyny</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex-combined</td>
<td>65.03*</td>
<td>17.60</td>
</tr>
<tr>
<td>Females</td>
<td>66.46</td>
<td>16.79</td>
</tr>
<tr>
<td>Males</td>
<td>64.18</td>
<td>18.03</td>
</tr>
<tr>
<td>Undifferentiated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex-combined</td>
<td>51.03</td>
<td>15.32</td>
</tr>
<tr>
<td>Females</td>
<td>50.86</td>
<td>13.97</td>
</tr>
<tr>
<td>Males</td>
<td>51.25</td>
<td>16.92</td>
</tr>
</tbody>
</table>

Note:
F (3,121) = 6.12, p< .05
* significance
High mean score in the CSEI means high degree of self-esteem.
masculinity-category group showed the highest mean score (52.03) while the undifferentiated-category group showed the lowest mean score (46.95) on the Achievement Inventory (see Table 3).

Table 3  
Mean scores and standard deviations for the Femininity-, Masculinity-, Androgyny-, and Undifferentiated-category groups on the Attitude of Achievement Inventory.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex-combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Femininity</td>
<td>48.23</td>
<td>5.48</td>
</tr>
<tr>
<td>Masculinity</td>
<td>52.03*</td>
<td>4.74</td>
</tr>
<tr>
<td>Androgyny</td>
<td>51.29*</td>
<td>4.87</td>
</tr>
<tr>
<td>Undifferentiated</td>
<td>46.59</td>
<td>5.32</td>
</tr>
</tbody>
</table>

* significant

Note:
F (3,121) = 7.26, p< .05
The Attitude of Achievement Inventory included the areas of internal locus of control, external locus of control, self-concept of ability, and attitude toward learning. For each area, the difference among groups was also measured by oneway ANOVA and the Tukey test.

There were statistically significant \( F(3,121)=7.34, p<.05 \) differences among groups on scores of the internal locus of control. The androgyny- category groups showed the highest (7.26) mean score. There were statistically significant \( F(2,121)=3.67, p<.05 \) differences in the area of attitude toward learning. The androgyny-category group showed the highest mean score (8.03). Also, there were statistically significant \( F(3,121)=3.6, p<.05 \) differences among groups on the area of self-concept of ability. Masculinity-category group showed the highest (15.78) mean score (see table 4).

**Actual Achievement**

To test hypothesis 3 and 4, subjects' actual achievement was measured by their overall performance in courses taken in their first semester of college. A percentage method is used to record students' academic achievement in most Taiwan schools. However, it is different from the Grade Point Average (GPA) method that is used in U. S. schools. Because of the difficulty of precisely transferring a percentage
Table 4

Mean score of subscales for the Femininity-, Masculinity-, Androgyny-, and Undifferentiated-category groups on the Attitude of Achievement Inventory.

<table>
<thead>
<tr>
<th></th>
<th>Femininity</th>
<th>Masculinity</th>
<th>Androgyny</th>
<th>Undifferentiated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>6.30</td>
<td>6.7</td>
<td>7.26*</td>
<td>6.68</td>
</tr>
<tr>
<td>Ext</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Ab</td>
<td>13.42</td>
<td>15.78*</td>
<td>14.74</td>
<td>13.70</td>
</tr>
<tr>
<td>At</td>
<td>7.50</td>
<td>7.44</td>
<td>8.03*</td>
<td>6.95</td>
</tr>
</tbody>
</table>

Notes:
* significant difference p< .05
--- Not significantly different in any two groups.
Int = Internal locus of control.
Ext = External locus of control.
Ab = Self-concept of ability.
At = Attitude toward learning.

score to GPA, the percentage method was used to measure the subjects' academic achievement in this present study. A correspondence of percentage score with GPA was shown in this study (see table 5).
Table 5

Frequency, mean scores, and standard deviation for the Femininity-, Masculinity-, Androgyny-, and Undifferenitated- category groups on the academic achievement.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90 or above</td>
<td>80-89</td>
</tr>
<tr>
<td>Femininity</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Masculinity</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Androgyny</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Undifferenitated</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Femininity</td>
<td>73.22</td>
<td>4.08</td>
</tr>
<tr>
<td>Masculinity</td>
<td>72.57</td>
<td>5.87</td>
</tr>
<tr>
<td>Androgyny</td>
<td>73.27</td>
<td>4.26</td>
</tr>
<tr>
<td>Undifferenitated</td>
<td>74.11</td>
<td>4.83</td>
</tr>
</tbody>
</table>

Remarks:
80 or more = A
70 - 79 = B
60 - 69 = C
50 - 59 = D
60 is the passing grade.

Correspondence to GPA:
A=4.0; B=3.0; C=2.0
The results showed that the undifferentiated-category group had the highest mean score (74.11) in academic achievement, while the androgyny-category group showed the lowest mean score (72.57) in academic achievement.
CHAPTER 5
DISCUSSION

This study investigated whether or not the various sex-role category groups would show differences on levels of self-esteem and achievement. Four hypotheses were tested in this study. The first hypothesis that predicted that the androgyny-category group would have statistically higher self-esteem on the Coopersmith Self-esteem Inventory than other groups was not supported by the results. The second hypothesis that predicted the masculinity-category group would have statistically greater self-esteem on the CSEI than femininity-category group was supported. The third hypothesis that expected the androgyny-category group to have a higher academic achievement than the nonandrogynous groups was not supported. The results of this study supported hypothesis four that the masculinity-category group had higher academic achievement than the femininity-category group. In sum, the present results are in general supportive of the masculinity model. The relation of sex role to general self-esteem found in this study is consistent with other research. However, the relationship between self-esteem and achievement may be modified by cultural differences. The inclusion of different cultural emphases in
modifying the relation between self-esteem and achievement is worthy of further investigation.

Sex-role Category Classification

The results of the sex-role category classification showed that 32% males and 23% females fell into the androgyny-category. The findings suggest that male students were slightly more likely than female students to be androgynous. Moreover, a higher percentage of female students than male students had an undifferentiated sex-roles category, although neither difference was statistically significant. These results, however, were different from the findings that were investigated by Wang and Creedon (1989) in China, in that women were more likely than men to be androgynous, and men rather than women had a higher percentage on undifferentiated sex-role category.

Few implications can be made based on the results of this study. First, being androgynous may help Taiwanese men to have more harmonious relationship with Taiwanese women since many Taiwanese women are enlightened by their higher education and demand a sex equivalent position. According to the Educational Statistics of the Republic of China (1990), there were 43.83% females and 56.18% males studying in four year colleges in Taiwan. Second, there is a large number of female teachers working in kindergarten, elementary, and
secondary schools; Taiwanese male students may be spontaneously influenced to become more androgynous by those female teachers. For example, according to the Educational Statistics of the Republic of China (1990), 98.76% teachers in kindergarten, 59.33% in elementary schools, and 50.71% in secondary schools are female. Third, since industrialization and modernization have surged rapidly in Taiwan in the last decade, more and more women were needed in the workplace in order to fulfill the needs of an industrialized society. Thus, many working women were encouraged to become more independent and competitive instead of the traditional sex-typed in which women are dependent and obedient. This perhaps was one of the reasons that in the present study more than one-third of the female subjects fell into the undifferentiated category. Those female subjects might still be confused about what an adequate sex-role category is for them in a modern society.

Self-esteem

The results of this study suggest that Taiwanese students in the masculinity-category have higher self-esteem than their counterparts. Although the results are not consistent with those findings that have been done by many researchers, in that androgyny-category individuals have higher levels of self-esteem than nonandrogyny-category individuals (Bem,
1975; Lamke, 1982; Lau, 1989), it is in line with some other researchers' findings that masculine individuals have greater self-esteem than androgynous and feminine individuals (Flaherty et al, 1980; Whitley, 1988).

In addition to the finding that masculinity-category individuals have higher self-esteem than their nonmasculinity-category counterparts, the results also indicated that the masculinity-category females have higher levels of self-esteem than the nonmasculinity-category females and masculinity-category males. This result indicated that females high on masculinity, which is a nontraditional female characteristics, tended to display stronger self-confidence and rated themselves significantly higher in self-esteem than males do.

**Attitude toward Achievement**

In this study, it was found that the masculinity-category subjects not only have higher self-esteem but also greater self-concept of ability toward achievement than their nonmasculinity-category counterparts. The results indicated that the masculinity-category subjects feel that they have good memory, good learning strategies, and self-confidence in their academic work, and they also feel that they are bright academically and satisfied with their academic achievement.
Although the androgyny-category group was slightly lower on scores of the Achievement Inventory than the masculinity-category group, they do in fact have a more positive attitude toward learning than the nonandrogyny-category groups. The results showed that androgyny-category subjects displayed the attitude that they enjoy learning in school and are pleased to work hard. Moreover, the results also showed that the androgyny-category subjects tend to have a more internal attribution than the nonandrogyny-category subjects. It was perhaps that the androgyny-category subjects have more independent and more responsible characteristics. Therefore, they displayed a more positive attitude and a more internal attribution toward learning and achievement. For example, the results in this present study shown that the androgyny-category subjects believed their success was due to their own effort. They also believed they did not need other people to encourage them to study and they study hard because they enjoy knowledge acquisition. However, the relationship between androgynous characteristics and internal attribution need further study.

**Actual Achievement**

The results showed that the masculinity-category subjects not only have higher self-esteem and positive self-concept of ability toward learning, they also performed greater academic
work than androgyny- and femininity-category groups. Although masculinity-category subjects performed greater academic achievement than androgyny- and femininity-category subjects, undifferentiated-category subjects did in fact have a higher GPA than the masculinity-category group. In the present study, the undifferentiated-category subjects had the lowest scores on the Coopersmith Self-esteem Inventory and on the Attitude of Achievement Inventory, but they did have higher scores on academic achievement in their first college year. This finding suggested that self-esteem and actual achievement may not always have a positive relationship. On the other hand, the results may also indicate that sex-role identity is an important thing for an individual, self-esteem and self-confidence can be raised only when an individual was confident of his or her sex-role identity. The individuals in the undifferentiated-category, however, acted in ways that were not consistent with any sex-role category. As a result, they had higher scores on academic achievement, but they displayed lower self-esteem and low self-confidence than individuals in other groups. However, academic performance of the students in this study need to be further assessed in future semesters to ascertain this finding.
Limitations

It is important to bear in mind that this study has its limitations. First, the instruments used were developed in the United States and have not been validated in Taiwan. As one example, the BSRI may or may not adequately assess significant features of sex roles in Taiwan. Second, the subjects were not equal in their sex numbers, and that might influence the accuracy of generalization. Third, because the reliability and validity of the Attitude of Achievement Inventory which was developed by the researcher was low, a replication is needed. Fourth, the subjects who participated in the present study were not randomly selected from classes but were selected by accidental sampling (3 whole classes were chosen); therefore, it might influence the accuracy of generalization. Fifth, the subjects in this study were freshmen in a Taiwan college; therefore, the results can only be generalized to freshmen in Taiwan colleges.

Further Study

Further research should be conducted to determine what makes so many Taiwanese youths fall into the undifferentiated sex-role category. They may be influenced by some societal and cultural factors that we were not able to identify in this present study. Further research should also determine what causes these Taiwanese youths in the undifferentiated
sex-role category to have higher academic achievement but lower self-esteem. The relationship between self-esteem and achievement among Taiwanese youths deserves further investigation.
References


APPENDIX A

Attitude of Achievement Inventory

Below are a series of statements about your personal feelings. Please read each carefully and then check the appropriate line for each response. Be assured that all responses will be kept confidential.

Describe your feelings according to the following scale:

- Strongly Disagree (SD)
- Disagree (D)
- Neutral (N)
- Agree (A)
- Strongly Agree (SA)

1. My success in school is due to my own effort. 1. SD
2. I don't need other people to encourage me to study. 2. SD
3. I have good memory. 3. D
4. My failure is due to my bad luck. 4. D
5. I have good learning strategies. 5. N
6. I have self-confidence in my academic work. 6. N
7. I study hard in order to get a good grade. 7. N
8. My success in school is due to luck. 8. N
9. I feel pleased when I am working hard. 9. N
10. I am satisfied with my academic achievement. 10. N
11. I enjoy learning in school. 11. N
12. My failure is due to my low ability. 12. N
13. I study hard in order to please my parents. 13. N
15. I study hard because I enjoy knowledge. 15. N