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LOYOLA UNIVERSITY CHICAGO

THE EFFECTS OF SOCIAL COMPARISON PROCESSES
ON THE PERCEPTION OF SELF ESTEEM AND ACHIEVEMENT
IN THE LEARNING ENVIRONMENT

A THESIS SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL OF
LOYOLA UNIVERSITY CHICAGO IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

DEPARTMENT OF PSYCHOLOGY

BY

LINDA STEINER THOMAS

CHICAGO, ILLINOIS

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CHAPTER I

INTRODUCTION

"The school authority system has certain values which, although rarely articulated in any detailed way, are communicated implicitly in hundreds of day to day ways."
Dweck and Goetz, 1978

On October 24, 1991, the Evanston Review (the local community newspaper for Evanston, Illinois) published the most recent public school test scores. Once again, the gap between white and black student achievement was present. The data, based on mean test scores, ranged from first through eighth grades and revealed that, on average, black students scored in the 40th to 50th percentile, while their white classmates scored in the 80th to 90th percentile, in reading as well as mathematics. Being that the Evanston public schools are under strict policy mandate to maintain a numerical 60/40 (minority/majority) racial balance, this disparity in achievement becomes a highly salient contrast. If the students within the schools are racially balanced then why isn't that balance reflected in their test scores? For years, school board officials, administrators, teachers, parents, as well as specialized task force members have applied strenuous efforts towards answering this puzzling question. However, to date, no workable solution has been found.

Following the publication of the test scores, an impassioned letter was submitted to the Review (November 7th issue) by an angered African-American parent. "Integration should be a means of achieving educational excellence for our entire community. There is no great advantage in attaining together-but-unequal results over separate-but-

area, the establishment of separate minority Parent Teacher Associations (P.T.A's) have developed into an emergent pattern making their existence almost commonplace. Unlike the racial segregation of forty years ago, these racial lines are being drawn out of freedom of choice and perceived necessity rather than adherence to state laws and regulations. This trend, when viewed in tandem with the ever present disparity in test scores, is evidence of the actual and perceived levels of exclusion and alienation blacks are experiencing, both academically and socially, in relation to our school systems.

Operating under the assumption that we, as a society, are genuinely interested in closing the racial gap with respect to academic achievement (an assumption open to debate), how can we best approach the problem with the realistic expectation of making a meaningful difference? The potential success in solving any problem lies in the way in which we choose to define its cause. In the words of Caplan and Nelson (1973), "...the action (or inaction) taken will depend largely on whether causes are seen as residing within individuals or in the environment".

Historically, in accordance with the principles of "old fashioned racism" (Sears, 1988), minority failure was viewed by white society as nothing more than an unfortunate character flaw, an inherent incompetence bearing no causal relationship to social context or environment. "...the picture that emerges is one of psychologists investing disproportionate amounts of time, funds, and energy in studies that lend themselves directly, or by implication, to interpreting the difficulties of black Americans in terms of personal shortcomings" (Caplan and Nelson, 1973, p. 204).

To date, both biological and environmental causes for racial differences in achievement have been proposed. I would argue, however, that regardless of what physiological differences may exist between individuals, be they due to race, gender, or other factors, they do not exist in isolation from the social environment. Moreover, in

the quest for causal agents, researchers must not overlook that subject variables not only exist in the social context, but, in all likelihood, interact with it as well. It is for this reason that interventions designed to reduce the gap in racial achievement must rely on a keener and more refined understanding of the social academic environment.

A close examination of the institutional structure and design of the American school system discloses an extremely homogeneous interpretation and presentation of the world in which we live; an interpretation which serves to validate and perpetuate the mainstream, white dominant culture. In reality, there is very little emphasis placed on the value of, or commitment to, interracial co-existence. In discussing this biased interpretation of the world, Steele (1992) argues the following:

No aspect of society contributes to this image more than schooling.

There, America is not represented as a society of groups that have struggled with each other for power, that have deeply influenced each other, that have profound interdependencies, and that have shaped a complex, distinctive society. Instead, America is presented as essentially a conquering march of Western progress. (p. 69)

In her discussion on the formation of self-esteem and perceived competence in children, Mayberry (1989) emphasizes the importance of contextual influences. She describes the development of a positive self-concept as involving two primary dimensions: 1) competencies we find in ourselves, and 2) perceived social acceptance and support by those in our social structures (see Mayberry, 1989, Rosenberg, 1981, and Crocker, 1989, for discussions on the effects of social institutions on the development of self-concepts). The striking absence of a structurally consistent, multi-cultural emphasis in our schools seems neither appropriate nor equitable in a society comprised of multi-ethnic individuals. The current system appears to enhance the

students, and perpetuate and strengthen barriers to racial equality, academically as well as socially.

Although, this conspicuous inequity appears to exist in direct opposition to the founding principles of our democratic society, its continued acceptance is systematically rooted in the self interests of the dominant white culture. Jackman and Muha (1984) make the following assertion:

Groups that occupy a dominant position in the social structure routinely manufacture an interpretation of reality and a set of normative presumptions that serve their interests. Dominant groups seek to impose a sense of order on the pattern of social relations and to persuade both themselves and their subordinates that the current organization of relationships is appropriate and equitable. (p. 762)

This manufactured construction of reality is what Sears (1988) refers to as the gap between principle and implementation. In his essay on symbolic racism, he describes the status of contemporary white prejudice as one of opposing racism in principle but remaining wholly unwilling to implement any changes to bring about racial equality. In essence, we have evolved from a society of overt racial hatred to a more subtle, insidious form of systematic, institutionalized, and essentially invisible racial boundaries. When efforts toward change are implemented however, they tend to be minimal and devoid of meaningful substance or long term effects.

The emergence of Black History Month is an example of this type of symbolic racism. This effort designed as a response to minority needs is as insulting as it is impotent. Rather than a sincere effort toward genuinely integrating black social history into the structure, Black History Month (representing a mere 10.3% of the entire

school year), is more than likely an attempt at restoring complacency within the dismayed black population. "Perhaps one of the more important, but subtle political advantages (of the dominant culture) is that it can permit authorities to control troublesome segments of the population under the guise of being helpful, even indulgent" (Caplan and Nelson, 1973).

Presumably, as students, we would prefer that a course be taught from a multi-dimensional perspective rather than from a singular point of view. Take, for example, a pilot study involving a small group of graduate psychology students. The students were presented with two opposing arguments with respect to the recent Anita Hill/Clarence Thomas controversy. Although most students agreed with only one of the perspectives, virtually all agreed that, given a choice, they would prefer a course where both perspectives were equally presented. Thus we have an irreconcilable difference. Although we apparently value a multi-dimensional education for ourselves, we nevertheless continue to accept a uni-dimensional perspective for our children, and tomorrow's adults.

Thus far I have examined the biased social perspective currently accepted as standardized practice in America schools and identified the ways in which these biases serve to protect and maintain the status quo. More interesting, however, is the investigation of what social psychological effects these biased presentations have upon individual students within the school environment.

CHAPTER II

THEORETICAL ASSUMPTIONS

Let us take the case of two hypothetical school children; one is white, the other is black. Upon arrival at school, both students are exposed to the same classrooms, teachers, texts, libraries, special events, and programs. Assuming both children are reasonably intelligent and eager to learn, the white child finds more similarity to his/her environment than does the black child. History is taught from a white perspective, illustrating one significant white figure after another. Whereas the black child may not be presented with a single significant black figure until Black History Month in February (five months beyond the beginning of school). The majority of fictional and nonfictional books in the library involve white protagonists. Whereas stories involving black protagonists typically focus on the issue of skin color rather than on the mysteries and adventures encountered by white main characters. In social studies, they learn of how states were formed and the settlement westward, with no mention of slavery or Native American genocide. And if our hypothetical school is representative of the average grade school, our students will soon discover that math and reading classes are divided into ability groupings, and somehow, the highest groups are occupied by mostly white students, whereas the lowest groupings are occupied by mostly, if not completely, black students. Assuming that this scenario depicts a reasonably realistic representation of the school environment, how would one expect our two students to develop in terms of self-esteem and achievement?

Although several psychological theories are potentially relevant to this issue, the theory considered most central to the current study is the theory of social comparison (Festinger, 1954). Simply stated, the theory of social comparison argues that individuals have an innate drive to compare themselves to others for the purposes of evaluating their own abilities and opinions. The theory is grounded in the context of cognitive consistency models which argue that individuals strive to maintain states of internal psychological balance and equilibrium. Basically, if an individual becomes uncertain about his/her personal worth or ability, he/she is said to be in a state of instability or imbalance. In an effort to reduce that imbalance, he/she will seek out a target other (a basis for comparison) against which he/she will compare him/herself. The ideal target is one which will render the most similar reflection of personal status. Finding such a target reassures the individual that he/she is not alone and this shared status allows him/her to regain a sense of internal balance and stability.

At times when an individual becomes particularly threatened, they may seek out a target other who represents what Festinger (1954) called a downward comparison. A target which constitutes a downward comparison is one who is considered to be less fortunate or capable than oneself. The process of downward comparison is based on the principal of relative deprivation. When personal instability arises due to a threatened or stressful state, the comparison of oneself to a relatively less fortunate other serves to enhance one's self-concept by the rationalization that it could be worse.

If however, an individual finds him/herself in a situation where he/she is unable to access a similar or downward comparison target, a state of instability will arise. According to social comparison theory, this instability will manifest itself in increasing levels of anxiety and turmoil until the individual finally disassociates from the group and retreats into a social environment where similar and/or downward comparisons

may be ascertained. This disassociation is often coupled with hostility, derogation, and devaluation of the rejected group.

To summarize, the basic processes of social comparison theory central to this study are as follows: a) one's self-concept will be enhanced to the degree to which one has readily available sources of similar social comparisons b) when one is threatened, one's level of stress will be lessened if one has access to the downward comparison of less fortunate others and c) if one's reference group does not offer a source of similar or downward comparisons, a state of imbalance will result causing the individual to devalue and withdraw from the group.

Thus far I have presented a set of theoretical principles, as well as a description of a practical situation. But how are the two related? As viewed from the standpoint of our two hypothetical students, let's take a closer look.

The White Student

According to hypothesis #7 in Festinger's (1954) theory, an increase in the relevance of a given context will increase an individual's sense of uniformity, thus creating a similar and stable environment (Festinger, 1954). Obviously, the school structure (perspectives, materials, etc.) poses more relevant and similar contexts for the white student, providing him/her with a stable learning environment. Recent research in social cognition has demonstrated that individuals lend more credibility to contexts which are relevant to their self-schema's and "when forming impressions they recall more of such material (Fiske & Taylor, 1991, p. 168). Thus, white students are not only more likely to perceive school as more personally significant than their black counterparts, but also will recall more information relayed in the school environment.

In integrated school settings, white students generally occupy upper level classroom tracks and black students typically occupy lower tracks. Therefore, most white

students who find themselves in academically stressful situations, will always have a readily available source of downward social comparisons from which to choose. A recent study conducted by Strack, Schwartz, Chassein, Kern, & Wagner (1990) found that "the presence of another person who was relatively worse off led to more positive judgments of the subject's own happiness." Thus, white students, typically provided with potential downward comparison others, should experience more positive feelings in school than their minority counterparts.

As seen from the above description, clearly white students have access to a consistently available basis from which to draw similar and downward comparisons. It is my assertion that this steady stream of positive stimuli serves to stabilize and enhance the level of white self-esteem and achievement, while leaving black students in a state of instability, alienation, and at a distinct disadvantage to their white classmates.

The Black Student

Drawing on the principles of social comparison theory, unlike his/her white counterpart, the black student faces many obstacles and hardships. Few materials, topics, or programs constitute relevant or similar contexts. Primary subjects such as history, social studies, and science do not routinely include or involve the contributions or experiences of black Americans. When these occasions do arise, as in the case of Black History Month, issues concerning black Americans are presented in an insular and superficial fashion, to be honored, and then replaced on the shelf until the following February. Although it could be argued that the emergence of Black History Month came about as an inclusive effort toward equalizing educational perspectives, its liabilities may far outweigh its benefits. Research on stereotyping and categorization has illustrated that isolating a particular attribute and highlighting its salience results in more rigid lines of categorization, differentiation and discrimination (Taylor, 1981). In

other words, exposure to a curriculum similar and relevant to the black student is scarce in the learning environment, and when it is pronounced, it is done so in a fashion which highlights its distinctiveness from the status quo, thus strengthening the very racial divisions it is designed to diminish.

In accordance with social comparison theory, I would argue that this lack of consistently available similar comparisons results in the devaluation, derogation, and ultimate withdrawal of the black student from the school environment. The black student, unable to secure a positive self-image through similar and relevant comparisons, develops a sense of inefficacy. "Inability to influence events and social conditions that significantly affect one's life can give rise to feelings of futility and despondency" (Bandura, 1982). In order to protect the self from these negative images, the black student responds by "dis-identifying" (Steele, in press) or, in essence, disengaging from the school structure. By devaluing its importance, the black student may counter his/her threatened state, thus regaining a positive self-concept.

Typically, when threatened, one engages in the act of downward comparison. But for the black student who normally finds him/herself at the lowest level academically, no such comparison exists. Research by Marsh and Parker (1984) on the levels of children's self-esteem has found that " ...if children are surrounded by others with higher ability, their self-esteem tends to be lower than if they were surrounded by others of lower ability" (in Wood, 1989). The inability of the black student to engage in successful downward comparison when threatened, leaves him/her with the only remaining viable alternative--withdrawal from the group. Under normal circumstances, the devaluation and withdrawal from a negative comparative group is sufficient to the re-establishment of a positive self-concept. However, the school environment is considered to be a restricted or contained group--a group to which one is virtually

unable to physically retreat from. In such a situation, undesirable social comparisons are forced upon the psyche resulting in feelings of inadequacy and failure (Shaw and Costanzo, 1982).

The combination of these processes creates a no win situation in which the black student finds him/herself unable to relate positively to the school environment, while remaining powerless to change or withdraw from it. If self-esteem is to be preserved, this restricted environment leaves black students with the following options. The student may either a) psychologically devalue and disengage from the school process or b) attempt to assimilate to its inherently biased structure. Although students attempting the latter option may be willing and eager to learn, the systematic barriers to positive social comparisons serve to deplete his/her drive and perception of innate ability (Crocker and Major, 1989) resulting in the erroneous academic self-perception that blacks are somehow inferior (Tajfel, 1982). Moreover, black students who attempt to assimilate, are criticized by other blacks who have opted for disidentification. A recent article appearing in Time Magazine (March 16, 1992) describes such a situation. As seen by those who "opt out", black students who attempt to succeed in the current system are accused of acting "white", and are rejected by their peers, thus accentuating the fact that blacks perceive the school system as catering mainly to white interests.

Summary

The disparity of the current school structure imposes a tremendous psychological disability on black students in that not only do they also lack a consistent basis for similar and relevant comparisons, but they do so in the full presence of those who have an over abundance of it. The condoning of such a cruel juxtaposition of relative deprivation has unique ramifications in the classroom environment. Research on social comparison within contained groups suggests that in most situations prone to negative

comparisons, privileged individuals will often initiate normative barriers to cushion against the hurt feelings caused by those comparisons (Goethals and Darley, 1987). However, this is not the case in the classroom. In fact, not only are these "wound barriers" never established, but competition among students is highly valued and encouraged. In Goethals and Darley's own words, "People who work within the social comparison perspective find the elementary school a frightening place. The potential for damage to children's self-esteem is high, as is the potential for children to adopt artificially low concepts of their own abilities."

More central to the aspect of self-esteem and achievement, however, is the effect of the school environment as a socializing agent. As one of the major social institutions within society, the school system has a powerful opportunity to impose social values which sanction structural inequities. According to Bourdieu and Passeron (1977), "advantages conveyed by social class become translated by the school system into performances taken as evidences of high ability, thereby perpetuating the social class structure and apparently, validating certain aspects of it."

In summary, if we are to reduce the gap in achievement and self-esteem between white and black students in academic settings, then we must gain a better understanding of the social psychological processes involved with and evoked by the environmental context. Although, previous research has demonstrated that students as early as kindergarten engage in significant social comparison behaviors, it was suggested that future research be directed toward examining the relationship between social comparison processes and competitive environments (Ruble, Feldman, and Boggiano, 1976).

Purpose

The purpose of the current study was to examine the degree to which the personal relevance of learning materials will affect the perceived ability and ultimate achievement of students in competitive settings. Research involving social comparison processes typically focuses on the dynamics between individuals and groups. However, the present study included an additional dimension to the nature of social comparison research. In addition to revealing the comparative relationships between competing students, I also expected to discover a process of comparison between the students and their materials. I assert that the varying degree of similarity between competing students, and their learning materials, will significantly interact, serving to expose the inequities which are structurally produced by our current system of education, resulting in different perceptions of ability and achievement between black and white students.

The study presented male and female subjects with a reading comprehension task. Groups were comprised of either four males, four females, or two males and two females. Each group was given a passage to read which had been designed to be perceived as either male or female relevant. A multiple choice quiz followed each passage along with a questionnaire asking subjects to rate their degree of self-confidence and ability during the task.

I predicted that males would rate themselves as more capable and demonstrate a higher level of performance when working with the male relevant passage in all male groups. Similarly, females should follow the same pattern when presented with the female specific passage in all female groups. However, I expected performance and capability ratings to be most extreme in conditions where males and females were tested in mixed gender groups. In this condition, I hypothesized that males would have highest scores when presented with male scenarios and lowest scores when presented

with female relevant passages. Conversely, I expected that females would elicit the highest scores when tested with the female specific passage and the lowest scores when presented with the male specific passage. Thus, it is the interaction between gender (a physiologically based difference) and learning materials (an environmentally based difference) which is expected to result in the largest differences in perceptions and performance.

CHAPTER III

METHOD

Subjects

One hundred sixty (80 male and 80 female) undergraduate psychology students at Loyola University of Chicago received course credit for participating in the study as part of a course requirement. Subjects were contacted by telephone and scheduled for experimental sessions.

Design

The study conformed to a 2 (male versus female) X 2 (mixed versus unmixed gender grouping) X 2 (male versus female relevant material) factorial design, with 20 subjects in each condition. Subjects were tested in groups of 4 and told that they were participating in a study interested in examining individual performance on reading comprehension tasks. The passages on which subjects were tested were based on either male or female relevant topics (see 'piloted materials' below). Twenty females (five groups) were presented with the male specific passage and 20 females were presented with the female specific passage. Similarly, 20 males were tested with the male relevant passage, and 20 were tested with the female relevant passage. Thus, a total of 80 subjects (40 males and 40 females) were assigned to unmixed gender conditions (either 4 males or 4 females), while the remaining 80 subjects were assigned to the mixed gender groupings and were tested in groups of 2 males and 2 females each. In the mixed group contexts, 20 males and 20 females were presented with the female

specific passage. The remaining 20 males and females were presented with the male specific passage.

Subjects were informed that their scores on the reading comprehension test would be compared with their fellow group members. In addition, they were told that the highest scoring member of each group would have the option of placing his/her name in a pool for a random prize drawing at the conclusion of the study. A fifty dollar cash prize was awarded to the subject whose name was selected.

Piloted Materials

The two (male and female relevant) passages were selected based on pilot testing from a group of six passages which were rated as to their degree of gender specificity. The three passages tested for their degrees of male specificity were football, sports cars, and a famous male explorer. The three female relevant topics included, skin care, the perfect haircut, and a famous female activist. A total of 60 subjects (30 male and 30 female undergraduates at Loyola University) participated in the study for course credit. Tested in same-gender groups, subjects were evaluated with respect to their degrees of reading comprehension as well as their personal ratings of each passage as to its gender specificity. Two passages (one male and one female) were ultimately selected for the main study based on subjects ratings of gender relevance. The male topic which elicited the highest degrees of male relevance was football, and the female topic with the highest degree of female relevance was skin care.

Results from the pilot data demonstrated that, overall, subjects rated football to be most male specific and skin care as most female specific. In addition, the mean level of interest in skincare shown by females was similar to mean interest ratings by males for football. Interestingly, however, males also rated skin care as personally relevant, while simultaneously considering it the most female specific topic.

Materials

The materials involved in this study took the form of individual testing packets which were distributed to each subject. The packets contained information in the following order: an instruction sheet, an informed consent sheet, a pre-treatment questionnaire designed to assess subjects' self-perceptions of their academic standing (i.e., academically speaking, how do you typically compare to other students: much worse, similar, or much better?), a one-page, single-spaced, type-written passage (either male or female relevant), a brief questionnaire in which subjects listed five topics of their choice to be used as possible passages in future reading comprehension tasks (inserted as a control for recency effects in test performance), a multiple-choice quiz (designed to assess subjects' comprehension of the reading material), followed by post-treatment questionnaire assessing subjects' self-confidence and perceived ability ratings (i.e., stress level, comfort level, perception of personal task performance as compared to fellow group members, perception of task fairness, and ratings of interest and personal relevance). With the exception of a few select items on the pre-treatment survey and the multiple choice quiz, all questions used rating scales ranging in values from -4 (not at all so) through 0 (neutral) to +4 (very much so).

Procedure

Depending upon the condition, groups of either 4 males, 4 females, or 2 males and 2 females were tested. Upon arrival, the experimenter took attendance by asking each subject to state his or her name aloud. This was done to increase the awareness of the gender make-up of the group. Following attendance, each subject received an individual testing packet. Each group member received identical packets containing either the male or female specific passage. Subjects were instructed not to advance in the packet unless specifically advised to do so by the experimenter. The experimenter

read aloud the instruction sheet which appeared on the cover of the testing packets. Subjects were asked to read along. The instructions explained that the study was interested in examining individual testing performance on reading comprehension tasks. They were told that they would be asked to read a brief passage followed by a multiple choice quiz designed to assess their levels of reading comprehension. Moreover, subjects were informed that their exams would be graded on a curve in comparison to the other members of their group, and were informed of the potential to win a \$50.00 cash prize. In order to ensure the perception of equality, subjects were told that everyone would be tested using identical materials. Finally, subjects were informed of the amount of time they would be allowed to complete the task.

Subjects were then allowed 2 minutes to read the passage. They were not permitted to proceed until the 2 minute time period had lapsed. After the 2 minute passage and the 1 minute idea generation task, the subjects were given an additional 3 minutes in which to complete the quiz. Following the 3 minutes, the subjects were asked to complete the remainder of the packet working at their own pace. Upon completion of the packet, individual information sheets describing the study were distributed and the subjects were debriefed, thanked, and excused.

CHAPTER IV

RESULTS

Three primary analyses were performed in order to evaluate the effects of the independent variables on subjects' perceptions and expectations, performance, and the relationship between performance expectations and actual performance. Prior to these analyses, I assessed the relative standing of each subject's pre-test social comparison rating, using a 2 (male versus female) X 2 (male versus female relevant passage) X 2 (mixed versus unmixed gender groupings) analysis of variance. Results showed a significant 2 way interaction between gender and group mix ($F(1, 156)=5.64, p=.019$). Interestingly, a simple effects analysis revealed that when in the presence of opposite gender group members, males rated themselves as more capable than did females ($F(1,156)=5.69, p<.05$). In the same sex groups, the difference between males and females was not significant ($F(1,156)=1.87, p=n.s.$), and the means were actually in the opposite direction (see Table 1 for mean values).

Table 1**Mean Values for Significant Differences in Pre-Test Social Comparison Ratings**

	Unmixed <u>Gender Groups</u>	Mixed <u>Gender Groups</u>
<u>Males</u>	1.33	1.80
<u>Females</u>	1.57	1.15

When comparing the means for test performance scores, a significant main effect was observed for type of passage (football versus skincare), ($F(1,156)=5.68$, $p=.018$), indicating that overall, subjects received higher test scores in football ($M=13.84$) than in skincare ($M=12.79$). However, this main effect was imbedded in a type of passage by gender interaction, ($F(1,156)=7.94$, $p<.01$). As can be seen in Table 2, and substantiated by a simple effects analysis, females performed similarly across topics ($F(1,156)=1.25$, $p=n.s.$), while males performed significantly higher with football ($F(1,156)=13.49$, $p<.01$).

Counter to predictions, group mix and passage type failed to produce significant differences for males and females. However, means observed for female test performance did reveal patterns in the expected direction. As illustrated in Table 3, females produced the highest scores when tested with males in the skincare condition ($M=13.95$) and lowest scores when tested with males in the football condition (12.70). In addition, the poorest male test scores were elicited when tested with females in the skincare condition ($M=11.90$), although these differences did not reach statistical significance.

Table 2**Mean Values for Significant Differences in Test Score Performance**

	<u>Football</u>	<u>Skincare</u>
<u>Males</u>	14.50	12.23
<u>Females</u>	13.17	13.40

Table 3**Mean Values for Non-Significant Differences in Test Score Performance**

	<u>Unmixed Groups</u>		<u>Mixed Groups</u>	
	<u>Football</u>	<u>Skincare</u>	<u>Football</u>	<u>Skincare</u>
<u>Males</u>	14.80	12.50	14.20	11.90
<u>Females</u>	13.65	12.85	12.70	13.95

Higher values denote higher test scores

Following the administration of the reading comprehension test, subjects were asked to respond to a set of perceptual questions (see appendix I for a complete itemization of questions). The effects of the independent measures on these variables were assessed by a 2(male versus female) X 2(male versus female relevant passage) x 2(mixed versus unmixed gender groupings) multivariate analysis of variance which revealed two significant main effects, one significant 2 way interaction, and one marginally significant 2 way interaction.

A significant main effect for type of passage ($F(10,147)=1.98, p=.039$) demonstrated significant overall differences between subjects' perceptions of the football and skincare passages. Univariate analyses revealed that these differences were most extreme with regards to personal interest ratings ($F(1,156)=3.13, p=.079$) and perceptions of group ranking ($F(1,156)=4.65, p=.033$). As illustrated in Table 4, irrespective of gender or group mix, subjects rated skincare as the more interesting topic, and tended to rank themselves slightly higher in that area than in football (lower rank meaning better).

Table 4

Mean Values for Univariate Perception Variables by Type of Passage

	<u>Football</u>	<u>Skincare</u>
<u>Personal Interest* in Passage</u>	1.26	1.79
<u>Perceived Rank** in Test Performance</u>	2.47	2.20

* higher values represent greater interest

**lower values represent more desirable ranking of expected test performance

A significant main effect for group mix (same or mixed gender groupings) was also indicated ($F(10,147)=2.16, p=.023$). Univariate analyses revealed significant differences with respect to group fairness (each group member having an equal opportunity to score well on the test) ($F(1,156)=3.76, p=.054$) as well as how reliably the test measured their reading comprehension skills ($F(1,156)=5.07, p=.026$). In

concordance with the theoretical predictions of upward and downward social comparisons, subjects perceived the mixed gender groupings as the less fair learning environment. Surprising however, was the finding that subjects felt most reliably evaluated in mixed gender groupings (see Table 5 for values).

Table 5

Mean Values for Univariate Perception Variables for Group Mix

	<u>Unmixed Gender Groups</u>	<u>Mixed Gender Groups</u>
<u>Reliable Evaluation of Learning Skills*</u>	.71	1.42
<u>Equivalence in Group Member Fairness**</u>	2.81	2.25

*Higher values denote more reliable evaluation of skills

**Higher values denote greater perceived fairness for group members

The main effect for passage type was imbedded in a significant 2 way interaction between gender and passage type ($F(10,147)=3.41, p<.001$). Univariate analyses showed that this interaction was mainly a function of four perception variables (see Tables 6 and 7 for F ratios and mean values respectively).

Table 6**Itemization of Univariate Perception Variable Statistics**

<u>Variable</u>	<u>df</u>	<u>F</u>	<u>Significance</u>
Perceived Performance	1,156	4.85	.029
Reliable Evaluation of Learning Skills	1, 156	4.02	.047
Fairness of Test	1, 156	14.59	.000
Interest of Passage	1, 156	23.12	.000

Table 7**Mean Values for Univariate Perception Variables for Gender by Passage Type**

<u>Variable</u>	<u>Football</u>		<u>Skincare</u>	
	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>
Perceived Performance	4.05	1.75	2.67	2.60
Reliable Evaluation of Learning Skills	2.90	1.95	1.16	2.65
Fairness	3.85	1.75	1.48	4.05
Interest of Passage	4.65	.40	2.73	4.55

Higher values denote more positive evaluations

In referring to Table 7, the data elicited the following patterns: Not surprisingly, males expected to perform best in football and poorest in skincare, while females expected to test highest in skincare and poorest in football. However unexpected, was the finding that although males expected to perform poorest in

skincare, their mean expectations still exceeded female subjects most optimistic perceptions of ability.

When asked to rate how reliable the test was in estimating learning ability, again, the pattern was replicated with males rendering the lowest ability judgments in skincare with the highest ability estimates being in football. Females reported the opposite pattern. Subjects' perceptions of fairness in the testing materials remained consistent with the previous findings. Males felt football to be more fair than skincare, while females perceived skincare as the more fair topic.

Finally, the perception variable which elicited the most extreme value was that of interest of the passage. Although males and females were more interested in football and skincare respectively, females found football considerably less interesting ($\underline{M}=.40$) than males found skincare ($\underline{M}=2.73$).

In addition, the main effects for group mix and passage type were imbedded in a marginally significant 2 way interaction between group mix and passage type ($\underline{F}(10,147)=1.79, p=.066$), with univariate analyses showing the main difference to be in relation to perceived performance ($\underline{F}(1,156)=8.37, p=.004$), and personal interest ($\underline{F}(1,156)=2.95, p=.08$). As Table 8 indicates, subjects in the same sexed groups felt they performed best with the football passage and most poorly with skincare, while rating football and skincare as least and most interesting within mixed gender settings.

Table 8**Mean Values for Perception Variables for Group Mix by Passage Type**

	<u>Unmixed</u>		<u>Mixed</u>	
	<u>Gender Groupings</u>		<u>Gender Groupings</u>	
	<u>Football</u>	<u>Skincare</u>	<u>Football</u>	<u>Skincare</u>
<u>Perceived Performance</u>	3.55	1.82	2.25	3.45
<u>Personal Interest</u>	3.30	3.33	1.75	3.95

Higher values denote more positive evaluations

The final analysis assessed the degree to which subjects' perceptions of performance correlated with their actual performance. The correlations revealed that overall, subjects were more accurate in their predictions of performance when tested in the football condition ($r=.87$) than when tested with the skincare passage ($r=.23$), ($t(162)=4.01, p < .01$).

CHAPTER V

DISCUSSION

The purpose of this study was to assess the degree to which the personal relevance of learning materials when combined with the presence of ingroup versus outgroup members affect the social comparison processes influencing one's perceptions of ability, fairness, and subsequent performance on academic tasks. It was hypothesized that subjects exposed to self-relevant learning materials in the presence of out-group members (mixed groups) would engage in downward comparisons (self-esteem enhancing behaviors) and produce the highest performance ratings. Alternatively, subjects exposed to other-relevant materials in mixed groups were expected to perform most poorly. Although the predicted higher order interaction between these variables did not reach significance, several interesting results were elicited indicating that meaningful relationships between group membership, group mix, and content of educational subject matter do exist.

Pre-Test Social Comparisons

When asked how they typically compared academically to other students, males rated themselves as significantly more capable when in the presence of females than with other males. However, females, on the other hand, rated themselves less capable when in the presence of males. It is important to note that this effect was elicited prior to the introduction of any learning material. Therefore, it was simply the presence of like versus unlike group members in a competitive learning environment which

when in the presence of males. It is important to note that this effect was elicited prior to the introduction of any learning material. Therefore, it was simply the presence of like versus unlike group members in a competitive learning environment which stimulated these differences. In addition, it appears as though the self-efficacy of males (majority group members) was enhanced by the presence of females (minority group members), while the self-efficacy of females suffered when grouped with males. This finding supports the upward/downward social comparison hypothesis illustrating that males may be benefiting from downward comparisons, while females are hindered by upward comparisons. If these comparisons are being made on the basis of majority/minority group membership (i.e., more/less social power), then this pattern may very well generalize to racial group membership as well.

Actual Test Performance

The results from actual test score performance revealed that females scored approximately the same when tested with either the female relevant (skincare) or male relevant (football) materials. However, males scored significantly higher in learning contexts involving football and lower in skincare contexts. The fact that males perform better in football than skincare is not, in itself, surprising. Indeed, one would expect this pattern of results. The point of interest lies in the fact that the pattern of results for females did not follow suit. As will be seen in the following discussion on perception variables, although females considered skincare to be more interesting than football, this preference did not alter their ability to perform equally well on both tasks.

Perceptual Variables

Following the reading comprehension task, subjects were asked to respond to a collection of perceptual items (see Appendix I for itemization of questions). These items elicited results which served as manipulation checks verifying that the male and

female relevant passages were perceived differently by each gender. The interaction of gender and passage type confirmed that, indeed, males found the football context to be more interesting, fair, and a better estimate of their learning abilities. Following the same pattern of results, females judged the skincare context to be more positive along these same variables.

In referring back to the previous discussion regarding the performance differences between male and female subjects, it is interesting to note that, although males and females found football and skincare to be of greater interest respectively, females perceived football as significantly less interesting than males considered skincare. An examination of the means reveals that when males found the material uninteresting (skincare) their test scores fell beneath those of females in the football condition (see Table 2). The pattern of results suggests that, although female performance remains consistent regardless of interest in material content, male performance is influenced to a greater degree by their personal involvement in the topics presented.

Limitations and Future Directions

There are several aspects of this study which may have limited the ability for statistical trends to reach significance. First, there is some question as to the comparability of the two passages (football and skincare). Although each passage elicited comparable ratings during the pilot phase, data gained from the primary study suggests that the football passage may have been more easily understood and comprehended. Results from the correlation between actual score and perceived performance revealed that overall, subjects were more accurate in their predictions of how well they performed in the football context, regardless of gender or group mix. Thus, equating material on the basis of gender relevance alone is not sufficient to ensure the high degree of construct validity demanded by this type of research.

In addition to the question of passage equivalence, there is some discussion concerning the element of a reward offering within each group. This was initially included in the study in order to make the element of competition a more salient quality. However, it is likely that the introduction of a reward incentive within each group served to undermine the group unity and cohesiveness presumed to exist within the unmixed group conditions. In order to draw a contrast between groups where one feels a sense of comfort and security based on group membership similarities, and groups which do not share these qualities, it is essential to protect the element of security and comfort. By instituting a within group reward, it is possible that this sense of unification was replaced with a sense of within group opposition and competition. It is perhaps this shift in focus that led to a commonalty between mixed and unmixed groups where there should have been contrast instead. This explanation would best be tested in eliminating the within group reward incentive in subsequent studies.

Finally, and perhaps most obviously, it is difficult to generalize findings from research involving gender differences to issues concerning racial differences. Although each of these physiological characteristics are permanent social identifiers, each possesses distinct qualities when interacting with opposing counterparts (i.e., black to white, male to female). There are elements which exist in the mixed gender groupings of this study which would not necessarily be present in mixed racial groupings (i.e., sexual tension, etc.). Likewise, there are dynamics which may exist between races that are absent between genders. As a result of these differences, any finding of interest brought forth in this study should be considered an indicator for additional research, and not deemed a directly transferable characteristic onto interracial interaction.

The generalizability of findings in this study are perhaps most restricted by the fact that college freshman (regardless of group membership) are accustomed to competing

in mixed group settings with a variety of material contents. However, the recognition that significant results were produced within a population of academically experienced individuals suggests that additional consideration be given to, not only what students learn, but whom they learn it with.

Conclusion

This study has demonstrated that males and females alter their perceptions of ability as a function of what group members are present in the learning environment. Moreover, we learned that their interest and performance capabilities varied as a function of the relevance (self versus other) of materials they were asked to learn. If these relationships reached significant proportions within a population of experienced academic learners, it is reasonable to predict that the effects of these variables might be even more powerful when observed among developing school children.

In conclusion, although the primary prediction set forth in this study failed to receive support, future directions for the social psychology of educational learning are implicated. Additional research is warranted in applied settings to assess the degree to which these findings are generalizable to school children of different racial and ethnic backgrounds.

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**APPENDIX A
INSTRUCTIONS**

INSTRUCTIONS

Welcome to today's experiment.

The study in which you are about to participate is interested in examining individual performance on reading comprehension tasks under various conditions. The packet before you contains the materials with which you will be working. Each packet contains a brief written passage followed by a series of questions. You will be given a two minute time period in which to read one passage. Each passage will be followed by a three minute, multiple choice quiz designed to assess your level of comprehension of the reading material. You will not be permitted to refer back to the passage at any time, therefore, it is recommended that you read the passage very carefully.

In order to assess the degree of relative standing in each group, all quizzes will be graded on a curve in relation to your fellow group members. To ensure a common basis for comparison, all testing packets will contain identical materials. In an effort to approximate the grading system employed by real academic settings, a reward system has been instituted in place of grades. If you are the highest scoring member of your group, your name will be placed in a pool for a random drawing at the end of the semester. The student whose name is chosen will receive a \$50.00 cash prize. As stated earlier, all responses are anonymous and will be kept strictly confidential.

Upon completion of each section, please stop and await further instruction from the experimenter. Please do not go ahead in packet unless you are specifically asked to do so. If you should have any questions, please feel free to ask.

At this time, please wait until the experimenter signals you to begin.

Thank you.

Your cooperation and participation are greatly appreciated.

APPENDIX B
PRE-TEST SOCIAL COMPARISON QUESTIONNAIRE

In order to evaluate the dynamics involved in academic achievement, it is often advisable to gain a fuller understanding of how individual students rate themselves and their academic environments. Therefore, before beginning the actual reading comprehension task, please take a few moments to answer the following questions.

1. **Prior to coming to Loyola, where did you live?**
 - a. in Chicago
 - b. in a Chicago land suburb
 - c. out of state

2. **Currently, where do you live?**
 - a. in an on campus dormitory
 - b. in an off campus apartment (without parents)
 - c. at home (with parents)

3. **To the best of your knowledge, what was your approximate grade point average in high school?**
 - a. 2.0-2.5
 - b. 2.5-3.0
 - c. 3.0-3.5
 - d. 3.5-4.0

4. **Overall, how would you rate your S.A.T. scores?**
 - a. below average
 - b. average
 - c. above average

5. **When applying to schools, was Loyola your...**
 - a. first choice
 - b. second choice
 - c. third choice
 - d. other

6. **In your opinion, how does Loyola compare to other universities?**

-4	-3	-2	-1	0	+1	+2	+3	+4
much worse				similar				much better

APPENDIX C
MALE AND FEMALE RELEVANT READING PASSAGES

FOOTBALL PASSAGE

If you play in the NFL and are a free spirit, our sympathies go out to you. Robots are in, moon-walkers are out. that's how the league wants it, and that's how it will stay as long as the commissioner and his cohorts in the league offices, along with the team owners legislate against creativity. Consider that any non-spontaneous on-field celebrations, whether they follow a sack, an interception, or a touchdown, are taboo. Nor are players allowed to throw the ball into the stands.

The NFL is allowing prayers on the field at the conclusion of games but has stressed that they must be quick and unobtrusive. Also, quickie prayers while a player kneels after scoring are O.K. Spiking the ball in the end zone still is allowed as long as it's not an in-your-face job. But as one defensive back with a penchant for histrionics says, "it won't be long before they want touchdowns to mean touching the ball down on the ground and leaving it there."

This whole idea of clamping down on celebrations dates back to the early 1980's. Long gone are the "fun bunch" days of massive high-fiving in the end zone, as are the days of imaginary dice games with the ball being rolled on the ground after a touchdown as the scorer and teammates gather around on one knee, looking for a natural seven. Of course, the league did back off a little last September by eliminating penalties for high-five's in the end zone and rescinding the yardage portion of the penalty for throwing a football into the stands, which carries a hefty \$1,000.00 fine. The yardage penalty was heavily criticized after Elway flipped the ball to a fan in a wheelchair following a touchdown.

Actually, the ban on throwing balls into the stands makes sense. The NFL, sensitive to the mad scrambles that often result from fans scurrying for the ball and the injuries that might result, was doing the right thing in that case. But the other areas the league has gone much too far and has stripped too much color from the games. "We like to express ourselves," says Falcon's receiver Andre Rison, one of the best and most colorful players in the league. "The fans like it too. They like to react to it. As long as we're not taunting anybody, what's wrong with having some fun?"

SKIN CARE PASSAGE

"Your skin is the body's largest organ-so it makes sense that it's easily barraged by impurities. Pollutants clog the pores, so you don't have a good exchange of nutrients, such as oxygen, leaving your skin dull, not vibrant. A poor diet can also rob your skin of its good looks. Moreover, if your circulation is somewhat subpar, water will accumulate along with impurities, possibly contributing to cellulite.

Fortunately, a variety of ways to cleanse and soothe your skin are available at spas and skin-care centers. Saunas, one of the oldest treatments around, uses heat to induce sweating-the bodies natural way to wash away toxins. Massage offers another way to detox; it boosts circulation to the skin's surface, bringing along a greater supply of nutrients and encouraging self-cleansing. Nature's best cleansers are the perfect follow-up to massage-plant ingredients and extracts, mud, seaweed and algae can be rubbed on to stimulate the skin and draw out impurities. Heat plays a key role in this regimen. If you just smear mud on your skin, it's highly unlikely the body will absorb the minerals. But if you heat that mud, the warmth will increase the mud's ability to draw toxins out through the skin. Exercise is another detox technique that anyone can do anywhere-no special training or tonics required. It increases blood flow and the movement of fluids throughout the body so that the wastes are carried away.

Many believe that leaving your skin make-up free is the best way to let it breathe-sounds as if it makes sense,...but actually the opposite is true. While no one advocates clogging your pores with heavy creams, you should be aware that unprotected skin is much more susceptible to toxins like free radicals, pollution and UV light. Today's cosmetics and skin care products fight these forces by providing a barrier-though there are times (while sleeping or exercising, for example) that it's okay for skin to go solo.

Your hair can suffer from an overload of toxins the same way your skin can, leaving it in similarly dull, drab condition. Here, however, the culprits are dead skin cells, excess sebum, environmental pollutants, traffic fumes, cigarette smoke and residue from shampoos, conditioners and other products. To give your hair back it's bounce...you should wash your hair well and often-daily if it's short; at least three times a week if it's long."

**APPENDIX D
REGENCY TASK**

RECENCY TASK

Researchers in the field of reading comprehension are always on the lookout for fresh, new ideas for future reading passages. At this time, please take a few moments to indicate in the space below, five topics, which in your opinion, would make interesting topics for future reading comprehension passages.

1. _____

2. _____

3. _____

4. _____

5. _____

APPENDIX E
READING COMPREHENSION TESTS
FOR MALE AND FEMALE RELEVANT PASSAGES

The following is a multiple choice quiz designed to assess your degree of comprehension and understanding of the preceding passage. Please circle the letter which represents the most accurate response to each question. You may only circle one response per question.

1. The main idea of the passage was to describe:
 - a. the importance of handicapped access at major sporting events
 - b. the restrictions placed on exuberant players behavior
 - c. the excitement of professional football
 - d. the role that praying plays in professional sports

2. Andre Rison, one of the best players in the league, plays for:
 - a. The Jets
 - b. The Bears
 - c. The Falcons
 - d. The Oilers

3. The fine for throwing a football into the stands is:
 - a. \$100
 - b. \$1,000
 - c. \$1,500
 - d. none of the above

4. In addition to a monetary fine, a player may also be slapped with a:
 - a. law suit
 - b. temporary suspension
 - c. yardage penalty
 - d. b and c

5. Clamping down on player celebrations began as recently as:
 - a. the 1970's
 - b. the 1990's
 - c. the 1980's
 - d. it has always been that way

6. Enthusiastic players usually celebrate by which of the following behaviors:
 - a. rolling imaginary dice
 - b. high-five's
 - c. piggy-backing
 - d. a and b

7. If done in an unobtrusive manner, which of the following behaviors is currently permitted?
 - a. rolling imaginary dice
 - b. high-fiving
 - c. spiking the ball in the end zone
 - d. none of the above

8. Which of the following is allowed after scoring or at the end of a game?
 - a. rolling imaginary dice
 - b. praying
 - c. dancing
 - d. moon-walking

9. What is the rationale behind disallowing footballs from being thrown into the stands?
 - a. the cost of wasted footballs is too high
 - b. a protective measure for handicapped fans
 - c. it takes up too much game time getting the ball replaced
 - d. to avoid injuries caused by the mad scramble of fans

10. What do fans feel about the creative expressions of the players?
 - a. they like it
 - b. they are glad the expressions are being restricted
 - c. they are indifferent
 - d. none of the above

11. As mentioned in the passage, which of the following players flipped a ball to a fan in a wheelchair?
 - a. Elway
 - b. Rison
 - c. Rice
 - d. Monk

12. The punishment imposed on the above player was...
 - a. excessive
 - b. revoked
 - c. heavily criticized
 - d. justified

13. In the past, spontaneous on field celebrations typically followed...
 - a. interceptions
 - b. sacks
 - c. a and b
 - d. none of the above

14. Who is responsible for the policies currently in place in the NFL?
 - a. coaches
 - b. team owners
 - c. commissioners
 - d. b and c

15. The decision by the NFL to ban players from tossing balls into the stands is...
 - a. sensible
 - b. senseless
 - c. unfair
 - d. b and c

16. According to the passage, one player jokingly predicts that "one day touch downs will..."
- a. return to their once exuberant state
 - b. come to mean literally touching the ball to the ground
 - c. come to mean touching an official in the end zone
 - d. be eliminated all together
17. Players mainly object to the restrictions because...
- a. they like to express themselves
 - b. the monetary fines are too high
 - c. they are already over-regulated
 - d. all of the above
18. The terms "robots and moonwalkers" refer to...
- a. the fans in the stands
 - b. the television audiences
 - c. the players
 - d. a and b
19. According to the passage, what activities are considered taboo?
- a. spontaneous on field celebrations
 - b. non-spontaneous on field celebrations
 - c. throwing the ball into the stands
 - d. b and c
20. Which of the following positions does Andres Rison play?
- a. half back
 - b. quarter back
 - c. defensive back
 - d. receiver

The following is a multiple choice quiz designed to assess your degree of comprehension and understanding of the preceding passage. Please circle the letter which represents the most accurate response to each question. You may only circle one response per question.

1. According to the passage, the skin is the body's:
 - a. most vulnerable organ
 - b. most flexible organ
 - c. largest organ
 - d. most visible organ

2. The factors which contribute to the skin's dull appearance are:
 - a. poor diet
 - b. poor circulation
 - c. pollutants
 - d. all of the above

3. According to the passage, which of the following services do skin care centers provide?
 - a. make-overs
 - b. sauna's
 - c. both a and b
 - d. neither a or b

4. Nature provides us with natural skin cleansers such as:
 - a. raw egg
 - b. mayonnaise
 - c. algae and seaweed
 - d. all of the above

5. When applying mud to the skin it is suggested that you:
 - a. apply it wet
 - b. apply it cold
 - c. apply it warm
 - d. using mud will clog the pores--it is not recommended

6. Exercise benefits the skin by
 - a. increasing circulation
 - b. cleansing pores by perspiring
 - c. not requiring the use of tonics or mixtures
 - d. all of the above

7. In protecting the skin from pollutants and ultraviolet rays, you should:
 - a. wear make-up rarely
 - b. keep skin untreated so pores can breath
 - c. apply heavy doses of moisturizer
 - d. none of the above

8. Dull hair can result from...
 - a. excess sebum
 - b. dead skin cells
 - c. genetic predisposition
 - d. both a and b

9. It is recommended that you shampoo long hair:
 - a. once a day
 - b. once a week
 - c. twice a week
 - d. three times a week

10. According to the passage, when is suggested that you let skin go solo?
 - a. when exercising
 - b. when bathing or showering
 - c. when sleeping
 - d. a and c

11. In what ways do skin treatments such as sauna's benefit the skin?

- a. they promote circulation
 - b. they induce perspiration
 - c. they remove toxins
 - d. b and c
12. What is one of the oldest methods of cleansing the skin?
- a. the application of plant ingredients and extracts
 - b. washing with soap and water
 - c. sauna's
 - d. none of the above
13. How does exercise remove toxins from the skin?
- a. by increasing blood flow
 - b. by increasing the movement of fluids throughout the body
 - c. by helping to eliminate wastes
 - d. all of the above
14. What skin treatment boosts circulation to the skin's surface?
- a. exercise
 - b. massage
 - c. sauna's
 - d. a and b
15. Dead skin cells can result in which of the following conditions?
- a. poor complexion
 - b. dull hair
 - c. the development of cellulite
 - d. a and b
16. According to the passage, short hair should be shampooed...
- a. every other day
 - b. three times a week
 - c. every day
 - d. none of the above

17. What does the passage recommend as "the perfect follow-up to massage"?
- a. exercise
 - b. the application of natural ingredients
 - c. a sauna
 - d. all of the above
18. The application of mud to the skin is beneficial because...
- a. it creates a protective shield
 - b. the skin absorbs it's nutrients
 - c. mud will clog the pores--it is not recommended
 - d. a and b
19. Perspiration is beneficial to skin tissue because...
- a. it helps to eliminate toxins
 - b. it opens the pores
 - c. it provides skin with much needed moisture
 - d. a and b
20. Why are natural ingredients such good skin cleansers?
- a. they stimulate the skin and remove impurities
 - b. they are milder than man made chemicals
 - c. a and b
 - d. none of the above

APPENDIX F
POST-TEST PERCEPTUAL RATING SCALE

This segment concludes the reading comprehension task. However, in order to aid in the understanding of what processes are involved in the learning environment, you are now asked to share some of your personal perceptions. Please indicate, for each of the following items, the response which best represents your impressions during the reading comprehension task. This is not a timed exercise, therefore, you may take as much time as you wish.

1. I felt the experience was stressful.

-4	-3	-2	-1	0	+1	+2	+3	+4
not				average				very
at all	so							much so

2. I felt calm and comfortable.

-4	-3	-2	-1	0	+1	+2	+3	+4
not				average				very
at all	so							much so

4. If I had to guess, I would say my performance on this test was...

-4	-3	-2	-1	0	+1	+2	+3	+4
very				average				very
poor								good

5. I feel this comprehension task is designed to reliably evaluate one's reading skills.

-4	-3	-2	-1	0	+1	+2	+3	+4
not				neutral				very
at all	so							much so

6. Basically, I feel it was a fair test of my abilities.

-4	-3	-2	-1	0	+1	+2	+3	+4
not				neutral				very
at all	so							much so

7. At least, I found the passage to be interesting and relevant.

-4	-3	-2	-1	0	+1	+2	+3	+4
not				neutral				very
at all	so							much so

8. As compared to the others in my group, my score will probably be...

-4	-3	-2	-1	0	+1	+2	+3	+4
much				similar				much
worse								better

In the space below, you are asked to rate your estimated test performance in relation to the other members in your group. Please place a check mark (X) in the space where you believe your test score is most likely to fall.

1. _____ (highest score)
2. _____ (second highest)
3. _____ (third highest)
4. _____ (lowest score)

This concludes today's study.
Thank you very much!

APPENDIX G
SOME INFORMATION ABOUT THE STUDY

SOME INFORMATION ABOUT THE STUDY

In the field of social psychology, much research has been done regarding the development of self-esteem and achievement. The theory of social comparison (Festinger, 1954) states that individuals have an innate tendency to evaluate their own levels of competence and self-esteem by drawing comparisons between themselves and others. According to this theory, when individuals have access to readily available positive comparisons, their levels of confidence and ability increase. Moreover, when exposed to those less capable than themselves, individuals tend to make downward comparisons, seeing themselves as better off, also resulting in increased ability and self-esteem. However, when positive and/or downward comparisons are unavailable, or withheld, the individual's level of confidence and ability for achievement appears to diminish.

Because self esteem and achievement are issues central to both successful learning and social comparison theory, this study was designed to examine the effects of social comparison processes in the learning environment. Previous research has demonstrated that the concepts of self-esteem and achievement are particularly important to the success of minority students (Aronson & Oscherow, 1980), but little attention has been given to the learning materials used in classroom settings.

Stated simply, my hypothesis argues that the degree to which study materials are personally relevant to the learner, will either serve to facilitate or hinder his/her level of performance and self-esteem. In an effort to test this theory, subjects are asked to read a passage, followed by a brief quiz testing their degrees of content comprehension. The subjects are selected by gender and given passages containing either female relevant or male relevant subject matter. If predictions are supported, females will rate themselves most confident and capable in instances where the materials contain female specific content. The converse is thought to hold true for males as well. Moreover, conditions in which subjects worked in mixed gender groups are expected to elicit the most extreme scores.

If you have any further questions about the study, please feel free to stop by Rm. #667 DH or contact me at 508-3072 and leave a message for Linda Thomas. In the event you are interested in learning more about this area of research, I have provided you with a few references below. Thank you for your time and cooperation.

Festinger, L. A theory of social comparison processes. *Human Relations*, 1954, 7, 117-140.

Aronson, E. & Oscherow, N. (1980) Cooperation, prosocial behavior, and academic performance: Experiments in the desegregated classroom. In L. Bickman, Applied social psychology annual, Vol. 1 (pp. 163-196). Beverly Hills, CA: Sage.

VITA

The author, Linda Steiner Thomas, was accepted into the doctoral program in Applied Social Psychology at Loyola University Chicago in August of 1991. Since that time, she has been involved in research efforts relating to various aspects of intergroup prejudice.

As graduate assistant to Dr. R. Scott Tindale, she has supervised many projects involving group and individual decision making, co-presenting presentations at the Midwestern Psychological Association annual convention, as well as the Society for Judgment and Decision Making.

Ms. Thomas's future research goals will address perceptual biases in teacher expectations and other matters of importance relating to the social psychology of educational issues.

APPROVAL SHEET

The thesis submitted by Linda Steiner Thomas has been read and approved by the following committee:

Dr. R. Scott Tindale, Director
Associate Professor, Psychology
Loyola University Chicago

Dr. Eaaron Henderson
Assistant Professor, Psychology
Loyola University Chicago

The final copies have been examined by the director of the thesis and the signature which appears below verifies the facts that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

11/23/93
Date

R Scott Tindale
Director's Signature