EFFECTS OF THE FROG POND POPULATION ON SELF-CONCEPT

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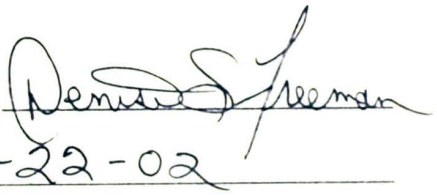
Signature 

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A Thesis

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Denise Simpson Freeman

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ABSTRACT

Many studies have shown that self-concept is influenced by social context. The frame of reference hypothesis assumes that a student's reference group or "frog pond" influences their academic self-concept. Many studies have investigated various aspects of the relationship between social comparison and self-concept. One aspect that has yet to be considered in the social comparison/frame of reference theory is the population of the frog pond from which the student has based their comparisons. The inclusion of school population is a unique feature of this investigation. The present study investigated the students' perceptions of academic self-concept as a pre-college student in their high school frog pond, and also assessed academic self-concept as a college student in their present campus frog pond. The Self Description Questionnaire-III Academic Self-Concept scales were administered in both assessment scenarios. It was hypothesized that a negative big-fish-little-pond-effect (academic self-concept decline) would be seen when students from a high school with less than 100 in the graduating class assessed their academic self-concept in their present campus frog pond. Results indicated that although Group One students' and Group Two students' perceptions of General Academic Self-Concept do change significantly from high school to college, their academic self-concepts at the college level do not differ at a statistical significance.

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CHAPTER I

INTRODUCTION

Self-concept has been a topic of psychological inquiry for over one hundred years. The first introductory textbook in psychology, written by William James in 1890, devoted the longest chapter to self-concept and introduced many issues currently being studied (Marsh, 1990a). One significant reason is that self-concept has been shown to have a significant impact on human behavior and is valued as a desirable outcome in many educational and psychological situations (Campbell, 1990; Marsh, 1990a). Previous studies have suggested that our reaction to success and failure may be dependent upon our view of self (Dutton & Brown, 1997; Hamachek, 1995).

As an emphasis on the noncognitive outcomes of education (i.e., improvement of a student's self-concept as an educational outcome in its own right) educational policy statements typically emphasize the importance of developing and maintaining a positive self-concept as one of the most important goals of education (Marsh, Chessor, Craven & Roche, 1995; Shavelson, Hubner, & Stanton, 1976). Many studies (e.g., Bachman & O'Malley, 1986; Marsh, 1997; Skaalvik & Hagtvet, 1990) have noted that a positive self-concept has frequently been identified as an interceding variable that promotes the attainment of desired goals such as academic achievement in school. Hamachek (1995) theorized that the interactive and reciprocal nature of self-concept suggests that the student must initially do well in school in order to have that positive self-concept. Byrne (1996) suggested that the interest in academic self-concept stems from the belief

that it has motivational benefit that will lead to changes in academic performance.

Regardless of theory, there is no denial that the relationship between self-concept and academic achievement is strong (Hamachek, 1995; Marsh, 1990a; Marsh, 1990d; Marsh, 1997). Although the correlation of self-concept and academic achievement is substantial, a stronger correlation is with the specific domain of academic self-concept (Chambres & Martinott, 1999; Durrant, Cunningham & Voelker, 1990; Marsh, 1990b; Marsh, 1992; Skaalvik & Hagtvet, 1990).

Whether an outcome itself or a variable that helps explain achievement outcomes, self-concept is considered to be a critical variable in education and in educational evaluation and research (Shavelson et al., 1976). A study by Grolnick, Ryan and Deci (1991) investigated the inner processes that lead to student achievement and proposed that students' self-perceptions of academic ability are shown to be more significant than others' objective evaluations (e.g., teachers, parents). Thus, the value of a positive self-concept is monumental.

Overview of the Structure of Self-Concept

Self-concept is a hypothetical construct that has been defined as a complete and thorough description of self (Reber, 1995). Definitions of self-concept are often imprecise and may vary from study to study. Oftentimes, self-concept definitions overlap in various ways. In broad terms, self-concept is a person's perceptions of self, formed through experiences with the environment and influenced by environmental reinforcements and significant others (Shavelson et al., 1976).

The great diversity of an individual's experiences constitutes the data on which perceptions of self are based (Byrne & Shavelson, 1986; Marsh, 1990a; Shavelson et al., 1976). These experiences and the meaning the person attaches to them are categorized and are generally a reflection of the person's particular culture (Byrne & Shavelson, 1986). A child's descriptive statements about himself may revolve around his family, friends, and school. These experiences and the meaning the child attaches to them demonstrate one of the features of self-concept (Shavelson et al., 1976). Thus, the self-concept is organized in the manner that people categorize the information they have about themselves (Marsh, 1990b; Shavelson et al., 1976). Although self-concept theory has been modeled from various perspectives, the Shavelson model (Shavelson et al., 1976) is the one that has provided the basis for most of the validation work associated with academic self-concept.

Multidimensional/Hierarchical Structure of Self-Concept

Self-concept is multidimensional (Shavelson et al., 1976). Prior to 1980, empirical research provided little support for the multidimensionality of self-concept and focused on a global or general self-concept. However, later studies clearly identified distinct facets of self-concept (Bachman & O'Malley, 1986; Byrne, 1984; Marsh, 1990b; Shavelson et al., 1976). These facets reflect the category system adopted by the individual and/or shared by groups. According to the Shavelson et al. model of self-concept, these facets of self-concept form a hierarchy from individual experiences in particular situations, located at the base of the hierarchy, to general self-concept, located at the apex. In this hierarchical

structure, the behaviors in a specific situation are at the base. The inferences about the self are in sub areas (e.g., Math and English components contribute to academic self-concept, whereas physical, social, and emotional components contribute to nonacademic self-concept) and the generalized inferences about the self are at the apex of the model. In addition, Shavelson et al. theorized that the self-concept becomes increasingly multifaceted with age.

In the Shavelson model, general self-concept encompasses both non-academic self-concept as well as academic self-concept. Nonacademic self-concept is divided into three areas: social self-concept (which is subdivided into relations with peers and with significant others); emotional self-concept; and physical self-concept (which is subdivided into physical ability and physical appearance). Academic self-concept is divided into self-concepts in particular subject areas (e.g., math, English). At the base of the hierarchy, self-perceptions are closely related to the evaluations of personal behavior in particular situations (Marsh, 1990a; Marsh, 1990b; Shavelson et al., 1976). The hierarchy then moves to inferences about the self in subareas (e.g., English and mathematics components contribute to academic self-concept, whereas physical, social, emotional components contribute to nonacademic self-concept), and then to inferences about the self in general. Byrne (1986) reported data that supported this hierarchical structure of self-concept. However, the nature of the hierarchy has been debated in other studies (Byrne & Shavelson, 1986; Marsh, Parker & Smith, 1983).

In 1985, Shavelson and Marsh revised the Shavelson et al. model to reflect more accurately results of research indicating that the structure on the nonacademic side of the hierarchy was not differentiated clearly. The final hierarchical model posited two second-order, academic factors and a second order nonacademic factor. This revision combined the physical and social factors into a single second-order nonacademic factor (Marsh, 1990b). Research data concluded that students differentiate self-concepts in different school subjects to a much greater extent than had been previously recognized (Marsh, 1990b). Most investigators, however, still represent self-concept with a single score that is called overall, total, or general self-concept. Marsh (1990a) concluded that the general self-concept is not particularly useful in that it fails to reflect the diversity of specific self-facets. He stated that more emphasis should be placed on content-specific dimensions of self-concept. Several reviews of research indicate that self-concept cannot be adequately understood if its multidimensionality is ignored (Byrne, 1984; Byrne & Shavelson, 1986; Marsh, 1990a; Marsh, 1990d; Marsh, 1993; Marsh, 1994; Marsh & Shavelson, 1985).

Support for the multidimensionality of self-concept comes from work with Marsh's Self Description Questionnaire (SDQ; Marsh, 1987a; Marsh & Parker, 1984) The Self-Description Questionnaire is an instrument designed to measure three areas of academic self-concept and four areas of nonacademic self-concept that were derived from the Shavelson et al. model of self-concept. The clear separation between academic and nonacademic self-concepts that is

achieved with the Self-Description Questionnaire is of particular interest in this study.

Academic Self-Concept

Research over the past 15 years has yielded a substantial amount of evidence that confirms that academic self-concept is also multidimensionally structured (Byrne, 1996). Using Shavelson et al.'s model of self-concept (1976), global self-concept was split into two facets—academic and nonacademic (i.e., physical, social, emotional) self-concepts. According to Shavelson et al. academic self-concept describes the concept of self in relation to the feedback the student has assimilated and internalized regarding his academic performance. Although there is no precise definition of academic self-concept, it can be characterized by two elements common to most research. First, academic self-concept reflects descriptive (e.g., "I like math") as well as evaluative (e.g., "I am good at math") aspects of self-perception (Byrne, 1996; Marsh, 1990a). Second, self-perceptions associated with academic self-concept tend to focus on scholastic competence, rather than attitude (Byrne, 1996).

Byrne's (1996) research has shown that Marsh and his colleagues have done the most extensive testing of the multidimensionality of academic self-concept. Based on more than two-dozen factor analyses of 12,266 sets of responses to items, Marsh has demonstrated significant support for the multidimensionality of self-concept and academic self-concept. Marsh and Shavelson (1985) found that English and math self-concepts each combined separately with academic self-concept to form two academic self-concept

facets—academic/English self-concept and academic/math self-concept. Academic self-concept measures are designed to reflect individual's self-perceptions of their academic ability, whether or not they agree with objective indicators or the perceptions of others (Marsh, 1990c).

Self-Concept Theories

A growing number of studies have addressed issues related to the structure and measurement of the self-concept. Various works have yielded substantial information related to the construct (e.g., Bachman & O'Malley, 1986; Byrne, 1984; Byrne, 1996; Campbell, 1990; Marsh, 1990a; Marsh, 1990b; Marsh, 1994; Marsh & Parker, 1984; Shavelson et al., 1976). Several theoretical views on the development and maintenance of the self-concept emphasize the importance of the social environment. Rogers, Smith, and Coleman (1978) emphasized the interplay between the individual and the individual's environment. Current theories view the self-concept as a cognitive schema that organizes abstract and concrete memories about the self and controls the processing of self-relevant information (e.g., Campbell, 1990; Marsh, 1994).

Model/Mirror Theories

Model theory suggests that the child develops a sense of self-regard through the process of imitation of others in their immediate environment. Mirror theory, or what symbolic interactionists (e.g., Cooley, 1902; Purkey, 1970; Shrauger & Schoeneman, 1979) call the "looking glass" theory, suggests that the self-concept is a product of the reflected appraisals of others significant to the child (Marsh, 1990a; Marsh & Parker, 1984). Mirror theory is closely related to

Festinger's (1954) theory of social comparison. Each of these theories distinguishes the individual's social group as a determinant of the development and maintenance of that individual's self-regard.

Frame of Reference Hypothesis

According to Marsh (1986; 1987b, 1990a; 1990b), academic self-concepts are formed in relation to two distinct comparison processes or frames of reference: external comparison process and/or internal comparison process. According to the external comparison process students compare their perceptions of their academic abilities with those of other students in their immediate frame of reference, such as their school or classroom. In the internal comparison process, students compare their self-perceived academic abilities in any one area with their perceived abilities in other academic areas. In the internal comparison framework, students would have a more positive self-concept in their best subject, regardless of whether their abilities are above or below average in relation to the abilities of other students. Students must then compare their abilities with some frame of reference. Given that individuals have different frames of reference leads to the assumption that they will have different academic self-concepts.

To better understand how these frames of reference work, an applicable scenario would be to consider students who may accurately perceive their math and English skills to be below average but whose math skills are better than their English skills. These students may have math skills that are below average relative to the other students (external comparison) but these skills may be above

average in relation to their English skills (internal comparison) (Marsh, 1990d). In this case, the poor student may have unrealistically high self-concepts in their best subjects, whereas the good student may have what appears to be unrealistically low self-concept in their poorest academic subjects. This external process has been well documented in self-concept research (Byrne, 1984; Marsh, 1986; Marsh, 1987b; Marsh & Parker, 1984).

Understanding the processes utilized by students to formulate their academic self-concept is important in meeting the needs of students. Implicit in the frame of reference model is the assumption that social comparison is one of the causal determinants of self-concept (Marsh, 1990d).

Social Comparison Theory

There seems to be little doubt that social comparison processes play a crucial role in self-concept development. The basic assumption that self-concepts are influenced by social context has a long history in social psychology (e.g., Bachman & O'Malley, 1986; Cooley, 1902; Mead, 1934). Festinger's social comparison theory (1954) posits as a principle of belief that people evaluate themselves by comparing themselves to others (Davis, 1966; Festinger, 1954; Gibbons, Benbow & Gerrard, 1994).

In 1954, Festinger hypothesized

> ....there is a drive to accurately evaluate one's opinions and abilities, that this evaluation is frequently only possible by comparison with others and that the comparison tends to be made with others who are close to oneself on the particular ability or opinion in question (p. 124).

> ....when the only comparison available is a very divergent one; the person will not be able to make a subjectively precise evaluation of his opinion or ability (p. 121)
>
> ....when the reported performance of others is about equal to his own score, the stability of his evaluation of his ability is increased (p. 122)

In an academic setting, students tend to evaluate their academic abilities by comparison with other students. Most of the others used in those comparisons are ones that are known to the person, or are members of the same "frog pond" (Davis, 1966). Research has also shown that the person's relationship with the others has a substantial impact on self-evaluation (Tesser, Millar & Moore, 1988). Comparison with others whose performance level is close to one's own is more likely to provide information that has diagnostic value and can be used to evaluate one's own performance (Gibbons et al., 1994; Tesser et al., 1988). This idea has been established through various social comparison theory researches. Festinger (1954) stated there exists evidence from studies clearly showing the instability of evaluations of abilities in the absence of comparison with other persons. According to Festinger, when the ability of others is about equal to one's own, the stability of his evaluation of his ability is increased. However, among different groups, we may well expect to find relative dissimilarity or decline in academic self-concept. Festinger suggested that members of minority groups, when unable to achieve complete incomparability with other groups (e.g., although dissimilar, they may have some comparable attributes), might be somewhat less secure in self-evaluations. The minority group would seek stronger support within itself and be less well able to tolerate difference of

opinion or abilities that were relevant to that group. Festinger reported that when the situation arises where a person's performance is below others, feelings of failure and feelings of inadequacy with respect to this ability might be apparent. Social comparison research has also shown that people may then choose downward comparison targets that would make them feel better and protect their self-esteem (Marsh et al., 2000).

Davis' Frog Pond Effect (1966) Study

In 1966, Davis introduced the "frog pond" metaphor to suggest that students may develop relatively low aspirations when classmates with high abilities surround them. He was one of the first researchers to present an analysis of the frog pond effect, which later became known as the big-frog-little-pond effect and/or big-fish-little-pond effect). In 1961, using the campus as a frog pond, Davis collected data from a college population that included their perceptions of academic ability, grade point average, career aspirations, and school quality. After looking for intercorrelations among these variables he hypothesized that students who attend higher quality schools would possess more negative academic self-conceptions and lower career aspirations than students who attend lower quality schools. Davis believed that the students attending higher quality schools would perform worse on academic self-concept scales in relation to their peer group than students who attend lower quality schools. Findings were quite in agreement with the notion that students judge themselves by local standing.

Rogers, Smith, and Coleman (1978) Study

Several theoretical views on the development and maintenance of the self-concept emphasize the importance of the social environment. In the Rogers et al. (1978) study, it was hypothesized that the relationship between academic achievement and self-concept is manifest most clearly within the context of specific social comparison groups or classrooms. Two predictions were made: 1) it was predicted that academic achievement and self-concept would be positively related, even in underachievers in special education classrooms; 2) it was predicted that the self-concept/academic achievement relationship would be most strongly evident when academic standing within immediate peer-reference groups (i.e., classrooms) was incorporated into the analyses. Subjects in this study were 159 academic underachievers in 17 classrooms in seven elementary schools. Children had been placed in these classrooms on the basis of severe academic deficits.

In the Rogers et al. (1978) study, children were administered tests and assessments (e.g., Metropolitan Achievement Test & Pier-Harris Children's Self-Concept Scale) to ascertain necessary information. Two series of analyses were computed. First, all 159 were pooled together and rank ordered on the basis of their achievement scores and were assigned either high, medium, or low achieving group status. Second, the subjects were rank ordered within each classroom according to their performance. Statistical analysis yielded significant group differences. When students were assigned to either a high, medium, or low

achievement group within their particular classroom, a strong positive relationship was found between academic achievement and self-concept.

In contrast, when analysis was conducted irrespective of within-classroom achievement standing, no relationship was found. These results strongly supported the basic hypothesis that the relationship between academic achievement and self-concept is manifest most strongly within the context of the social comparison group or classroom. Rogers et al. (1978) further noted that the dimension of self-concept that should be most sensitive to within-classroom social comparisons is self-concept of academic ability. Rogers et al. posited that despite the limitations of generalizability, the findings clearly support the hypothesis derived from social comparison theory that the most meaningful way to understand the relationship between academic achievement and self-concept is within the context of the social comparison group. When comparative results are favorable, the student's self-concept is enhanced, but if the comparison is unfavorable, the student's self-concept may be diminished (Rogers, Smith & Coleman, 1978).

Big-fish-little-pond effect

The existence of the big-fish-little-pond effect (BFLPE) has been supported by research (Marsh and Parker, 1984) using a wide variety of approaches. The social comparison theory underlying the BFLPE (Marsh, 1984; Marsh, 1990d; Marsh & Parker, 1984) posits that students compare their own academic ability with the abilities of other students in their reference group and

use this as one basis for forming their own academic self-concept. As noted earlier, this reference group might be their school or their immediate classroom.

According to Marsh (1990d), being an average-ability student in a high-ability group of classmates may affect academic self-concept such that it is:

> (a) below average because the basis of comparison is the performance of above average students (i.e., a BFLPE or contrast effect)
> (b) above average by virtue of membership in the high-ability grouping (i.e., a reflected glory, group identification, or assimilation effect)
> (c) average because it is unaffected by the immediate context of the other students
> (d) or because (a) and (b) occur simultaneously and cancel each other (pg. 108)

Marsh (1990d) Study

In 1990 Marsh investigated how different frames of reference affect the formation of math and English self-concepts. He combined research on the internal/external (I/E) model and the BFLPE into a single theoretical framework. Using the High School and Beyond (HSB) database of 14,825 students from 1,015 high schools that had national representativeness with good academic achievement measures, he used self-report items to infer math self-concept and English self-concept. Results of his study suggested that general academic measures of self-concept should be replaced with math and English measures of self-concept. Because math and English self-concepts appeared to be nearly uncorrelated, it may be unjustified to combine these two measures into a more general measure of academic self-concept. Marsh posited that separate math and English self-concepts would better predict academic behaviors and

accomplishments, as well as provides insight into academic interventions (Marsh, 1990d).

Marsh and Parker (1984) Study

In 1984, Marsh and Parker designed a study to determine if it is "better to be a relatively large fish in a small pond even if you don't learn to swim as well". In other words, the study was designed to determine if socioeconomic status (SES) had an effect on self-concepts of children. Earlier studies of this nature had found that disadvantaged children actually had higher self-concepts than advantaged children. Marsh and Parker's study tested the generality of those findings in an Australian setting. It was hypothesized that their results would indicate that attending a low-SES/ability school causes academic self-concept to be substantially high than does attending a high-SES/ability school. It was also hypothesized that neither individual nor school-average measures of SES and academic ability are substantially correlated with self-concept in nonacademic areas. Marsh and Parker's subjects consisted of 305 sixth-grade students attending five coeducational schools. Three of these schools (125 students) represented the areas with the highest socioeconomic level in Wollongong, Australia. The other two schools (180 students) were representative of the areas with the lowest socioeconomic levels in Wollongong. The researchers were given access to the school records to obtain student IQ scores and parents' occupations. The income level of each occupation was estimated and these estimates were averaged. The mean estimated weekly income was $501 in the high-SES sample and $283 in the low-SES sample. Their classroom teachers

were asked to rate each student in terms of their academic ability and self-concept. Ratings of academic ability were made in the areas of reading, mathematics, science, and overall academic ability. Ratings of self-concept were made in each of the seven areas assessed by the Self-Description Questionnaire-II (SDQ; Marsh, 1992a). Correlations between student self-concepts and the variables were determined separately for the high-SES schools, the low-SES schools, and the entire sample of schools.

In each set of correlations, family SES tended to be positively correlated with self-concept in academic areas, but unrelated to self-concept in nonacademic areas. Particularly in the high-SES schools, the higher was the family SES, the higher was the academic self-concept. In contrast, school SES tended to be negatively correlated with self-concept. Both test scores and teacher ratings were positively correlated with student academic self-concept, but not with nonacademic self-concept. These results emphasize the distinctiveness of academic and nonacademic self-concept, as well as provide further support for the multidimensionality of self-concept.

Bachman and O'Malley (1986) Study

Using the Marsh and Parker (1984) findings as a model, Bachman and O'Malley (1986) examined whether school academic climates have any impact on self-concepts of academic ability, global self-esteem, and long-range educational attainments. In their study, "school climate" was designated as the ability levels of classmates that were operationalized as school mean ability scores. They investigated the relations between academic self-concept and the

broader dimension of global self-esteem, as well as used these analyses to consider whether school mean ability levels show any clear impact on long-term educational attainment.

Unlike Marsh and Parker, Bachman and O'Malley (1986) based their hypothesis on the assumption that factors outside the school (e.g., siblings, friends, acquaintances from other schools, parents, and other adults) would play an important part in forming self-concepts by adding a broader frame of reference. They hypothesized that the uncontrolled correlation between school mean ability and individual self-concepts would be positive, and if they controlled for individual ability, the relation between school mean ability and individual self-concepts of ability should be negative.

Bachman and O'Malley used data from the Youth in Transition project that was a large-scale longitudinal study of white, male, 10^{th}–11^{th} graders in public schools throughout the United States. They used three measures of ability or aptitude; overall average grades for the previous year; self-report of ability comparisons; self-esteem scales adapted from Rosenberg; and the schools'9 ability means were computed for each of the three tests of academic ability. Analysis of their findings provided evidence confirming the prediction derived from the frame of reference hypothesis: that if individual ability is held constant, then there is a negative impact of school mean ability on individual self-concept of academic ability. However, their findings indicated a much smaller negative effect than did Marsh and Parker's (1984) study. Bachman and O'Malley posited that their approach provided a better opportunity for school climate effects to

emerge as important. Bachman and O'Malley suggested that their findings indicated that the dimension that really matters for self-concept of ability is not school climate but actual ability. It is their belief that if we want students to do better academically, the best approach would be to help them maximize the use of their aptitudes and raise their abilities. That, in turn, would raise their self-concepts.

Marsh (1987b) Study

The big-fish-little-pond effect (BFLPE) has also been used as a term to refer to the paradoxical finding that students who attend more prestigious schools possess more negative academic self-conceptions that equally capable students who attend less prestigious schools (Marsh, 1987a; McFarland & Buehler, 1995). In this sense, BFLPE is a specific example of more general frame of reference effects. In Marsh's well-designed study of the frog-pond phenomenon, a high school was classified as higher quality schools on the basis of its student body's mean score on a standardized ability test.

Results of Marsh's study further revealed that students at lower quality schools had higher grade point averages than equally capable students at high quality schools. Results also indicated that the grade point average of the student was a strong predictor of academic self-concept. Marsh's research also indicated that students academic self-concept is lowered when they receive feedback that their performance is inferior to their peers, but academic self-concept is higher when their performance is superior to their peers (Marsh, 1987; McFarland & Buehler, 1995). Marsh's study provided one of the strongest examples in which

social comparison theory predictions have been validated in an imposed social comparison paradigm. The frame of reference was more clearly defined than in most other research studies.

Chambres and Martinott (1999) Study

A research study designed by Chambres and Martinott (1999) selected sixty 8th graders (32 girls and 28 boys) that varied on their academic standing: 20 students were good students, 20 were average students, and 20 were poor students. The students' grade point averages were calculated as a factor in the design. Students completed a self-concept questionnaire that contained 21 traits. Fourteen traits were related to school life and seven traits were irrelevant to school life. The students rated the extent to which each trait was self-descriptive on 7-point scales. The self-description scores were examined using a 3 x 3 analysis of variance (ANOVA) with academic standing as a three-level, between-subject factor (good, average, poor) and the type of item as a three-level, within-subject factor (academic superiority, academic inferiority, irrelevant).

Their findings suggest that the good students' beliefs were strongly structured by the academic domain; students whose academic standing was average (i.e., sometimes good and sometimes poor) was generally more dependent upon their current position; and the poor students' self-concept appeared to be structured by both the academic domain and other dimensions. Chambres and Martinott suggested that academic achievement, self-concept, and self-attributions are interwoven in such a way that a change in any one would produce changes in the other, thus academic achievement and self-

concept may influence each other in a reciprocal manner.

Marsh, Kong, and Hau (2000) Study

The big-fish-little-pond effect (BFLPE) is recognized as specific to academic self-concept (Marsh, Kong & Hau, 2000). Marsh and his colleagues investigated the effects of school-average achievement and perceived school status on the academic self-concept of students in Hong Kong. The BFLPE was evaluated for a large cohort of high schools in Hong Kong, which has one of the most highly achievement-segregated school systems in the world. At the end of Grade 6, secondary school placements for Grade 7 are allocated according to parent's choice in the order of merit of students' school examination results.

The participants were Chinese secondary students attending 1 of 50 high schools. The longitudinal study covered a four-year period beginning at the end of Grade 6. At the end of Grade 6 achievement test scores were obtained to infer the pretest achievement level, as well as the school average achievement level. In each of the following three years achievement tests were administered, and during the last two years survey materials were collected by each school. A Chinese translation of the Self Description Questionnaire-II (SDQ-II; Marsh, 1992a) was used, but only the responses to the Academic Self-Concept scale from the SDQ-II were considered. A school status questionnaire was also administered to each participant.

Results indicated that the pre-test achievement (from Grade 6) was positively correlated with academic self-concept at Grade 8 and Grade 9. However, Grade 9 achievement was more highly correlated with Grade 9

academic self-concept. The BFLPE was illustrated here as these results indicated that students who attended schools with higher school-average achievements had lower academic self-concept than did students who attended schools with lower school-average achievement. These results imply that attending a school where school-average achievement is high simultaneously results in a more demanding basis of comparison for students with the school to compare their own accomplishments (social comparison effect) and also a source of pride for students within the school (reflected-glory effect). The authors further noted that these results clearly supported the reciprocal effects of academic self-concept and achievement. The results of their investigation demonstrated that imposed social comparisons do matter.

Guay, Boivin, and Hodges (1999) Study

With a view that perceived academic competence is a determinant of school achievement, Guay, Boivin, and Hodges (1999) studied the effect of social comparison processes on self-evaluations of children. Participants were 1,002 French Canadian children from 10 elementary schools. The children participated in an individual interview and completed the Self-Perception Profile for Children (Harter, 1985). Teachers then completed a questionnaire that assessed children's academic achievement in three subjects.

Results indicated that a total of 87% of the children believed that academic achievement was relevant to their self-definition. This indicates the likelihood of social comparison processes. In their study, it was noted that there are processes, which are fundamental to learning: relatedness, or being related

to others in the school context; competence, or perceiving oneself as competent; and autonomy. According to this model, perceptions of competence, autonomy and relatedness are progressively developed on the basis of their social interactions.

Abu-Hilal and Bahri (2000) Study

To test the generalizability of the self-concept theory as proposed by Shavelson et al. (1976), Marsh's revisions to the theory, and the internal/external frame of reference model to non-western samples, Abu-Hilal and Bahri (2000) examined the structure of self-concept using 569 students in the United Arab Emirates. Student participants included 276 elementary school students (grades 5 through 6) and 293 junior high school students (grades 8 and 9) randomly selected from the Al-Ain School District in the United Arab Emirates. Data from the two elementary grades was combined, as was data from the two junior high grades.

An Arabic-translated version of the Self-Description Questionnaire-I (SDQ-I) was used to collect data about students' self-concepts in three academic areas (verbal, math, and general school). Nonacademic self-concepts were ascertained using four nonacademic areas (physical ability, physical appearance, peer relations and relationship with parents) of the SDQ-I.

The confirmatory factor analysis identified the 7 facets that the SDQ-I was designed to measure. These results were consistent with the results from the western countries. One distinct difference was that the correlations among the subscales were rather large, compared to the correlations observed within the

western samples. Abu-Hilal and Bahri posited that their study did not show the distinctiveness of the different areas of self-concept that had been indicated in research from western countries. One suggested theory for this difference is that the younger Emirati children seemed less able to evaluate their worth in various areas. Abu-Hilal and Bahri posited that this could be because children in the Arab family, as well as the autocratic school system, are not socialized to be independent and responsible.

This study also indicated that the Arab students generalized their worth across self-concept areas, whereas, western children are more able to distinguish their worth in various areas. In considering the I/E model, the comparison processes rendered the clear support for the internal/external frame of reference hypothesis.

Mboya (1986) Study

Mboya (1986) conducted a study with 221 black American 10th grade students from five high schools in the Pacific Northwest. Participant's global self-esteem was assessed with the Coopersmith Self-Esteem Inventory (SEI; Coopersmith, 1967). Their academic self-concept was assessed using the Self-Concept of Academic Ability Scale (SCAA; Brookover et al., 1962; 1965; 1967). The California Achievement Test (CAT) measured academic achievement. No significant relationships were found between global self-concept and academic achievement scores. However, significant positive relationships were obtained between self-concept of academic ability and academic achievement score on the California Achievement Test. Analysis of results revealed that the relationship

between self-concept of academic ability and academic achievement correlated more strongly than the relationship between global self-concept and academic achievement.

This preponderance of evidence indicates that social context has a definite significance on the perceived self-concept. It has been noted that self-concept must be viewed within the context in which it appears. Therefore, when the reference group used for comparison purposes changes we would most likely see a corresponding change in the perceived self-concept. When the frame of reference is extended, as occurs in the transition from high school to the college campus, the effect of the high school frog pond might lessen or disappear.

Measuring Self-Concept

As noted by the diversity of measurement instruments indicated in the aforementioned studies, several instruments have been designed to facilitate assessment of self-concept. Prior to the 1980's there was a lack of theoretical models and appropriate measurement instruments to measure self-concept (Marsh, 1990). Today, however, there are over 200 different measures of self-concept and self-evaluation (Kling, Hyde, Showers & Buswell, 1999). Recent research has been based on measurement instruments that support the multidimensionality of self-concept.

Many measurement instruments are designed to assess global self-concept as a total score, as well as individualized, domain-specific scale scores such as academic self-concept. The targeted areas of research (e.g., academic,

social, family) must be considered in determining the design that would best provide evaluative information about the individual in the investigation. When the target of study is the self as a whole, then an instrument that measures global self-concept would be appropriate. When a more precise assessment is desired, such as determining the academic self-concept, an instrument that contains domain-specific assessments would better facilitate this goal. Various assessment instruments have several domain-specific areas such as mathematics, reading, problem solving, and science self-concept of ability scales.

The Self Description Questionnaire-III (SDQ-III; Marsh, 1987a) is designed to measure multiple dimensions of self-concept for college students and other young adults, generally in the age range of 16-25. The SDQ-III is also appropriate for older respondents, though there are important components of adult life that are not included in the SDQ-III. The SDQ-III is firmly rooted in the Shavelson et al. (1976) theoretical model of self-concept. The SDQ-III is a 136-item self-report scale that comprises 13 subscales: (a) 8 nonacademic (Physical Ability, Physical Appearance, Peer Relations-Same Sex, Peer Relations-Opposite Sex, Parent Relations, Emotional Stability, Honesty/ Trustworthiness, and Spiritual Values/Religion); (b) 4 academic (Verbal, Mathematics, Problem Solving, and General-Academic); and (c) 1 that measure overall global self-concept (General-Self). The items are structured on an 8-point Likert-type scale format; some subscales are composed of 10 items, whereas others are composed of 12. To disrupt acquiescence response biases, half of the

items in each subscale are worded negatively. The primary basis for estimating reliability in SDQ-III research has been the internal consistency of responses to items in each of the SDQ-III scales. The normative archive of 2,436 sets of responses to the SDQ-III was used to compute coefficient alphas for the scores representing the 13 SDQ-III factors. Coefficient alphas for the 13 factors vary from 0.76 to 0.95 (median = 0.89), and only the coefficient alpha of the Honesty/Trustworthiness factor is less than .84. Correlation statistics demonstrate that every individual item is significantly and substantially correlated with the other items designed to measure the same facet of self-concept.

The SDQ instruments are the ones most extensively used in factor analytic research on academic self-concept (Licht, Wagner, Simpson & Stader, 1997). The SDQ-III is considered to be one of the most extensively validated self-concept measures available for use with adults (Byrne, 1996).

It was hypothesized in this study that we would see a change in academic self-concept scores from the perceived high school assessment score of those students who graduated from schools with less than 100 in their class. It was further hypothesized that this change would be a negative big-fish-little-pond effect (present academic self-concept score would be lower) for those from schools of less than 100 in their class.

The purposes of the present investigation were (a) to use the General Academic Self-Concept scale of the Self Description Questionnaire-III (Marsh, 1987a) as a determinant of the students' pre-college academic self-concept (using their perception of abilities during their high school career) and (b) use this

same General Academic Self-Concept scale of the Self Description Questionnaire-III to assess their academic self-concept at their present college level. This study also (c) compared the pre- and present scores to ascertain differences between them to determine any relationship between scores and students' secondary school class size.

CHAPTER II

METHOD

Participants

One hundred eighty nine university students from Austin Peay State University psychology classes voluntarily participated in this study. Participants included a total of one hundred thirty females, and fifty-nine males. Ethnicity of the participants included one hundred forty white students; thirty-two African/American students; and seventeen students classified as "other" (Hispanic, Asian, Mixed race). The mean age of the participants was 25.06 years of age.

Materials

The Self Description Questionnaire-III (SDQ-III; Marsh, 1987a) was designed to measure multiple dimensions of self-concept for college students and other young adults. However, only one of the four Academic Self-Concept (ASC) scales (General Academic) was administered. The General Academic scale items were structured on an 8-point Likert-type scale format. The rating was from 1 = "definitely false;" 2 = "false;" 3 = "mostly false;" 4 = "more false than true;" 5 = "more true than false;" 6 = "mostly true;" 7 = "true;" 8 = "definitely true." To disrupt acquiescence response biases, half of the items in the subscale were worded negatively. These negatively worded items were reverse scored. The mean scores for each assessment (pre-college and present college) were ascertained for each student.

Procedures

Permission was obtained from various instructors in the psychology department to present the study to their classes and request volunteer participation. The brevity of the questionnaires allowed the collection of data within ten minutes of class time. The instructors allowed the students extra credit points to volunteer for the study.

Each volunteer was given a previously prepared, numbered (1-100) packet containing a cover letter explaining the study (Appendix A); the demographic questionnaire (Appendix B); the Pre-College assessment (Appendix C); and the Present College assessment (Appendix D). The students were asked to read the cover letter carefully and note that their completion and return of the enclosed forms constituted their informed consent to participate.

The demographic questionnaire requested demographic information (e.g., gender, race, age, year of high school graduation, size of high school graduating class; if high school was a public or private institution). This demographic information was gathered for descriptive purposes to assist in replication of the study. The reported size of the high school graduating class was used as an independent variable under investigation.

The Self Description Questionnaire-III General Academic Self-Concept Scale was used as both a Pre-College assessment and Present College assessment. The students completed the Pre-College instrument from the perspective that they had as a high school student; and the Present College instrument from their present perspective as a college student.

The SDQ-III General Academic Self-Concept scales were scored according to the guidelines designated in the SDQ-III manual. This study presented a mixed factorial design. The dependent variable was the General Academic Self Concept. The independent variable was the size of the graduating class. Two levels of high school graduating class size were examined. The small class (i.e., class size less than 100) and the large class (i.e., class size 100 or greater) were examined to determine if general academic self-concept differed with respect to the size of the graduating class. The repeated measure was the pre (high school self assessment) and the present (college self assessment) General Academic Self-Concept scale score on the SDQ-III. An analysis of variance (ANOVA) was performed to determine if general academic self-concept differed with respect to the size of the graduating class. It was hypothesized that there would be a decline in academic self-concept for those students whose high school graduating class consisted of less than one hundred students.

CHAPTER III

RESULTS

The purposes of the present investigation were (a) to use the General Academic Self-Concept scale of the Self Description Questionnaire-III (Marsh, 1987a) as a determinant of the students' pre-college academic self-concept (using their perception of abilities during their high school career) and (b) use this same General Academic Self-Concept scale of the Self Description Questionnaire-III to assess their academic self-concept at their present college level. This study also compared the pre- and present academic self-concept scores to determine if academic self-concept was related to high school class size.

It was hypothesized that academic self-concept scores would be related to size of high school graduating class. It was further hypothesized that this change would be a negative big-fish-little-pond effect. In other words, present academic self-concept scores would be lower for those from small high schools. Demographic information (e.g., gender, race, age, year of high school graduation, size of high school graduating class) was reported by each participant. The reported size of the high school graduating class was used as an independent variable under investigation. Students who had a graduating class of fewer than 100 were designated as the small class group. Conversely, students who had a graduating class of 100 or more were designated as the large class group.

Pre-College and Present College SDQ-III General Academic Self-Concept scores were collected for each participant. The small group consisted of 29 participants who graduated from a high school with less than 100 in their graduating class. Ages ranged from 19 years old to age 43 years old ($\bar{M}$ = 26, SD = 7.15). Ethnicity included 21 Caucasians, 4 African-Americans, and 4 others (i.e., Native American, Asian). Gender included 17 females and 12 males.

The large class group consisted of the participants who graduated from a high school with more than 100 students. Ages ranged from 18 years old to 52 years old ($\bar{M}$ = 25, SD = 7.03). Ethnicity included 119 Caucasians, 28 African-Americans, and 13 others (i.e., Native American, Asian). Females out numbered (n = 113) males (n = 47) in this group.

An analysis of variance (ANOVA) mixed design, using the class size as the independent variable, the academic self-concept as the repeated measure, was computed to determine the existence of an interaction between the groups. The analysis of variance revealed no significant interaction, (F *(1,187)* = *2.57*, p = *.11*). This means that academic self-concept scores did not change as a function of class size over time. In other words, when students compared academic self-concept current and past, they did not differ because of class size.

Scores for participants in the small group were compared to determine if students believed that their self-concept was improved as a function of attending college. Results indicated that students did not significantly differ in their self-concept t (28) = -1.63, p = .11. Although results were not significant, the

participants reported higher levels of self-concept ($\bar{M}$ = 58.14, SD = 8.28) as college students rather than as high school students ($\bar{M}$ = 54.86, SD = 10.56).

Scores for participants in the large group were compared to determine if students believed that their self-concept was improved as a function of attending college. Results indicated that students did not significantly differ in their academic self-concept (t (159) = 0.19, p = .85). The participants reported lower levels of academic self-concept ($\bar{M}$ = 57.74, SD = 10.11) as college students rather than as high school students ($\bar{M}$ = 57.90, SD = 10.33).

CHAPTER IV

DISCUSSION

Several theoretical views emphasize the importance of the social environment on the development and maintenance of the self-concept (i.e., Rogers, Smith, & Coleman, 1978.) Rogers et al. (1978) study, it was hypothesized that the relationship between academic achievement and self-concept is manifest most clearly within the context of specific social comparison groups or classrooms. Population size is one of the many aspects to be considered with regard to the social environment. The present study considered the population size of each participant's high school graduating class.

The present study investigated the General Academic Self-Concept of students as they perceived themselves in their high school social environment or "frog pond", and as they perceive themselves in their present college environment. The size of the student's high school graduating class was the variable that was investigated. In other words, the participants graduating from a high school class of less than 100 was considered to be from a small "frog pond", whereas participants graduating from a high school class of 100 or more was considered to be from a large "frog pond".

Results of this study revealed no statistically significant outcomes. In general, these findings do not support the hypothesis that there would be a decline in General Academic Self-Concept for students matriculating from a high school class of less than 100 students to a medium sized university.

Previous studies have found that self-perceptions of academic self-

concept tend to focus on scholastic competence, rather than global self-esteem (Byrne, 1996). Perhaps this finding is reflected in the present study. Although students' perceptions of General Academic Self-Concept did not change significantly from high school to college, a difference between the small size group and the large size group was apparent. Students from high schools with small graduating classes had slightly higher scores on current self-perceptions than students from larger graduating classes. Perhaps matriculation from a small school to a university actually increased their self-perception of scholastic competence. In other words, movement from a small "frog pond" to a somewhat larger "pond" may have increased self-perceptions of competence.

The lack of support for the stated hypothesis is consistent with Mboya's (1986) findings that when the reference group used for comparison purposes changes we would most likely see a corresponding change in the perceived self-concept. When the frame of reference is extended, as occurs in the transition from high school to the college campus, the effect of the high school frog pond might lessen or disappear. If the present study had been examined at a larger university (i.e., population greater than Austin Peay State) the results might have reached statistical significance.

A limitation of this study was the number of students from small schools (i.e., class sizes of less than 100) used for comparison. Results approached statistical significance with the small group, and a statistically significant outcome may have been realized had there been an increase in the sample size. The limited number of participants graduating from high schools with a class size of

less than 100 (i.e., small group, n = 29) may have been too restrictive. Future studies should consider reevaluating the class sizes to make the determination between small "frog ponds" and large "frog ponds".

Another consideration is that if the present study had been examined at a larger university (i.e., population larger than Austin Peay State) the results might have reached statistical significance. Within the larger university setting the possibility of having more participants from high schools with small numbers in their graduating classes might have been greater.

Further research in the area of academic self-concept might need to employ a true longitudinal design. Perhaps assessing academic self-concept during participants' high school senior year and repeating the assessment during their first or second year of college might produce a significant difference.

It is a basic assumption that self-concept is influenced by social context. Rogers, Smith, and Coleman (1978) emphasized the interplay between the individual and the individual's environment. In an academic setting, students tend to evaluate their academic abilities by comparison with students in their reference group or "frog pond" (Davis, 1966). Although small academic self-concept changes were reflected, those changes did not reflect a statistically significant difference based upon high school population.

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APPENDICES

APPENDIX A

RESEARCH INFORMATION TO PARTICIPANTS

To all participants,

You are being asked to participate in the following research study. Please read the following information carefully. This form is intended to provide you with information about this study. It contains the purpose of the investigation, the procedures to be used, risks/side effects and benefits of your participation in the study, and what will happen to the information collected as part of the research project in which you are participating. Your participation is voluntary. You may ask the researchers listed below about this study or you may call the Office of Grants and Sponsored Research, Box 4517, Austin Peay State University, Clarksville, TN 37044, (931) 221-7881 with questions about the rights of research participants.

1. The title of the research study: "Effects of the Frog Pond Population on Self-Concept"

2. The principal investigator: Denise S. Freeman, graduate student in the clinical psychology program; Dr. Stuart Bonnington, faculty supervisor.

3. The purpose of the research: The purpose of this research is to investigate students' perceptions of general academic self-concept as a pre-college student in their previous high school environment and also assess their general academic self-concept in their present college environment. This information collected will be used to determine if general academic self-concept differs with respect to the size of the graduating class. This research is being conducted to meet graduate degree requirements and will be presented to the graduate school to be published.

4. The procedures to be used. *What you will be asked to do.* You will be asked to complete the General Academic Self-Concept scales of the Self Description Questionnaire-III, as you believe you would have completed them as a high school student. You will also be asked to complete the General Academic Self Concept scales of the Self Description Questionnaire-III as they pertain to you today. The Self Description Questionnaire is a self-paced instrument; therefore, the time taken to complete the SDQ-III will vary. Typically, most respondents complete the entire SDQ-III within 20 minutes, so it should take 5 to 10 minutes to complete both the pre-college assessment and the present college assessment. As the SDQ-III is completed, you will be dismissed.

5. Regarding risks and benefits. There are no known risks in this study. Each participant will be assigned a number. This participant number will be the only identifying information on the questionnaires. If you decide to withdraw from the study, you can contact Denise Freeman or Dr. Stuart Bonnington to have your data removed from the database.

6. What will happen with the information collected? The information collected from your participation in this study will be used for purposes of instruction and scientific publication. Number only will identify the participants, therefore, identities of participants cannot be revealed in any published or oral presentation of the results of the study. Information will be made public in the form of summaries, which make it impossible to tell who the participants were. If you wish, you will be able to receive a copy of the results of the investigation and/or discuss the study in detail with a researcher at the conclusion of the investigation. If you are interested in receiving such information, be sure to let the researcher know as soon as possible.

Your participation will be greatly appreciated. If you choose to voluntarily participate in this study, your completion and return of the demographic form and the two questionnaires constitutes your informed consent to participate.

Thank you,
Denise Simpson Freeman

APPENDIX B

DEMOGRAPHIC QUESTIONNAIRE

Participant Demographic Information

Participant #_____

Date of Birth (e.g. 11/09/80) _____

Gender _____Male _____Female

Race _____

Date of high school graduation (e.g. 5/98) _____

Graduating class size, approximately (e.g., 19 students; 87 students; 230 students)

_____students

Was the high school from which you graduated a

Public high school _____ or Private high school _____

What is your present classification?

Freshman _____ Sophomore _____

Junior _____ Senior _____

Graduate student _____

APPENDIX C

SELF DESCRIPTION QUESTIONNAIRE-III

PRE-COLLEGE

Self Description Questionnaire – III

General Academic Self-Concept Scale

Pre-College Assessment

This is a chance for you to consider how you think and feel about yourself. **This is not a test** – there are no right or wrong answers, and everyone will have different responses. The purpose of this study is to determine how people describe themselves and what characteristics are most important to how people feel about themselves.

The following is a series of statements that are more or less (or more or less false) descriptions of you. Please use the following eight-point response scale to indicate how true (or false) each item is as a description of you.

The Likert scale format is as follows:

1 Definitely False
2 False
3 Mostly False
4 More False Than True
5 More True Than False
6 Mostly True
7 True
8 Definitely True

Please respond to the items as you would have responded as a high school student.

_____ I enjoy doing work for most academic subjects.

_____ I hate studying for many academic subjects.

_____ I like most academic subjects.

_____ I have trouble with most academic subjects.

_____ I am good at most academic subjects.

_____ I am not particularly interested in most academic subjects.

_____ I learn quickly in most academic subjects.

_____ I hate most academic subjects.

_____ I get good marks in most academic subjects.

_____ I could never achieve academic honors, even if I worked harder.

APPENDIX D

SELF DESCRIPTION QUESTIONNAIRE-III

PRESENT

Appendix D

Self Description Questionnaire – III

General Academic Self-Concept Scale

Present College Assessment

This is a chance for you to consider how you think and feel about yourself. **This is not a test** – there are no right or wrong answers, and everyone will have different responses. The purpose of this study is to determine how people describe themselves and what characteristics are most important to how people feel about themselves.

The following is a series of statements that are more or less (or more or less false) descriptions of you. Please use the following eight-point response scale to indicate how true (or false) each item is as a description of you.

The Likert scale format is as follows:

1 Definitely False
2 False
3 Mostly False
4 More False Than True
5 More True Than False
6 Mostly True
7 True
8 Definitely True

Please respond to the items as you feel today, as a <u>college student</u>.

_____ I enjoy doing work for most academic subjects.

_____ I hate studying for many academic subjects.

_____ I like most academic subjects.

_____ I have trouble with most academic subjects.

_____ I am good at most academic subjects.

_____ I am not particularly interested in most academic subjects.

_____ I learn quickly in most academic subjects.

_____ I hate most academic subjects.

_____ I get good marks in most academic subjects.

_____ I could never achieve academic honors, even if I worked harder.

VITA

Denise Simpson Freeman was born in Orlando, Florida on September 18, 1950. She attended elementary school in Madisonville, Kentucky and later moved to Clarksville, Tennessee with her family at the age of 13. She graduated from Clarksville High School in May, 1968. After graduation, she moved with her parents to Indiana where she later married, and became the mother of two children. In 1975, she moved with her family to Morehead, Kentucky where she entered Morehead State University and received the degree of Bachelor of Art in Education. She returned to Clarksville in 1983, and taught in the school system several years before returning to her studies at Austin Peay State University to complete a Master's degree in Clinical Psychology.