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Fawad Rafi

Winston-Salem State University, fsrafi@gmail.com

Nikolaos Karagiannis

Winston-Salem State University

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A comparative study of African-American males vs females at a minority institute of higher learning and the role of Supplemental Instruction

Fawad Rafi and Nikolaos Karagiannis

ABSTRACT

The purpose of this paper is to draw a comparison of high attrition rates among African-American males versus African-American females in higher education and examine the role of Supplemental Instruction (SI). The study was conducted at a minority institution (Winston-Salem State University) where African-American students are in the majority. For this study, data was utilised from Cooperative Institutional Research Program (CIRP) surveys, Accuplacer placement test scores of incoming freshmen populations, and academic assistance pursued through the SI Program by African-American male and African-American female students. Primary sources and available statistical information were also used. Comparisons were made between the study habits of African-American male and African-American female students and their implications for the retention rates of these students. These comparisons are presented in the findings section of the paper. Brief conclusions end the paper.

BACKGROUND OF THE PROBLEM

There is an abundance of social science literature available on many despairing conditions and experiences encountered by African-American males in education (Davis, 1994; Epps, 1995; Strayhorn, 2008). Garibaldi (1992) has indicated that academic failure for African-American male students begins early, affecting their ability to complete high school. Researchers have provided various conclusions to explain the lack of advancement in education for African-American males. Many researchers have long established that background characteristics of students play a vital role in predicting their academic success (Allen, 1992; Austin, 1993; Austin, 1999; Davis 1994). Research by Austin (1993, 1999) found a correlation between students' persistence and graduation rates and their study habits prior to their enrolment at an institute of higher learning. Hale (2001) has indicated that African-American males' persistence in institutions of higher learning is significantly debilitated by their under-preparedness in high school in regard to low GPA and low scores on standardised tests. Research by Hoyt (1999) suggests that students who completed an academic core curriculum in high school were 50% less likely to enrol in remediation courses in college as compared to students without this core. One popular conclusion usually mentioned in many studies pertaining to the failure of African-American males is the theory of "acting white" (Fordham & Ogbu,

1986), a label used by scholars to characterise academically inclined but allegedly snobbish minority students who were shunned by their peers. The authors Fordham and Ogbu (1986) also mentioned that African-Americans have formed a contrary culture due to the discrimination and oppression they experienced in the United States. This contrary culture encourages them to convince their peers to devalue academic success due to its perceived association with “acting white.” Besides this contrary culture issue, research has shown that “active learning” (a term that focuses the responsibility of learning on learners) improves the understanding of course material among students (Chickering & Gamson, 1987). Studies at other universities that have utilised SI have shown that students who participate in the SI programs achieve higher grades than non-SI participants (Lundeberg & Moch, 1995; Topping, 1996).

PURPOSE OF THE STUDY

The purpose of this study is to explore factors pertaining to the success and failure of African-American male students at a minority university. The study would assist other minority universities to evaluate and assess their institutional performances in regard to this issue. Researchers have indicated that there must be initiatives in place to better prepare African-American students for greater academic success at the college level (Davis, 2003; Garibaldi, 2007; Schlossberg, 1989). Although studies have examined the experiences of African-American males in higher education, the vast majority of these studies (Davis, 2003; Fries-Britt, 1997; Harper, 2005) have analysed academic success in relation to the above average African-American male college students while completely abandoning variables that contribute heavily to the attrition of underprepared African-American male students from college campuses. This study seeks to extend the terrain and specify variables omitted from previous studies.

METHODOLOGY, DATA COLLECTION, AND DATA ANALYSES

Our study was conducted at a minority institution of higher education in the Southeastern part of the United States. This institution attracts approximately 6,000 undergraduate, and 500 graduate students and data was collected from its Office of Institutional Planning and Research (IPAR).

We used a quantitative approach for this study in order to comprehend the gender differences in the numerical values associated with the key variables identified by this study. Participants for this study consisted of African-American male and African-American female first-year students enrolled between the Fall 2006 and Fall 2010 semesters. To avoid gender bias, there was a balanced representation between male and female tutors (11 female vs. 9 male tutors). Data was collected through Cooperative Institutional Research Program (CIRP) surveys, Accuplacer placement test scores (a test used primarily by more than 1,000 high schools and colleges in the US; James, 2007), and academic assistance pursued through the SI program. CIRP survey results were obtained from the IPAR. Accuplacer test results information was provided by the Office of Reporting and Analysis. Academic assistance acquisition information in terms of SI participation was obtained from the Division of University College and Lifelong Learning.

All incoming freshman students entering in the fall semesters of the institution are required to take the CIRP survey. For this study we used the

CIRP survey results from five consecutive fall semesters (Fall 2006–Fall 2010). In addition, students acquiring academic assistance through the on-campus SI Program were followed to determine the success rate of African-American male versus African-American female students. The SI Program was offered consistently between Fall 2006 and Fall 2010 (including spring semesters) in the following courses:

- Principles of Financial Accounting (ACC 2316)
- Biological Concepts (BIO 1301)
- Anatomy and Physiology I (BIO 2311)
- General Chemistry I (CHE 2311)
- Principles of Macroeconomics (ECO 2312)
- World Civilization from 1600 to the Present (HIS 1302)
- Elementary Statistics (MAT 2326)

These courses were chosen based on academic difficulty. The criterion of “academic difficulty” was determined by the high percentage of D, F, and W grades (30% or greater) for these courses during previous semesters. In addition, only students enrolled as freshman students in these courses were chosen for this study. Faculty members who had taught these difficult courses extensively before, and were teaching them again, were chosen for the purpose of the project. Students who performed well in the chosen courses during previous semesters were recruited as tutors for these courses. The tutors were required to attend the lectures for their assigned courses and were trained based on the model developed by the University of Missouri at Kansas City (UMKC) known as Supplemental Instruction (SI). SI sessions were scheduled twice per week for each course (1.5 hours per session).

All students enrolled in the SI courses had equal opportunities to seek additional help through the SI program. At the end of the semester, students’ participation in the SI program and final grades of attendees versus non-attendees were determined. After the data was collected, we divided it based on gender. We utilised the mean scores of all the variables used in the study. Calculation of mean scores was performed by using the Microsoft Excel program. Later, all mean scores were tested for statistical significance.

FINDINGS

Based on the methodology used, CIRP survey results indicated significant differences in learning and leisure activities between African-American male and African-American female students (Table 1). On average, African-American female students had a much higher percentage of positive attitudes/study habits towards learning than African-American male students. African-American female students indicated spending more time studying and less time in leisure activities than their male counterparts. The results of the CIRP surveys are in agreement with the overall first year retention rates at the chosen institution (Table 2) where the average first year African-American female retention rate between Fall 2006 and Fall 2010 is 77.2% compared to 72.8% for African-American male students. Despite the fact that the first-year enrolment rate of African-American female students was more than twice the enrolment rate of African-American male students, retention rates for African-American female students remained significantly higher.

Table 1
CIRP Results from Fall 2006-Fall 2010 (5-year averages)

CIRP survey item	% of African-American students	
	Male	Female
High school average grade B or higher	64	78
Felt bored in class during senior year in high school	41	30
Drank alcoholic beverage during senior year in high school	51	36
Studied more than 6 hours outside of class per week during senior year	14	21
Watched television for 6 or more hours per week during senior year in high school	38	31
Read for 6 or more hours per week for pleasure during senior year in high school	5	12

* $p < 0.01$

Table 2
African-American male versus African-American female first year retention rates, Fall 2006-Fall 2010 (University of North Carolina, 2011)

Year	No. students enrolled in first year		Retention rates (%)	
	Male	Female	Male	Female
2006	342	844	63.0	70.1
2007	301	661	68.8	79.1
2008	467	886	77.3	78.1
2009	254	540	78.0	76.5
2010	225	465	76.9	82.2
Averages	318	679	72.8*	77.2*

* $p < 0.01$

We also observed huge differences in remedial course enrolment proportions between African-American males and their female counterparts (Table 3). Accuplacer placement test scores indicate that African-American female students at the university of this study performed better than African-American male students, as fewer females scored below the minimum cutoff scores established for enrolment in remedial courses in the areas of math, English, and reading. While the use of remedial courses in postsecondary institutions is a common trend these days, little information is available about the effectiveness of such interventions. The findings of this research confirm similar studies (e.g., Crowe, 1998) that have indicated that only a few states in the US have exit standards for remedial courses.

Table 3

African-American males versus African-American females, remedial course enrollment at the institution of study, Fall 2006-Fall 2010

Entering year	% enrolment in remedial reading		% enrolment in remedial math		% enrolment in remedial English	
	Males	Females	Males	Females	Males	Females
2006	45	34	19	16	15	12
2007	38	24	21	14	23	11
2008	42	29	20	13	22	12
2009	41	32	23	17	23	14
2010	26	21	14	12	21	11
Averages	38*	28*	19*	14*	21*	12*

* $p < 0.01$

Results from Table 4 indicate that, on average, African-American male students at the institution of this study are less likely (less than 50% probability) to be retained after enrolling in one or more remedial courses, while African-American female students are more likely to be retained after enrolling in one or more remedial courses.

Table 4

Retention rates of African-American male versus African-American female students enrolled in remedial courses

Entering year	% of students retained after first year, post-enrolment in one or more remedial courses	
	Male	Female
2006	31	53
2007	29	61
2008	31	57
2009	36	51
2010	29	59
Averages	31*	56*

* $p < 0.01$

In addition, a total of 4,696 African-American students were enrolled in the selected SI courses between Fall 2006 and Fall 2010. Female enrolment in the courses chosen for SI was higher than male enrolment. As has been the case in many other minority institutes of higher learning in the U.S., female students overwhelmingly surpass male students in terms of higher college enrolment. In addition, African-American female students are more successful than their male counterparts in every statistical measurement of performance in post-secondary education (Slater, 1994). On average, 74% of students (range of 48% - 82%) enrolled in these seven courses and African-American females were chosen for the purpose of this study. On average, 32% of enrolled African-American females and only 21 percent of enrolled African-American males participated in the SI sessions over these nine (Fall 2006-Fall 2010) consecutive semesters (see Table 5). Female students participated in the SI sessions by more than a 50% higher rate than their male

counterparts. T-test results revealed that female participation in the SI program was statistically significant over male participation at the 1% level. As can be seen in Table 5, several courses had much higher student participation than others. The biggest difference in male versus female participation occurred in the BIO 2311 (Anatomy and Physiology I) course, for which only 25% of the males participated in the SI sessions as compared to 49% of female participants. The smallest percentage difference in male versus female participants occurred in MAT 2326 (Elementary Statistics), for which only 13% of the males participated in the SI sessions as compared to 17% of female participants.

Table 5

African-American male versus African-American female enrolment and participation in first-year courses in the SI Program, Fall 2006-Fall 2010

SI Course	Course enrolment (no.)			% of enrolled students participating in SI	
	Total	Male	Female	Male	Female
ACC 2316	880	456	424	9	6
BIO 1301	664	176	488	24	37
BIO 2311	616	120	496	25	49
CHE 2311	376	112	264	43	64
ECO 2312	656	344	312	17	26
HIS 1302	400	144	256	13	23
MAT 2326	1104	200	904	13	17
Averages	671	222	449	21*	32*

* $p < 0.01$

After the final grades were posted, percentage grades were compared for better accuracy to measure the student success rates (Table 6). On average, female participants' final grade of 76.81% was much higher than male participants' grade of 70.24%. T-test results revealed that the difference in percentage grades of female students from male students was statistically significant at the 1% level. The biggest difference in male vs. female percentage scores occurred in MAT 2326 (Elementary Statistics), in which the average grade for male SI session participants was 47.5% as compared to an average grade of 78.9% for female SI session participants. The smallest difference in male versus female percentage grades occurred in BIO 1301 (Biological Concepts), in which the average grade for male SI session participants was 66.97% as compared to an average grade of 67.27% for female SI session participants.

Table 6
*African-American male versus African-American female SI participants' net
percentage grades, Fall 2006-Fall 2010*

SI Course	Net % grades of SI participants	
	Male	Female
ACC 2316	73.59	76.23
BIO 1301	66.97	67.27
BIO 2311	73.65	71.25
CHE 2311	70.25	71.40
ECO 2312	80.37	87.50
HIS 1302	79.33	85.12
MAT 2326	47.50	78.90
Averages	70.24*	76.81*

* $p < 0.01$

A principle reason for using the SI method is to reduce the D, F, or W grades (DFW) for students in the above mentioned courses. For these selected courses, the DFW rates for both male and female attendees and non-attendees were computed (Table 7). On average, female participants' failure rates (20% DFWs) were much lower than male participants' failure rates (31%). T-test results revealed that the difference in percentage of DFWs obtained by female students from male students was statistically significant at the 1% level. The biggest difference in male versus female DFWs rates occurred in MAT 2326, in which the average DFW rate for male SI session participants was 53% as compared to an average DFW rate of 26% for female SI session participants. The smallest difference between the DFW rates of male and female students occurred in ACC 2316 (Principles of Financial Accounting) in which male SI participants had the DFW rate of 20% as compared to the 19 % DFW rate for the female SI participants. One reason that female SI participants earned higher grades than male SI participants could be due to the fact that female students visited the SI sessions more often than male students. The average number of visits by female students to the SI sessions was four times per course. On the other hand, male SI participants, on average, visited the SI sessions three times per course during the period Fall 2006-Fall 2010. The DFW rates for African American male and African American female students that did not attend the SI sessions were significantly higher than the DFW rates of African American male and African American female SI participants (Table 7).

Table 7

Comparison of African-American male versus African American female DFW percentages for SI and non-SI participants, Fall 2006–Fall 2010

SI Course	% of DFWs of SI participants		% of DFWs of non-SI participants	
	Male	Female	Male	Female
ACC 2316	20	19	46	41
BIO 1301	47	38	47	39
BIO 2311	33	35	61	53
CHE 2311	29	8	52	43
ECO 2312	25	10	33	29
HIS 1302	13	7	31	19
MAT 2326	53	26	44	37
Averages	31*	20*	45*	37*

Note. Averages have been rounded off.

* $p < 0.01$

LIMITATIONS

This study was limited and conducted at only one public minority institute of higher learning in a specific geographic area. Furthermore, this study only concentrated on first-year students, assuming equal representation between males and females. Third and fourth year certainly make up a sizable portion of the undergraduate student population at all four year institutions of higher learning, including minority colleges and universities. Finally, we were not able to collect any information about whether or not the participants were first generation students due to lack of data availability, inhibiting our ability to analyse other factors that can influence academic success of first year students at a minority institute of higher learning.

EVALUATION OF RESULTS AND RECOMMENDATIONS

Results of this study have shown that African-American female students are more serious about their studies and perform better than African-American male students. The findings have also indicated that students that seek help in academic support programs earn higher grades than those who do not participate in such programs. The evaluations of CIRP survey results and students seeking help (SI-participants) versus those not-seeking help (non-SI participants) in historically difficult courses have emphasised the fact that not only do SI-participants achieve higher scores (i.e., they perform better) but also the gender issue has become a significant factor (i.e., African American female students achieve higher scores and outperform their male counterparts in terms of obtaining a “C” or better grade). Moreover, the above figures are in the same vein with other similar studies that place emphasis on cultural and psychological factors in an attempt to thoroughly address these shortcomings and offer effective solutions.

Based on our analysis above, some straightforward recommendations are:

1. More attention and motivation should be given to African-American male students by both faculty and administrators to help them allocate more time and put more effort into their studies.

2. African-American male students should be encouraged to seek academic support when there are academic/educational difficulties.
3. Strategies for creating a supportive environment are needed. Such academic support should be well-organised and accommodating to the needs and schedules of African-American male students, which means that the timing factor of this academic support is crucial.
4. Instructors should possess the necessary teaching and interpersonal skills and should encourage students to seek help when their performance is unsatisfactory or when students are at high-risk of failing a course. Criteria to classify "high-risk" can be evaluated by determining student enrolment in remedial courses.

CONCLUSION

As African-American females have enrolled in greater numbers in minority institutions of higher learning, they are clearly the classroom majority, which possibly contributes to their higher level of engagement in all academic fronts than African-American male college students. Per CIRP survey results, African-American female students also had a history of concentrating more on their academic work and less on leisure activities since high school as compared to African-American male students. Due to better academic preparation in high school, African American female students at the institution of this study were enrolled in remedial courses in lesser proportions than African American male students. Female students also had a higher success rates in remedial courses than male students. In historically difficult courses, female students actively pursued more SI tutoring assistance than male students and significantly outperformed their male counterparts. An important point noticed in this study is that African-American male students had a history of taking their studies less seriously since high school than African-American female students. Male students are also less likely to actively pursue academic assistance than female students. Although the study confirmed aspects of the theory of "acting white," further research is needed to better understand the motivation levels and other factors pertaining to it among African-American male versus African American female students.

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