The Effectiveness of a Summer Program to Attract Minority Students into Mathematics and Science Teaching, their Attitudes towards Science, Mathematics and Teaching, and their Decision to Attend College

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Abstract

This paper describes the effectiveness of a summer program to attract urban minority high school students into science and mathematics teaching. The Advanced Academy for Future Teachers (AAFT) is a three-week summer program for rising juniors and seniors jointly sponsored by Atlanta Public Schools and Georgia State University. AAFT content focuses on elementary and secondary mathematics and science as well as various aspects of teaching. On the average over 69% of all AAFT participants reported that AAFT either had reinforced their decision to become a teacher or made them want to become a teacher. Qualitative data as well as preliminary data on post-graduation college attendance is reported.

Introduction

Several reports have documented the low achievement in science and mathematics (SM) of US high school students, particularly minority students, and the gap in achievement between majority and non-Asian minority students in science and mathematics (Education Trust, 2006). It has been suggested that improving the quality of teachers and, specifically, increasing the number of minority teachers may be one strategy for overcoming this deficiency (Singham, 2003; Zinth, & Dounay, 2006). The prevailing shortage of teachers calls for aggressive recruitment of high quality teachers and particularly recruiting from traditionally underrepresented groups (Darling-Hammond, & Dilworth, 1997). According to the National Commission on Teaching and American's Future (1996), recruiting and retaining quality teachers is one of the central strategies for improving our schools. This paper describes preliminary research findings on a program to attract high school students into teaching careers.

The Advanced Academy for Future Teachers (AAFT) is an Atlanta Public Schools (APS) and Georgia State University (GSU) partnered initiative. It is funded by the National Science Foundation (NSF) through a five-year grant project called Partnership for Reform in Science and Mathematics (PRISM). PRISM was started in 2003 and has, as one goal, to raise the expectations and achievement for all students preschool through college and to close achievement gaps among demographic groups. A related goal is to increase and sustain the number, quality, and diversity of teachers who teach science and mathematics (SM). AAFT was implemented to address these goals. The AAFT program's main focus is to recruit and train high school students as potential future science and mathematics teachers.

The first AAFT summer academy was piloted in 2004 with 34 students from one APS high school with three GSU faculty members and three APS teachers staffing the program. The three-week program has been held annually every summer since then and has attracted students from six APS high schools with a total of 198 participants, which includes 41 students who participated for two summers.

This paper describes findings on the effectiveness of the AAFT program for high school students in a largely minority urban district to increase their interest in pursuing a career in SM teaching or in a SM related field. The research follows the four AAFT cohorts (2004, 2005, 2006, and 2007) to determine if participation in AAFT influenced their decisions to become a teacher or choose a career in a SM related field. Their decision to attend college is also reported. The specific research questions addressed are:

1. What is the effect of a summer program for high school students in science and mathematics teaching on their interest in SM or SM teaching as a career?
2. What is the effect of a summer program for high school students in science and mathematics teaching on students' attitudes toward science and mathematics?
3. What is the number and percentage of participants who have graduated from high school and are attending college?

Review of Related Literature

There are several programs and initiatives to increase the number of science and mathematics (SM) teachers being prepared whether through traditional college teacher

preparation degree programs or alternative teacher certification programs. High profile reports, such as John Glenn's Commission on Mathematics and Science Teaching for the 21st Century, called *Before It's too Late,* called for the US to "increase significantly the number of mathematics and science teachers and improve the quality of their preparation" (National Commission on Mathematics Science Teaching for the 21st Century, 2000). In fact, in his 2006 State of the Union address, President Bush specifically called for the recruitment of 30,000 new mathematics and science teachers.

In a Report to Congress, Kuenzi (2005) summarized the numerous federal and state programs and efforts to recruit and retain teachers. Several of these programs have as their goal to recruit and reward teachers for teaching in high need schools (e.g., Federal Teacher Quality Enhancement Grants), to attract para-professionals, midcareer professionals, recent college graduates and members of the armed services (e.g., Troops to Teachers). Programs are focused on attracting members of minority groups into teaching (e.g., Ford Foundation Initiatives) and into teaching in "critical shortage" fields such as science, mathematics and special education. A few of the programs, cited by Kuenzi, focus on pipeline issues including recruiting students in the high schools. One program, North Carolina's Teaching Fellows Program, provides scholarships for students to attend college in return for four years of teaching service. It has been successful in recruiting and retaining teachers and been a model for other states (The Southeast Center for Teaching Quality, 2002). Other pre-college programs described by Kuenzi, target high school students who take future teacher courses in child development and teaching. No data are available on the effectiveness of these programs.

A wealth of data, documenting teacher shortages in science and mathematics, show that the number of college graduates with science and mathematics degrees applying for available teaching openings is insufficient and that experienced teachers are leaving the schools to take more lucrative jobs in industry (Levin, 1985; Rumberger, 1985; Malico, 2001; Recruiting new teachers, 2001; Valadez, 2003). Given the documented problem, there yet remains little evidence in the research literature of the effectiveness of programs to recruit teachers. In a thorough review of literature on teacher recruitment and retention, Guarino, Santibanez & Daley (2006) described the characteristics of individuals who enter and remain in the teaching profession, schools and districts that successfully recruit teachers, and policies that show evidence of success in recruiting and retaining teachers.

In this review, the focus is on the research on teacher recruitment. Results show consistently that individuals who enter teaching are predominately female and White, though minority participation began to increase in the 1990's. Further, there is some evidence showing that an altruistic desire was one of the primary motivators for entering teaching. The authors note that the "documented rise in minority participation may indicate increased accessibility to teaching positions and the attractiveness of these positions relative to other accessible positions" (Guarino et al., 2006, p. 184).

Guarino et al. (2006) also note that evidence related to pre-service policies (e.g., alternative certification routes), because of the lack of rigorous evaluations of alternative programs, is needed. Given the decentralized nature of recruitment efforts, the authors note that it is not surprising that information is not readily available on these programs. A further comprehensive review of policies and research on teacher recruitment and

retention (Allen, 2005) concluded that “Except for teacher preparation policies . . . , there were simply no adequate studies available on the great majority of the specific recruitment strategies implemented by states and districts” (p. 122).

Much of the literature on teacher recruitment focuses on programs to attract adults through alternate certification programs (Abell, Boone, Arbaugh, Lannin, Beilfuss, Volkmann, & White, 2006; Cavallo, Ferreira, & Roberts, 2005; Guarino et al., 2006). There is also literature on the attempts to recruit college students into teaching, especially SM. Survey results from one study (Moin, Dorfield & Schunn, 2005) suggest that successful candidates for K-12 teacher recruitment efforts include: 1) science, engineering & mathematics (SEM) undergraduates in their junior and senior years; 2) SEM undergraduates with mid-academic performance levels; and 3) math majors followed by natural science majors.

Further calls for increasing the number of students majoring in SM or SM teaching suggest that the concern needs to be addressed before students enter college to ensure that they have the prerequisite skills for the rigorous college SM courses (Viadero, 2005; Kennedy, & Schumacher, 2005). Though there have been several proposals and initiatives aimed at recruiting high school students into the teaching profession, there is no conclusive research or evidence on the impact of these programs. A report by Ward, Fernandez, & Wells, (2001) cited one such initiative in Texas. The program, entitled “A Proposal for Teacher Recruitment Initiative: Responding to the Texas Education Agency’s Challenge”, started in 2000. It was based on the premises that teacher mentor roles have great impact on students and that those pre-collegiate programs exposing students to teaching have the potential to lead the

students to a teaching career. Of 189 students, 39 indicated they would consider the possibility of teaching while seven had actually decided on a career in teaching. This led to the establishment of a future teachers' course and a future teachers' club at the high school. While this suggests some success, there needs to be more such programs and research on program effectiveness to begin to address the teacher shortages in science and mathematics.

According to Darling-Hammond & Sykes (1999), teacher recruitment and retention programs can be classified into five categories. They are: 1) precollege recruitment programs; 2) university-based programs to improve recruitment and retention of students in the pipeline; (3) community-college pathways to teaching; 4) programs that target para-professionals; and 5) programs to attract mid-career professionals and other college graduates. The program described in this paper addresses the first category.

Based on the literature review, programs like AAFT are not common, but also from the few studies available, it is clear that programs to enhance recruitment of high school students into a career in teaching is one potentially effective strategy. Many of the programs reviewed focus on students who are already in college and the attempts to get them into a career in teaching. Other programs focus on those individuals already in the work force who may be contemplating a career change. Reaching out to high school students preparing for college can be an efficient means of teacher recruitment and the PRISM AAFT program does just that. The AAFT program appears to be one of a few that attempts to recruit high school minority students into a career in science or mathematics and most importantly into a career in teaching SM. This

research therefore describes the implementation and preliminary research on a program to attract minority students into teaching, specifically in the areas of science and mathematics.

Methodology

This study employed a mixed-method design and includes both quantitative and qualitative methodologies. Quantitative data were obtained from the AAFT student data base and surveys and University System of Georgia (USG) data bases. Qualitative data were obtained through surveys, interviews and observations.

The Program

AAFT focuses on both content and the teaching of early childhood science and mathematics, secondary science, and secondary mathematics. Georgia State University (GSU) AAFT faculty developed curricula for the Academy with the assistance of Atlanta Public School (APS) Model Teacher Leaders. The curricula emphasize SM content in addition to teaching skills including hands-on activities such as lesson preparation and teaching, exposing students to application of theory in a classroom; simple laboratory science experiments; field trips such as to the Georgia Aquarium's learning centers and education department, the GSU Child Development Center, Zoo Atlanta, and walking tours of downtown streets and a park for data collection and experimentation; and exposure to technology such as power point presentations and web searches.

Participants receive three weekly Metro Atlanta Rapid Transit Authority (MARTA) cards for transportation. Because the students are in class from 8:30 – 1:00 each day, pre-paid meal cards for breakfast, lunch, and/or snacks are provided. Upon successful

completion of the Academy, students receive a stipend of $200. Students who attend and successfully complete two academies also receive a certificate recognizing them as an APS PRISM tutor. This enables them to tutor other APS students, mostly elementary and middle school students, as part of their community service hours required for high school graduation.

The AAFT teaching staff includes APS teachers and GSU higher education faculty members from both Arts and Sciences and the College of Education. Higher education AAFT instructors from GSU are identified by PRISM personnel. Each AAFT course has two instructors, one GSU faculty member and one APS Model Teacher Leader as well as a GSU graduate student. The graduate students, designated to be peer mentors, provide a wealth of information about college life to the AAFT students, many of whom have never been on a college campus.

Students are divided into three groups, one comprised of second year students only (so they don't repeat the same curricula) while the other two groups are first-time participants. Each group rotates through classes in early childhood SM, secondary science, and secondary mathematics, spending one week in each class. The specific SM content of AAFT is guided by the Georgia Performance Standards. The students are also provided with an in-depth look at the ways in which SM content is merged with effective instructional practices. While being taught SM content, students are asked to write lesson plans, teach lessons, and think about what it is like/might be like to be a teacher. The curriculum is designed to equip students with a basic understanding of child development activities that integrate SM; to challenge them to think logically; to begin to formulate a philosophy of teaching; to understand multiple intelligences and

personality types and how these affect teaching and planning, and to be a student teacher. In addition to daily assignments, participants keep a journal detailing their experiences.

On the final day, there is a closing ceremony, largely designed by the students, that includes special awards, video clips of AAFT activities, and student-created essays, poems, and posters describing their experiences. Participants are encouraged to invite their families to attend the ceremony and a reception that follows. Both events include all of their instructors and members of the Metro and state PRISM staffs.

The Participants

Most of the participants were APS rising high school juniors and seniors who attended the AAFT during the summers of 2004 – 2007. There were some students who attended AAFT in 2005, 2006, and 2007 from PRISM satellite schools in nearby systems. The total number of students who participated in AAFT during the four years was 198, including 41 students who participated in AAFT twice. Table 1 displays the demographic data for students who participated in AAFT. Note that enrollment dropped in 2007. The drop in enrollment may be in part because the leadership roles for AAFT shifted or changed and recruitment efforts were begun later than usual. Many students may have already committed to other summer programs. The return rate remained stable, presumably because second year participants already knew about AAFT and had made plans to attend.

Table 1: AAFT Participants by Year of Study, Note that demographic data were not available for some cohorts.

	2004	2005	2006	2007	Total
Participant numbers:					
Total Attendance	34	65	57	42	198
Unique Participants	34	51	44	28	157
Second-Year Participants	0	14	13	14	41
Gender:					
Male				14%	
Female				85%	
Race/Ethnicity:					
African American	100%	91%	98%	98%	
Asian		3%	0%	0%	
Hispanic		2%	2%	1%	
White		4%	0%	0%	
Grade Level:					
Rising Juniors		46%	49%	33%	
Rising Seniors		54%	51%	67%	

All of the 2004 AAFT students were members of a teacher's club. During subsequent years, that requirement was relaxed since not all high schools have a teacher's club. Twenty-five per cent of the 2006 cohort and 17% of the 2007 cohort reported membership in a teacher's club. Data for 2005 were not available.

Recruitment of participants is conducted jointly by Georgia State University, the Metro PRISM Project Director, and Atlanta Public Schools personnel. Participants are recruited through their high schools via applications that are distributed in March to principals, counselors, and teachers. The requirements for eligibility include a minimum GPA of 2.5, an original essay by the student, and recommendations from two of their high school teachers. Affiliation with a teacher's club is an added consideration but not a requirement after 2004. A committee selects qualifying participants and sends them invitations to attend AAFT. The Academy has the potential to host up to 80 students each summer.

Since the participants were minors, a parent or guardian was required to sign and return a letter of consent to have their child participate in AAFT along with a consent form agreeing to participate in data gathering. Participation was voluntary and there was no penalty for any student who decided not to take part in the research activities outside the program. However, the only students to date who did not participate were those not present or otherwise unavailable at the time of data collection. No student has refused to participate.

Data Sources and Evidence

Data sources include surveys completed by AAFT participants at the end of each summer session. For the pilot year, 2004, a very simple survey with only three questions was completed by participants. More comprehensive surveys were developed for 2005, 2006, and 2007. The surveys differ somewhat across the years as some individual questions were improved to increase clarity. New items were added to improve the quality and quantity of information collected. Some of these differences can

be seen in the preceding and subsequent tables where not all data were available. Overall, however, the forms for these three years are more similar than different. For 2005-07, several open-ended questions asked students about their interest in becoming a teacher in science, mathematics, or other subjects or a career in a SM related field. Students were also asked about their prospective college and career choices. They were asked to comment on what they learned relative to SM content and about teaching and becoming a teacher. They commented on what they liked and disliked about their AAFT experience and the program in general. They also rated and commented on the importance of SM in daily life.

Two other data bases were used. An AAFT data base was created with information for students who had registered for AAFT. This data base was merged with the University System of Georgia (USG)/P-16 data base. The resulting database provided information about which of the 109 AAFT students who had already graduated from high school attended any one of the 35 public colleges and universities in Georgia. The enrollment data up to Spring 2008 showed that 49 students enrolled in USG institutions, the level of the institution, year of enrollment, and number of terms/semesters completed.

AAFT participants not enrolled in USG institutions were called to determine whether or not they were currently attending college, what college they were attending, and, if possible, what their planned major was. College enrollment information was obtained for an additional 16 students. Information for the rest of the AAFT graduates was not obtainable for a number of reasons, the most frequent reason being that the

telephone numbers on file were no longer in service. Four individuals who were contacted declined to provide information by phone.

Data Analyses

Qualitative data were analyzed using content analysis of student responses to look for patterns, themes, and categories within the data. Data were analyzed by year and, when appropriate, across years.

Quantitative data from the USG and AAFT data bases were loaded into SPSS and analyzed for all AAFT years. Cross-tab analysis was employed to compare AAFT attendance to college enrollment and type of institution. Descriptive statistics showing numbers and percents are reported in the following section.

Results

Research Question 1 Results: Interest in Science and Mathematics or SM Teaching as a Career.

The AAFT survey was administered each year during one of the final two days of the AAFT program so response rates have been nearly 100%. However, not all students responded to all questions. Students were asked why they enrolled in AAFT. The majority of the students responded that they participated in AAFT because they already knew they wanted to be a teacher or they decided to attend so the experience could provide information that they could then use to help them decide about a career in teaching. Responses are contained in Table 2.

Table 2: Participants' Initial Reason for Enrolling in AAFT (Based on Survey Data)

Reason	2006	2007
I want to be a teacher	42%	37%
To help me make the decision to be a teacher	22%	16%

Using their actual three-week AAFT experience as a guide, students were asked to comment on the influence AAFT had on their interest in becoming a teacher. As shown in Table 3, about one third of the participants felt that AAFT had been helpful in supporting their decision to choose a career in teaching. In other cases, participants in AAFT reported that they were swayed to consider/reconsider a teaching career.

Table 3: Participants' Responses to the Question: How Did AAFT Influence Your Thoughts about Becoming a Teacher?

	2005	2006	2007
Reinforced my decision to become a teacher		38%	32%
Changed my decision about teaching from "No" to "Yes"	72%	46%	22%

Survey results, interviews, and observations also demonstrate that students overwhelmingly enjoyed the science and mathematics activities in AAFT. Almost 100% of the students over three years (2005-07) said they would like to return. Students were asked about their desire to teach, specific field in teaching, and also specific grade level. These data are contained in Tables 4, 5 and 6. Note that Table 4 indicates a drop

in interest in teaching for 2007. For this year, there was a shift in some AAFT leadership roles and recruitment was later than planned. Because there are several summer programs competing for the same students, including at least one program somewhat focused on teaching, potential AAFT participants may have opted for other programs so they would not be "shut out" of a summer program providing a stipend or college credit.

For all four years, over 69% of AAFT participants said they intend to enter the field of teaching with the majority expressing an interest in SM teaching. The majority of participants also indicated an interest in elementary school teaching including early childhood and day care education.

Table 4: Percent Responding "Yes" to the Question: Do you want to be a Teacher?

	2004 (N=33)	2005 (N=58)	2006 (N=49)	2007 (N=41)
Yes	100%	69%	76%	34%

Table 5: Teaching Field Chosen by Participants Who Responded "Yes" to the Question: Do you want to be a Teacher?

	2005 (N=58)	2006 (N=37)	2007 (N=25)	Average
SM	62%	83%	27%	57%
SM Related Field	7%	n/a	26%	16%

Table 6: Grade Level Chosen by those Who Responded "Yes" to the Question: Do you want to be a Teacher?

Grade Level of Interest	2005 (N=58)	2006 (N=37)	2007 (N=25)	Average
Elementary/Early Childhood	55%	46%	52%	51%
Middle School	8%	19%	16%	14%
High School	37%	30%	32%	33%

Students reflected on what they had learned at AAFT and seemed to understand the importance of SM and teaching. Table 7 shows what students reported about the importance of what they learned about how to teach and the importance of content knowledge in one's ability to be a good teacher. In some cases, more than one response was given.

Table 7: Percent of Students Who Responded to the Question: What Specific Knowledge Is Important for Teaching?

Type of Knowledge	2006 (N=49)	2007 (N=41)
Knowledge about how to teach	66%	46%
Importance of math content knowledge	13%	21%
Importance of science content knowledge	17%	48%

Most students responded that they learned about teaching and the importance of a strong SM content base for becoming a good teacher (Table 7). In addition, many students indicated that they learned new SM content knowledge during AAFT. Twenty percent of the 2006 participants and 32% of the 2007 participants indicated that they learned specific new mathematics content and identified the content they had learned. Twenty-seven percent of the 2006 participants and 56% of the 2007 participants indicated that they learned specific new science content and specified the content.

Research Question 2: Attitudes Toward Science and Mathematics

Students were also asked about the importance of SM in their daily lives. They were asked to use a scale from I to 10 where I = "Not Important" and 10 = "Extremely Important." Sixty-one percent of the 2007 participants rated the importance of mathematics in daily life a 9 or 10; 29% rated the importance of science in daily life a 9 or 10. This suggests that students are more aware of the importance of mathematics than science, even after an intensive SM summer program.

Research Question 3: AAFT Graduates Attending College

For 2005, 2006, and 2007, 100% of the participants reported that they plan to go to college. To date, 109 AAFT participants have graduated from high school. Table 8 contains the data by year.

Table 8: Number of AAFT Participants who have Graduated from High School

Year	2005	2006	2007	Total
Number	34	49	26	109

Of the 109 participants, college enrollment information was available for 60 students (55%). It was difficult to track majority of the students attending non-USG institutions as most of the telephone numbers provided were no longer in service. Further, this study was conducted in the middle of the Spring semester and as such most students were away from home. Table 9 shows that a majority of AAFT participants who attended college attended institutions within the University System of Georgia. However, we would like to point out that this is based on only data for previous participants whose information we were able to track beyond high school. Those tracked in USG institutions, comprise about 45% of all AAFT high school graduates.

Table 9: College Enrollment, by USG and Non-USG Institutions, for AAFT Participants who have Graduated from High School.

AAFT Attendance	USG Institution	Non-USG Institution	No Information
1 Year (N=75)	35 (47%)	9 (12%)	31 (41%)
2 Years (N=34)	14 (41%)	2 (6%)	18 (53%)
Total	49 (45%)	11 (10%)	49 (45%)

Table 10 displays data for 60 AAFT high school graduates who were tracked into college by type of institution in which they enrolled. These enrollment figures, 75% enrolled in four-year degree awarding colleges and 25% in non-degree colleges, matched what the students indicated in the AAFT survey about their desire to attend college.

Table 10: College Enrollment by Type of Institution

Type of Institution	Number of AAFT Students Enrolled (N=60)
Research University	16 (27%)
State University	29 (48%)
Two-Year College	12 (20%)
Other Colleges	3 (5%)

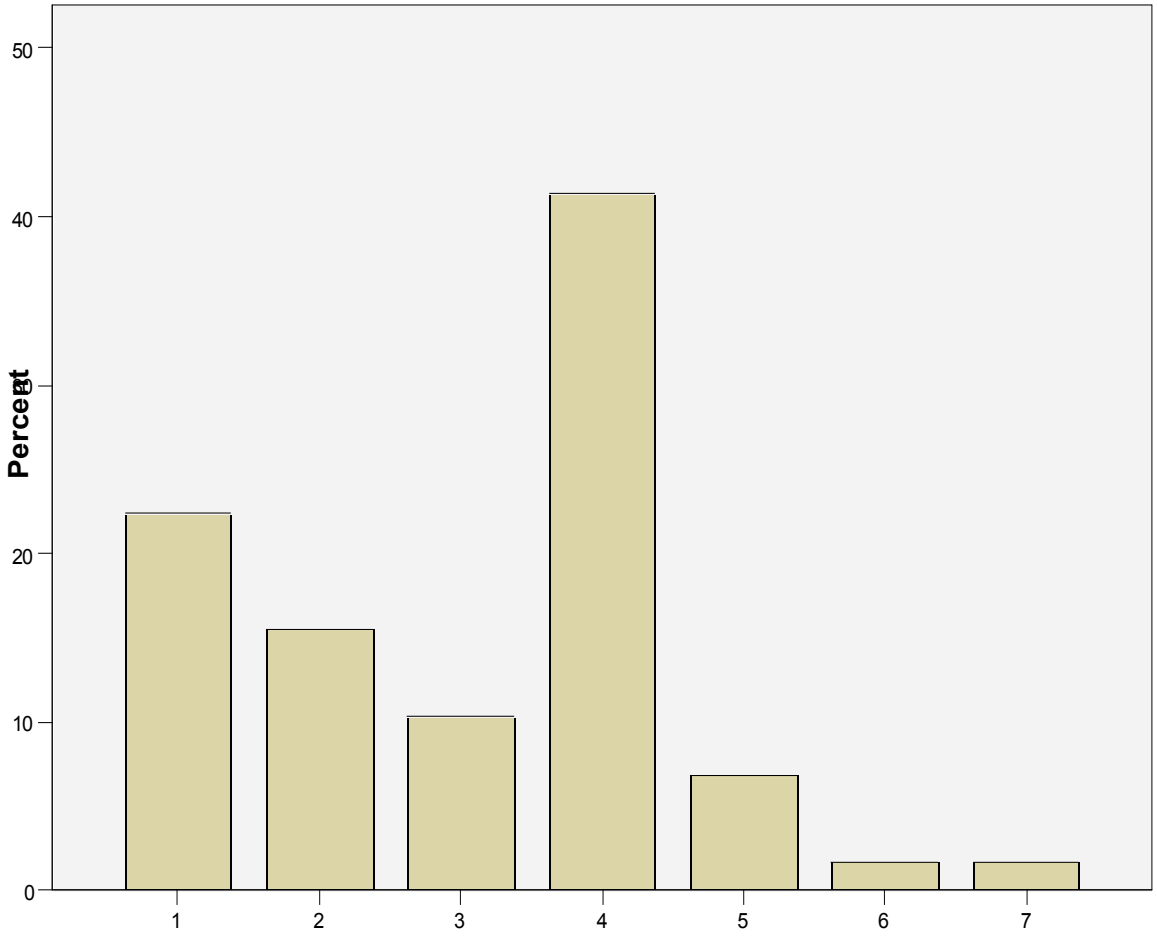
Analyses of college enrollment data indicated that AAFT students are progressing well in college. College enrollment data gathered from the USG data base and the phone interviews indicate that 10% of the 60 participants whose information was available attended college in 2006, while 68% attended in 2007 and 22% in 2008. Table 11 shows that a majority of the students are in their early stages of college (50% freshman). Looking at the 2004 AAFT participants' information, it is clear that the students are enrolling in college in a timely manner and progressing. Only 3 of the 23 AAFT 2004 participants are still in their freshman year.

Table 11: College Year of Study for 2004-06 AAFT Participants Attending College

Year	Freshman (N=30)	Sophomore (N=29)	Junior (N=1)
2004 (N=23)	3(13%)	19(83%)	1(4%)
2005 (N=28)	19(68%)	9(32%)	n/a
2006 (N=9)	8(89%)	1(11%)	n/a
Total (N=60)	30(50%)	29(48%)	1(2%)

Figure 1 shows that the majority of the students, 39%, are in their second year of study. AAFT is still in the early stages of implementation and previous participants who have graduated high school are in early years of college or just joining college. Course taking patterns and over all college enrollment trend cannot be determined as yet. Overall, figure one shows that AAFT participants are progressing well in college.

Figure 1: Percentage of Tracked AAFT Students Attending College by Number of Semesters Completed



Summary

Students' responses to the survey were positive in almost every case. The students seemed to enjoy their experience in AAFT as they professed to learn much

about teaching, particularly how hard the job was and the amount of patience it took. Many felt it had confirmed their decision to become a teacher, and others professed that it had changed their minds to reconsider a career in teaching. Many students said they learned specific SM content. Almost all of the participants who were eligible to return for a second year indicated that they would be interested in doing so. Students rated the importance of science and mathematics. Most felt that science was important but suggested that mathematics was more important in everyday life. For students tracked in colleges, it is clear that they are enrolling in a timely manner and progressing well. Most students are still in their early stages of college and have not chosen their college majors. This information will be tracked in follow up studies to determine if AAFT participants end up in a teaching career, and if so, whether it in SM or SM related fields.

Discussion

Study Limitations and Biases

A major limitation to this study is the fact many of the students who have "graduated" from AAFT are still in high school, thus limiting the number of students who can be tracked into college. There is also no confirmed way to follow up with those high school graduates who attend(ed) an out-of-state college or a non-USG institution within state. Phone interviews were attempted, and an additional 16 students were tracked, but most of the students were no longer at their contact phone number. Follow-up mail surveys may be considered for future research to try to contact as many students post-high school graduation as possible.

There is also the possibility of selection bias since participants attend AAFT as "volunteers." Most, but not all, of the students say they are interested in teaching on

their application forms, but it is difficult to confirm that this is the case until survey data are collected. Provision of the stipend may attract participants with no real interest in teaching; some see it as a "job" where they can earn some money over the summer. APS also offers several other competing summer programs, some for college credit on a college campus, and others award a stipend as does AAFT.

Conclusions

The AAFT program shows promise in attracting minority students into SM. Ninety-eight percent of the participants were African-American. Almost all students who enrolled in AAFT completed the three-week program; most of those who were eligible to return did so for a second summer. The results show that AAFT is a successful program for students interested in a career in teaching. At the end of the program, over 69% of the students across years expressed an interest in teaching as a career. Fifty-seven percent were specifically interested in SM teaching. Some 51% over three years expressed an interest in early childhood/elementary teaching; 14% indicated an interest in middle school teaching; and 33% indicated a preference for high school SM teaching.

Students recognize the importance of SM, although students reported that mathematics is more important than science in daily life. This is a finding for only 2007 AAFT students and should be replicated. While data were not available for tracking high school courses taken post-AAFT, it is of interest to determine if participation in AAFT as well as participants' thoughts about the importance of SM in daily life effects course taking in post-AAFT high school year(s). Based on the review of literature, it is reasoned by some that students who are better prepared in high school in SM will most likely do better in college introductory SM courses. Students who are successful in these early

stages of their college careers are more likely to remain in school and if they enter the teaching profession, they can eventually provide higher quality SM teachers. Additional data on the cohorts of AAFT students may strengthen the rationale for this thinking.

Results reported here also show that AAFT has promise for increasing the number of potential students into the pipeline for careers in teaching. Additional data is necessary to follow up with these initial findings as the first cohorts are followed through their college careers. It does appear that AAFT is a viable strategy for recruitment of students into a career in SM teaching and/or teaching in general.

That said, the program has only been in effect since 2004; only preliminary data on college going rates have been provided. Of those 109 AAFT students who have graduated, 49 were tracked to a USG institute and 11 to non-USG institutions. Of those 60 students, 65% attended or are attending a USG research or state university. Another 17% are attending a private college within Georgia; and 18% are attending an out-of-state college. Data also show that some 40% of the AAFT students who are attending a USG institute have or are completing their second year of college.

Continuing research will follow AAFT participants as they begin to declare and pursue their college majors. Since the vast majority of AAFT students are African-American, the program holds promise to be a successful and viable tool for recruiting minority students into a career in teaching. Additional data collection and follow-up is planned for all cohorts, including the summer 2008 AAFT participants.

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