

Tuition Waivers at the N.C. School of Science and Math

How NC wastes money on a tuition grant program

By Shannon Blosser and George Leef

Summary: Since the North Carolina School of Science and Mathematics (NCSSM) opened in 1980, the school has attracted some of the state's top high school students to come to Durham study at the residential high school. At the school, students take college-level courses, and they have performed well on SAT tests and in national competitions and been admitted to some of the nation's most prestigious universities. In recognition of the school's generally high level of academic achievement, in 2003 the General Assembly instituted a policy of waiving tuition charges for NCSSM graduates who enroll in any University of North Carolina institution. That policy, however, cannot be justified by any of the arguments advanced in its favor. It produces no public benefit, costs the state money, and unfairly discriminates in favor of NCSSM graduates. The General Assembly should consider repealing this costly and discriminatory policy.

Introduction

Located on the grounds of the former Watts Hospital in Durham, the North Carolina School of Science and Mathematics was the brainchild of former Governors James Hunt and Terry Sanford and author John Ehle.¹ The idea was to bring together the state's best high school students to study in a residential school that offered advanced learning in science and mathematics. Other states had already done the same thing, notably Virginia and New York. To the developers, the concept of a residential public school for gifted students would "shape the leaders and thinkers for a North Carolina of tomorrow."²

In 2003, the North Carolina General Assembly approved a law providing that any graduate of NCSSM who enrolls in any University of North Carolina institution will not be charged tuition.³ The General Assembly's action was predicated upon the belief that the school's graduates are especially strong students whom the state should attempt to keep within its borders.

This paper will examine the reasons given in support of the tuition waiver policy. Because the policy discriminates in favor of some North Carolinians and against all others, arguments advanced in favor of it should

demonstrate substantial benefits to the state that cannot be achieved otherwise. If they cannot, the General Assembly should give serious consideration to ending the policy.

The Case For the Tuition Waiver

The waiver will help the state's economy. Legislative advocates for the tuition waiver maintained that by giving NCSSM graduates free tuition at any UNC school, they would help improve the state's economy by augmenting the pool of highly educated workers in the state's labor force.

Leading the effort to pass the waiver was Senator Kay Hagan of Greensboro. She was instrumental in pushing it through in the final hours of budget negotiations in 2003. There was little discussion of the merits of the policy at the time of its adoption, but Hagan later stated that NCSSM students "are going to be the entrepreneurs and business leaders and the really hard workers" in the state.⁴ Senator Hagan also said that the tuition waiver "was one of the best things we got in the budget."⁵

The waiver will help NCSSM attract students. Another argument made in favor of the tuition waiver is that it is needed in order to make attendance at NCSSM more attractive. Gerald Boarman, president of the school, contends that going to NCSSM involves a considerable "sacrifice" because students are away from home and are not allowed to have cars on campus. Offering free tuition at any UNC school for graduates is thought to compensate for that "sacrifice."

Therefore, the case in favor of the tuition waiver amounts to the ideas that it (a) helps keep NCSSM graduates working in North Carolina and (b) helps fill up NCSSM.

The Case Against the Tuition Waiver

The waiver produces no economic benefit for the state. The contention that the tuition waiver will have a strong, beneficial impact on the economy of the state is unsupportable. Those who advance this contention are viewing North Carolina as if it were an autarchic political entity that must attempt to keep "its" people from leaving, much as 18th century mercantilists favored the hoarding of national wealth. North Carolina, however, is just a political subdivision of the United States, which is a great free-trade zone, and part of an increasingly global economy where political boundaries are increasingly irrelevant. For that reason, the tuition waiver policy cannot affect the economy of the state.

Supposedly, the tuition waiver is needed to prevent the "loss" of the bright and highly motivated NCSSM students to colleges and universities in other states. But is it a "loss" to the state if an NCSSM student (or a student at any other high school in the state, public or private) should choose to attend college in another state? Will there be any perceptible increase in prosperity in North Carolina if we induce a small number of NCSSM students to enroll at Chapel Hill or N.C. State rather than, say, Harvard, Stanford, or the University of Virginia?

No, there won't be. That is because business enterprises in the state compete for brainpower in an international labor market. Whether a prospective employee received his education in North Carolina, in Massachusetts, Europe, or Asia is immaterial. Firms will make job offers to the best individual they can find; where that individual received his bachelor's degree or doctorate doesn't matter in the slightest. Therefore, there is no benefit in trying to "hoard" state brainpower by inducing the brightest students to remain in North Carolina for their college education.

Similarly, students entering the national or international labor market are not going to be limited to employment in the state where they happened to get their degree(s). Even if an NCSSM graduate chooses to save some money by going to Chapel Hill rather than Harvard, MIT, or other top institutions, when the time comes to consider job offers, it is highly improbable that he would turn away offers from out of state simply because he graduated from UNC. Therefore, to whatever extent the tuition waiver "works" by keeping NCSSM graduates from attending out-of-state institutions, it is almost certain to fail later, when those graduates embark upon their

careers. Since people are very mobile and will usually choose their employment without regard to political boundaries, the NCSSM tuition waiver is unlikely to have even the slightest beneficial effect on the economy of North Carolina.

Moreover, just because a highly productive individual is employed in another state (or even country) does not mean that North Carolinians cannot benefit from his work. Where a scientist or mathematician works doesn't matter, since the economy's ability to disseminate knowledge is unaffected by political boundaries. Thus, "losing" students to other states doesn't necessarily entail any loss to North Carolinians.

Finally, most NCSSM students in the past have chosen to continue their education in North Carolina, enrolling in either a UNC school or one of the private colleges and universities in the state. From 1998 to 2003, before the tuition waiver was enacted, 663 NCSSM graduates chose to attend a UNC system school. An additional 494 graduates enrolled in one of the state's private institutions, such as Duke or Wake Forest.⁶ Therefore, the tuition waiver means that the state foregoes the tuition payments from many students who would have remained in North Carolina anyway. Students are in effect paid to do what they would have done anyway.

In short, it is erroneous to believe that North Carolina can make itself better off by attempting to induce NCSSM graduates to go to college in the state. The program is all cost and no gain.

The waiver is not needed to have full enrollments at NCSSM. No more persuasive is the argument advanced by Mr. Boarman that the tuition waiver is needed in order to get students to enroll in the school in the first place. According to Mr. Boarman, attending NCSSM entails a high sacrifice for students because it's a residential school where the students aren't allowed to have cars - as if being away from their parents was not a considerable attraction for some high schoolers and not having a car on campus prevents them from getting where they want to go. But even if we assume that some students perceive attendance as involving a sacrifice, the fact is that in the past the school has not had any difficulty in filling out its student body. From 1999 to 2003, NCSSM enrolled fewer than half of the incoming juniors who applied for admittance, enrolling approximately 300 students after receiving more than 600 applicants. In 2001 and 2002, NCSSM received more than 760 applicants, in both years, and admitted 302 students in 2001 and 292 in 2002.⁷ The school was turning away applicants prior to the institution of the tuition waiver, so it is impossible to give credence to the notion that it is necessary to have it to overcome the supposed sacrifice of attending.

NCSSM is in the same position as a store that enjoys a rapid turnover of its inventory. Such a store does not need to have a sale to boost its business, and neither does NCSSM need any added inducement to get students to attend.

Moreover, it is hard to see why it should matter to the people of the state whether bright students study at NCSSM or at some other school. The faculty and curriculum at NCSSM may be of very high quality, but it is not unique in that regard. There are other high schools in the state where highly intelligent students will be challenged. Even if NCSSM were not full every year, that wouldn't be a reason for concern.

Evidence of Declining Quality at NCSSM

The "economic benefits" argument in favor of the tuition waiver is based on the premise that NCSSM is a markedly superior school. Although many of its students excel, there is clear evidence that the school's academic standards have been eroding in recent years. Grade inflation, lower SAT scores and a lowering of the school's graduation requirements have diminished the school's academic quality at the same time the state is rewarding its students with free tuition at the UNC school of their choice. In effect, the school has been rewarded despite a lowering of its effectiveness.

Grade inflation. Just as there is evidence at the college level that student grades are being inflated for work of constant or even decreasing quality,⁸ it appears that grade inflation is also taking hold at NCSSM. Grade reports show a significant increase in the percentage of A's given to students from the Class of 1999 to the Class of 2003.

In 1999, the percentage of final grades given to that graduating class that were A's was 43.5 percent, while for the Class of 2003 the percentage of A's given was 52.9 percent.⁹

One might dismiss the increase in top grades as a consequence of better students enrolled in the school, but as we will see below, the average SAT scores of entering NCSSM students have been declining.

School officials do not need to have an actual written policy on grading to get the message across that they would prefer to have grades be assigned with more leniency. That message can easily be relayed through conference meetings with teachers where there is little if any paper trail to indicate where the school stands on grade issues. NCSSM faculty members¹⁰ talk of academic pressure placed on them from school administrators to grade a certain way in the classroom. Teachers whose grades have been "too low" have had to meet with school officials in closed-door sessions and told to avoid being "strict" with their grade distributions.

One faculty member, who spoke on condition that her identity not be revealed, described a meeting she had with the head of academic programs at the school. When the teacher asked if the school's policy favors high grades, he was told that the school wants grades "colleges can look at."

"There is a lot of overturning of grades," one faculty member said.¹¹ "I have adopted the philosophy that I will do my job the best way I can and I won't tell a lie about it. That is what's true."

The evidence of grade inflation at NCSSM is an indication that the school has deviated from a solid commitment to academic excellence and merit. It would be hard to justify the tuition waiver even if the school was adhering to strict grading standards, but the fact that it isn't further undermines the case for the waiver.

Lower SAT Scores. NCSSM's Class of 2004 had the highest SAT scores of any high school in the state and were also higher than the incoming freshmen class at the University of North Carolina at Chapel Hill. The average 2004 scores for NCSSM's Class of 2004 were 1,313¹² compared to UNC-Chapel Hill's 1,282¹³ for the incoming class for the 2003 fall semester. Impressive as those numbers are, it is important to note that NCSSM scores have been falling. NCSSM's average score in 2004 is 13 points lower than its average in 2002, when the graduating class had an average score of 1,330.

The drop in NCSSM's SAT scores comes at a time when other high schools across the state have seen increases in their SAT average scores. For instance, Raleigh Charter High School, which has the state's second highest average SAT score, has seen its score increase 51 points since 2002, going from an average score of 1,189 to an average of 1,240.¹⁴

By design, the SAT is used "to assess verbal and mathematical reasoning abilities that students develop over time."¹⁵ The test has been used by schools to measure their performance in teaching students the basics of reading comprehension and mathematical skills. The decline in NCSSM's average SAT scores shows that graduates are not as prepared to enter higher education as they were a few years ago, refuting the idea that grade inflation is due to enrolling brighter students and giving evidence of academic decay.

Furthermore, NCSSM leaders have focused attention on admitting students who typically would not fit into the school's academic profile in order to increase diversity. Faculty members believe the administration's push for more diversity at the school has served only to lower the academic quality of the institution because the best students are not always selected for admission. Since the beginning of Boarman's tenure at NCSSM, the numbers of applicants have increased from 654 in 1999-2000 to 1,070 for 2004-05.¹⁶ According to Carol O'Dell,¹⁷ a faculty member, part of the increase has been because of the tuition waiver and part due to the fact that admissions representatives have spent more time and energy recruiting in minority congressional districts, such as the First Congressional District in the eastern part of the state. State law requires applicants to be grouped by congressional district for purposes of reviewing their applications.¹⁸ O'Dell says the school has specifically gone out to black schools and churches to recruit students, something it had never done previously.

Mr. Boarman argues that the programs are what attract the students to NCSSM, increasing the applicant pool. "We are getting the very best students, a sampling of the very best students in North Carolina," Mr. Boarman said.¹⁹ It appears, however, that the increased emphasis on student racial diversity is working at cross-purposes with the objective of recruiting the top students in North Carolina to the school.

Switching from Semesters to Trimesters. Changes in the school's academic schedule, going from the semester system to a trimester system this school year, has also had the effect of lowering the academic bar at NCSSM.

Mr. Boarman argues that students at NCSSM work too hard and deserve a break from the school's rigorous academic requirements. "We were bringing kids in taking six courses that are college-level courses," Mr. Boarman said.²⁰ "That is the equivalent to 18 credits (in college). They do three hours of work service a week. They also have seminars, club activities, and sports. They also have supervised study. When you add up all of the hours, it is impossible for them to brush their teeth."

To ease some of this supposed overworking of the student body, the school implemented a new trimester scheduling system in 2004 that lowers the amount of time students actually spend in class and ultimately weakens the school's graduation requirements.

Under its former, traditional two-semester system, each NCSSM student was required to take a demanding course load that concentrated heavily on science and mathematics courses.²¹ The graduation requirements at the time had students take a mathematics course each semester. Using the newly-implemented requirements, a student can skip a semester of mathematics and still graduate. The new system also gives students more opportunities to take elective courses that often have little to do with a science and mathematics curriculum. Required physical activity, American history and English credits were also increased under the new system.²²

Whether or not NCSSM students were overworked under the old schedule is questionable. Very few students left the school, an indication that the students did not think that the academic burden was too great. What is clear, however, is that the trimester system has reduced the class time that teachers have to instruct students in their subjects. One faculty member²³ said the trimester system only allows for two-thirds of a course to be taught. "It is impossible to teach all of the skills we hope to teach in 10 weeks," the faculty member said.²⁴ "I don't know how to do that." By taking focus away from science and mathematics and lowering the graduation requirements, NCSSM has lowered the academic quality of the school even more.

Conclusion

The policy of waiving tuition charges for any NCSSM graduate who enrolls in one of the UNC schools cannot be justified. It will do nothing to improve the state economically. It discriminates unfairly against other North Carolina high school students who may be at least as academically promising as graduates of NCSSM, if not more so. It costs other citizens of the state in covering the NCSSM students' tuition at UNC. Finally, it rewards a school that has allowed its standards to fall. The General Assembly should consider repealing this costly and discriminatory tuition waiver.

NOTES

¹ North Carolina School of Science and Mathematics Web site, www.ncssm.org.

² *Ibid.*

³ Senate Bill 866 was introduced by Sen. Kay Hagen, D-Guilford, on April 3, 2003. Hagan was the lone sponsor of the bill. The tuition grant is listed in the General Statutes as Chapter 116-238.1.

⁴ "N.C. school banking on free tuition offer," by The Associated Press, published by CNN.com, Nov. 24, 2003.

⁵ "NCSSM grads get in-state tuition offer," by Lynn Bonner, *The News & Observer*, page 1A with continuation on page 16A, July 3, 2003.

⁶ NCSSM “Profile,” from 1998 to 2003.

⁷ NCSSM information on admittance and applicant information for the 1998-1999 to 2003-2004 academic years.

⁸ See, e.g., *www.gradeinflation.com* and Valen Johnson’s book *Grade Inflation: A Crisis in College Education*.

⁹ NCSSM’s “Profile,” from 1990 to 2004.

¹⁰ Several faculty and staff members, both current and former, discussed the current situation at the school on the condition of anonymity. Faculty members feared they would be fired in retribution for talking about the school’s academic problems.

¹¹ Identity of faculty member withheld.

¹² “The North Carolina SAT Report: 2004,” published by the North Carolina Department of Public Instruction.

¹³ “Statistical Abstract of Higher Education: 2003-2004,” University of North Carolina system, published in April 2004.

¹⁴ “The North Carolina SAT Report: 2004.”

¹⁵ “The North Carolina SAT Report: 2004,” background information section.

¹⁶ NCSSM information on applicant pool from 1999-2000 to 2004-2005.

¹⁷ Carol O’Dell is a mathematics teacher at NCSSM and former president of the Faculty Senate. O’Dell has been a vocal critic of some of the concerns at NCSSM. School officials have declined to renew her contract at the end of the current school year.

¹⁸ North Carolina General Statute 116-235.b(1).

¹⁹ Interview with Gerald Boarman conducted by Shannon Blosser on August 19, 2004.

²⁰ *Ibid.*

²¹ North Carolina School of Science and Mathematics Student Handbook, 2003-2004.

²² North Carolina School of Science and Mathematics Student Handbook, 2004-2005.

²³ Identity of faculty member withheld.

²⁴ Identity of faculty member withheld.

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