

Credit and Placement Issues for the Academically Talented Following Summer Studies in Science and Mathematics

Sharon J. Lynch
The Johns Hopkins University

Abstract

The purposes of this study were to ascertain the proportion of academically talented students aged 12 to 16 who pursued appropriate school placement and/or credits for coursework completed at special summer academic programs, and to determine how their schools responded to their requests. In November 1986, 1215 students who attended science and mathematics classes sponsored by the Johns Hopkins University during the summer of 1986 were sent questionnaires regarding their subsequent status at their regular schools pertaining to credit and placement issues. Advanced placement was given more often than credit, although in most cases both were awarded, particularly for high school level coursework.

Special summer academic programs for mathematically talented adolescents are widely recognized as an impetus for the early development of knowledge and skills essential to high achievement in science and mathematics. But the effect of these programs on the student's academic development depends very much upon the regular school's response when the student returns. Will the school acknowledge in some meaningful way academic work completed successfully outside of its regular program?

This paper explores credit and placement issues that arise after participation in such programs, focusing specifically on the science and mathematics courses offered by The Johns Hopkins University Center for the Advancement of Academically Talented Youth (CTY).

Background

Many CTY classes are designed to teach standard high school-level science (Stanley & Stanley, 1986) or mathematics (Stanley, 1977) coursework, such as Algebra I or Biology I (although other classes focus on advanced, nontraditional coursework such as astronomy or computer science). In the high school-level courses, needless drill on readily grasped concepts is replaced by diagnostic testing and prescriptive instruction. Students demonstrate their competence by high performance on recognized standardized achievement tests and individual teacher assessments. The classes are aptly described as "accelerated" (George, 1976).

One of the initial premises was that these bright youngsters should be involved in important decisions regarding their education. If they wish to advance in mathematics or science on

their "own time," learning with students equally talented in a highly unorthodox and demanding academic setting, the choice should be theirs. But if these students learn high school material during the summer, what will they take at their regular schools the following fall? How will schools respond to this unusual program?

Schools' responses have varied greatly—some are relieved that there is a program that provides specialized instruction to exceptional students who need something well beyond what the schools can readily provide. Others adhere strictly to traditional, lock-step practice in curricular matters and cannot tolerate any deviation.

Significant numbers of academically talented American students are now involved in special summer programs. They, their parents, and their schools must come to grips with the credit and placement issues arising from participation in these rigorous academic programs (Class of 1983 follow-up survey, 1987; VanTassel-Baska et al., 1984).

Credit is usually less of an issue than placement. Academically talented students often accumulate more than the minimum credits required for graduation. However, the trend toward increasing required credits for high school graduation could pose problems if graduation hinges on credits for courses taken outside the regular school (Higham, 1985).

Putting the Research to Use

The results of this study should be especially helpful to educators and parents who are considering the possibility of a gifted and talented student substituting nontraditional coursework for regular courses at school. Since special summer academic programs for the gifted and talented are proliferating, the question of how they may affect the regular school program is important. Taking special academic classes outside of school may have impact on the student's future studies (placement issues), as well as high school graduation credits (credit issues). If the student, parents, and school personnel have adequate information, then they will be better able to plan an optimal program for the exceptionally talented and eager student. The data reported here should help to make these credit and placement decisions easier, by pointing to common practices in school districts across the United States in responding to students who accelerate their studies through special programs.

The acknowledgment of completed work through appropriate placement, however, can be a critical issue. Appropriate placement means that the local school recognizes that the student has taken a course (e.g., algebra I) and will place the student in the next course in the sequence (e.g., algebra II or geometry). It is pointless and usually counterproductive for a talented student to repeat material that has already been mastered. Moreover, students' accomplishments should be noted in their school file, both to establish a record of their participation in a highly regarded program and to provide continuity in the academic record.

Methodology

In November 1986, 1215 students taking a science or mathematics course at CTY's 1986 summer program were sent a questionnaire asking for specific information on credit/placement requests and their school's response. If a student took two consecutive courses, a survey was sent for each course since the outcomes could have been different. Surveys from 570 students (47%) were returned, and the data were collated and analyzed.

Results

The students responding represented 30 states and three foreign countries and were from public schools (71%), private schools (20%), and parochial schools (2%). Seven per cent said that they attended a special school for the gifted and talented. About one of five reported that they had skipped one or more grades in school, a surprisingly large proportion. The students were currently enrolled in grades seven through college level, the vast majority being in grades eight, nine, and ten. Males made up 68% of the respondents; females, 32%.

Of the 570 students responding, about half (278) said that they had requested credit or placement or both from their schools for summer coursework, and 210 reported receiving it. This means that the schools responded favorably to the requests in the vast majority of the cases (76%).

In order to understand why only half of the students requested credit or placement, it is useful to divide the CTY science and mathematics coursework into two broad areas: "high school coursework," i.e., courses designed to replace those usually contained in a standard American high school curriculum; and "nontraditional coursework," that is, courses not ordinarily taught in American high schools. The material offered in nontraditional coursework is most often encountered at the college level, but the division between this and traditional high school coursework is necessarily somewhat arbitrary since course offerings in high schools and colleges vary greatly. Students request high school credit or placement for the nontraditional coursework far less frequently. Consequently, this paper will focus on the 320 students who took traditional high school coursework.

High School Coursework: Science and Mathematics

Table 1 summarizes the results of this portion of the study. The precalculus mathematics program had the highest frequency of requests for credit and placement and a high frequency of requests granted. Both schools and students seem to be using these courses as they are intended.

Table 1
High School Coursework: Science and Mathematics
Credit and Placement Requests and Awards

	Requests for		Awarded Credit and/or Placement
	Questionnaires Returned	Credit and/or Placement	
Precalculus	197	161 (82%)	131 (81%)
Fast-Paced Science	71	37 (52%)	29 (78%)
Advanced Placement	31	11 (35%)	9 (82%)
Intro. Biology, and Anatomy & Physiology	21	13 (62%)	9 (69%)
TOTAL	320	222 (69%)	178 (80%)

- a. Numbers in parentheses indicate requests as a percentage of questionnaires returned.
- b. Numbers in parentheses indicate awards of credit and/or placement as a percentage of requests made.

For the fast-paced high school science courses (biology, chemistry, and physics), however, only about half of the students reported requesting credit or placement. Why didn't the others request their school's recognition for these courses?

Of the 32 students taking fast-paced science courses who did not request credit or placement, 18 reported that they took a class simply because they were interested in the subject, one said that there was no similar class in the school, and three reported that they did not do sufficiently well in the course to receive credit or placement and were repeating the course. Ten said they used the course as a "prep course," to prepare for a class which they would take in school the following year, a use of the class which was never intended.

The other courses in Table 1 are not intended to replace a high school class, and credit and placement issues are therefore far more variable, the ultimate test being performance on the Advanced Placement (AP) examinations offered by the College Board each May. Students who do well on AP exams may receive college credits and advanced placement.

Overall, 69% of those students who took high school coursework in science and mathematics requested credit or placement, and 80% of those received it.

Examining credit and placement as separate issues, Table 2 shows that the majority of requests for credit were honored (118 out of 171 requests), although before granting credit, some schools asked students to take additional examinations at the school. Six students needed letter grades in order to get credit at school.

Some respondents commented that their schools gave placement but not credit, or that "extra classes taken" were merely recorded on students' official transcripts. Another comment was that high school credit could not be granted before ninth grade—many of these students were in middle school and junior high. Other explanations were that credit would not be awarded because the course was not equivalent to the school's course, that CTY was not sufficiently well-known by the school, or that the class needed reinforcement at the school.

The vast majority of requests for appropriate placement (see Table 2) were greeted favorably—only 23 out of 198 requests were not granted. In 38 cases the schools required in-house examinations before placement. Apparently, many schools routinely recognize students' accomplishments in such summer courses but find it easier to do so through appropriate placement rather than by granting credits.

The students and parents reported that many schools were extremely positive, routinely and readily integrating the coursework with the school's curricula. Some comments indicated that the program should work more closely with schools in this regard. Concern that the student might not

be able to do the work in the next class in the sequence was sometimes expressed. Several students were not appropriately placed due to schedule conflicts, and some students couldn't be appropriately placed because, especially in the case of advanced courses, there was no logical sequel in the high school curriculum.

Facilitating Credit and Placement Issues

The last section of the survey asked if CTY could facilitate communication between students/parents and schools about credit and placement issues. In 63 responses, the most frequent (22) comment was that more detailed information on the content of the specific course would have been helpful. Other responses indicated that letter grades are needed (9), suggested that the materials be sent sooner (13), requested statements of equivalent courses at schools (7), and requested a list of schools that regularly give credit and placement (4). (The remaining responses indicated satisfaction with the materials.)

Discussion

The results of this study show that the majority of students (80%) who request that their schools recognize the summer work by awarding credit or placement receive it.

Credit issues can be crucial when they involve high school graduation requirements, particularly the new more stringent requirements recently adopted by some states. Suppose a school district requires that students take three years of

Table 2
Schools' Responses to Request for Credit or Placement

	No Problem	Some Questions	Required Exam	Very Reluctant	Required Grade	Refused to Grant
CREDIT						
Precalculus	31	21	29	1	5	36
Fast-Paced Sciences	11	3	4		1	10
Advanced Placement	2	1	2			2
Intro. Biology, and Anatomy & Physiology	1	2	4			5
TOTAL	45	27	39	1	6	53
PLACEMENT						
Precalculus	55	34	34	3	8	14
Fast-Paced Sciences	15	9	2			6
Advanced Placement	3	1	1			1
Intro. Biology, and Anatomy & Physiology	3	6	1			2
TOTAL	76	50	38	3	8	23

mathematics in *senior high school*. If a talented student enters high school ready for calculus (having completed precalculus in a summer program), that student probably will not find three years' of mathematics courses to take at the high school and will not be able to satisfy the letter of the graduation requirements. In such cases, getting high school credits recorded for courses taken elsewhere is extremely important (Higham, 1985).

Schools are understandably cautious about granting credits for outside coursework. Moreover, since many courses are accelerated in the sense that they are generally completed in less time than an equivalent course at a high school, schools are sometimes skeptical about students' subject mastery.

In order to provide schools the information to make sound decisions regarding the granting of credits for special summer coursework, each student is sent a course description, syllabus, and an individual narrative evaluation, as well as a record of performance on standardized achievement tests in the subject which is given at the course's completion if an appropriate test is available. The testing record compares the student's performance in the subject with a suitable national norm group.

Although some schools have asked that the student evaluation materials be sent directly to the school, CTY works through the students and their parents to deliver relevant information, assuming that it is their right to decide whether to inform the school of their child's performance. Students and their parents are strongly advised to notify school officials that they intend to take classes and discuss credit/place-ment concerns *before* taking a summer course, but only about half of the students follow the suggested procedure. The rest wait until after the class has been completed. Schools would probably be more amenable to granting credit or placement requests if they were consulted before the course was taken.

To facilitate discussions between student/family and the school, we provide a list of recommended course sequences and equivalents for high school credits and a statement of grading policies, which states that we prefer not to award letter grades but will do so if the school requires it.

Some states have provisions written into their state guidelines for credit by examination. Such provisions provide students who show their achievements through high performance on reputable examinations a ready path for securing credit and placement. West Virginia, for example, allows the student to place out of required courses by using approved tests ("testing out") (State of West Virginia Policies 2419 and 2444.01). In addition, that state allows the student's Individualized Educational Planning (IEP) committee to determine how and when the student will complete the necessary credits for high school graduation (State of West Virginia Policy 2419-2.4 Gifted, A-2-e), paving the way for more creative and flexible use of education options on a case-by-case basis.

Conclusions

Opportunities for educational advancement for academically talented students exist outside, as well as within, schools. The ideal would combine an excellent program for talented students within every school with ready access to special opportunities offered by colleges, universities, museums, and other external resources. While a multi-faceted approach ought to be available to all students, not only the most able, it is probably true that highly talented students have the greatest need for additional resources.

With the proliferation of special programs for the gifted and talented offered by institutions other than the schools, the establishment of flexible but clearly articulated policies regarding credit and placement issues would be a help to everyone. Such policies should include provisions for recognizing standardized examinations both as evidence of subject matter mastery and as a basis for awarding credits. High school credits should be given for high school level work completed at any age.

Author Notes: The author would like to thank William Durdin, Patricia O'Connell Ross, and Julian Stanley for their careful review of the article and comments. The assistance of Lisa Rosner and Kirsten Oeste in the data collection and analyses is also gratefully acknowledged.

References

- Class of 1983 follow-up survey. (1987). *The Talent Search Reporter*, (California State University, School of Education, Sacramento), 3(1), 1.
- George, W. C. (1976). Accelerating mathematics instruction for the mathematically talented. *Gifted Child Quarterly*, 20(3), 246-61.
- Higham, S. J. (1985). A new dilemma for the academically talented student or the high school graduation requirement blues. *Academic Talent*, 1(2), 1-3.
- Olzowski, P. (1989). Development of academic talent: The role of summer programs. In J. Van Tassel-Baska, & P. Olzowski-Kubilius (Eds.) *Patterns of influence on gifted learners: The home, the self, and the school*. New York: Teachers College Press.
- Stanley, J. C. (1977). A rationale of the Study of Mathematically Precocious Youth (SMPY) during its first five years of promoting educational acceleration. In J. C. Stanley, W. C. George, & C. H. Solano (Eds.), *The gifted and the creative: A fifty year perspective* (pp. 75-112). Baltimore: Johns Hopkins University Press.
- Stanley, J. C. (1984). A baker's dozen of years applying all four aspects of the Study of Mathematically Precocious Youth (SMPY). *Roeper Review*, 7, 172-175.
- Stanley, J. C., & Stanley, B. S. K. (1986). High-school biology, chemistry, or physics learned well in three weeks. *Journal on Research in Science Teaching*, 23(3), 237-250.
- VanTassel-Baska, J., Landau, M., & Olzowski, P. (1984). Benefits of summer programming for gifted adolescents. *Journal for the Education of the Gifted*, 8(1), 73-82.